Project Management in Action: Identifying Cultural Differences in Mexico and the United Kingdom

Carlos González Peláez

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Heriot-Watt University

School of Management and Languages

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Abstract

The use of Project Management in multinational companies has increased in recent times. Applying project management methodologies to ensure project success and to achieve the desired outcomes has become an important area of focus for all organisations.

In this context, Petróleos Mexicanos (PEMEX) and Comisión Federal de Electricidad (CFE), two state-owned organisations in Mexico have started a process of opening up to foreign investment, with companies from the United Kingdom at the frontline. However, it is difficult for PEMEX and CFE to achieve project success without following a structured approach.

By examining the role of Mexican culture as a factor while managing projects, this study attempts to explain how national, organisational and personal culture impact projects. Furthermore, once identifying this role, this research endeavours to understand how a team in a multicultural project gives an organisation a competitive advantage and helps a project to be completed on schedule and within budget. Finally, this study creates a “success factor list” that will help organisations verify if they are managing their projects/teams using the best practices available.

To achieve this, the researcher applied survey questionnaires to several project managers and project team members in both the United Kingdom and Mexico and interviewed experienced project managers to cross-reference the results from the surveys.

By dividing the elements of project management into five broad areas, the researcher was able to identify the project success factors that an organisation has to achieve for a project to be successful and to gauge the project status.

Finally, the aim of this study is fulfilled, as these elements assess and determine the factors of Mexican culture impacting projects carried out by multinational companies working along with governmental entities in Mexico.
To my family, for their unwavering and unconditional support. To my friends, for their laughs and kind words.
Acknowledgements

A PhD research seems to be a never-ending process and it would remain that way without the help of the people who made this research possible.

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Second, I wish to thank the Consejo Nacional de Ciencia y Tecnología (CONACYT), for funding the scholarship for the PhD research.

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<td>BAE</td>
<td>British AeroSpace Systems</td>
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<tr>
<td>BP</td>
<td>British Petroleum</td>
</tr>
<tr>
<td>CFE</td>
<td>Comisión Federal de Electricidad (Federal Electricity Commission)</td>
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<tr>
<td>CCPM</td>
<td>Critical Chain Project Management</td>
</tr>
<tr>
<td>CCTA</td>
<td>Central Computer and Telecommunications Agency</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CONACYT</td>
<td>Consejo Nacional de Ciencia y Tecnología</td>
</tr>
<tr>
<td>CPM</td>
<td>Critical Path Method</td>
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<tr>
<td>CQ</td>
<td>Cultural Intelligence</td>
</tr>
<tr>
<td>EBSCO</td>
<td>Elton B. Stephens Company</td>
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<tr>
<td>GLOBE</td>
<td>Global Leadership and Organisational Behaviour Effectiveness</td>
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<tr>
<td>GWh</td>
<td>Giga Watt per hour</td>
</tr>
<tr>
<td>IBM</td>
<td>International Business Machines</td>
</tr>
<tr>
<td>IDV</td>
<td>Individualism Index</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>INEGI</td>
<td>Instituto Nacional de Estadística, Geografía e Informática</td>
</tr>
<tr>
<td>IPMA</td>
<td>International Project Management Association</td>
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<tr>
<td>IT</td>
<td>Information Technologies</td>
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<td>LTO</td>
<td>Long Term Orientation Index</td>
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<tr>
<td>MAS</td>
<td>Masculinity Index</td>
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<tr>
<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for the Economic Co-operation and Development</td>
</tr>
<tr>
<td>OGC</td>
<td>Office of Government Commerce</td>
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<tr>
<td>PAN</td>
<td>Partido Acción Nacional (National Action Party)</td>
</tr>
<tr>
<td>PEMEX</td>
<td>Petróleos Mexicanos (Mexican Petroleum)</td>
</tr>
<tr>
<td>PERT</td>
<td>Project Evaluation and Review Technique</td>
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<td>PM</td>
<td>Project Management</td>
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<tr>
<td>PMBOK</td>
<td>Project Management Body Of Knowledge</td>
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<td>PMI</td>
<td>Project Management Institute</td>
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<tr>
<td>PRI</td>
<td>Partido Revolucionario Institucional (Revolutionary Institutional Party)</td>
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<td>PRINCE</td>
<td>Projects in Controlled Environments</td>
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<td>PRODIGY</td>
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<tr>
<td>PROMPT</td>
<td>Project Resource Organisation Management &amp; Planning Techniques</td>
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<tr>
<td>SENER</td>
<td>Secretaría de Energía (Ministry of Energy)</td>
</tr>
<tr>
<td>SHCP</td>
<td>Secretaría de Hacienda y Crédito Público (Ministry of the Treasury)</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>TV</td>
<td>Television</td>
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<tr>
<td>TWh</td>
<td>Tera Watt per hour</td>
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<td>UAI</td>
<td>Uncertainty Avoidance Index</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
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<tr>
<td>URL</td>
<td>Uniform Resource Locator</td>
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<tr>
<td>USA</td>
<td>United States of America</td>
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<td>WTO</td>
<td>World Trade Organisation</td>
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Chapter 1 Introduction

Over the years, the field of Project Management has evolved from the first projects managed following a methodological approach, to the most complex projects developed nowadays. The only constant is that all of them require people to be carried out.

In the era of globalisation, the boundaries between countries are becoming negligible in many respects: for business, travel, shopping and communication. Interactions between countries at all levels take place much more often facilitated by the development of transportation and information technologies. In the energy industry, the recent business trend towards globalisation is inexorable and is leading to increased cultural diversity within global energy projects. Project owners and managers are enjoying the benefits of globalisation. For example, they can purchase materials, technology and knowledge from all over the world, sometimes delivered almost instantly. On the other hand, project managers in global projects are now confronted with the difficulty of coordination among sponsors, financiers, developers, planners, consultants, designers, project team members and other stakeholders who come from different countries; therefore, facing coordination challenges are which are frequently cultural.

1.1 Introduction

The location of Mexico as a bridge between highly industrialised North America and the less developed countries of Latin America (Taylor, 1996; Kessler, 1999; Egri et al., 2000; Fiess, 2007), as well as its close economic ties with Europe, provides an excellent field in which to study project management. As economic reforms are being undertaken, several economic sectors in Mexico are opening up to foreign investment and along with this investment come new practices to carry out projects (Lehoucq et al., 2004; Secretaría de Hacienda y Crédito Público (SHCP), 2004). PEMEX and CFE have estimated that the average size of the projects where foreign investment is expected is $50 million USD (Secretaría de Hacienda y Crédito Público (SHCP), 2004), covering projects in the oil exploration and extraction, as well as energy generation.

Amongst other things, this research attempts to explain what cultural factors impact project management when multinational companies working along with Mexican governmental entities undertake projects in Mexico. The research also explores the developed theories of project management, culture and project management culture.
Adapting project management to the changing economic environment involves setting a strong basis with regard to the strategy dictating the direction of the organisation and the strategic management of projects. Contingency theory (Shenhar & Dvir, 1996; Shenhar, 2001b; Shenhar, 2001a; Shenhar & Dvir, 2005) offers an approach to link organisational structures with the tasks needed to fulfil organisational goals and provides the means to identify the variables impacting the organisational structure and environment surrounding any project being undertaken. This approach was derived as an answer for the question related to which organisational measures are the best for project effectiveness and successful decision making (Shenhar & Dvir, 1996; Shenhar, 2001b). Constantly changing environments (such as sectors subject to political and economic reforms) require open and flexible organisation types which are linked to managerial styles and project management methodologies followed within organisations (Dvir et al., 2006).

Over time, a large number of variables have shown their influence on organisational performance and they have been used to describe the effectiveness in decision-making procedures and hence, on organisational effectiveness, which in turn impact the organisational systems, structures, processes, people and the environment surrounding it (Tidd, 1993; Tidd et al., 2001).

Despite the critical importance of project completion timeliness, project management practices in place today remain inadequate for addressing the persistent problem of delays in project completion. A major reason of the causes impacting completion is the uncertainty to which most, if not all, projects are inherently subjected (Goldratt, 1997). This uncertainty is present in many places including the estimates for activity durations, the occurrence of unplanned and unforeseen events and the availability of critical resources. Tools such as Gantt charts and/or network diagrams such as those provided by the Project Evaluation and Review Technique (PERT) or the Critical Path Method (CPM) may be used by managers in planning, scheduling and controlling their projects. However, the limitation of these tools resides in their ability to help managers quantify project completion risk; consequently, large and highly important projects can end up finishing later than originally planned and project stakeholders including politicians, project managers and project customers, may be unpleasantly surprised when this happens due to the consumption of extra resources.
Project management as a field of study encompasses many activities undertaken in both large and small organisations and nowadays the trend points to an increase in the use of projects as a way of organising work and as the preferred way of operating. People are brought together to achieve a goal and then disbanded to move on to the next task, often relying on an increased use of automated processes and their supporting systems which makes the need for layers of managers and supervisors of line staff, carrying out day-to-day tasks, unnecessary. Nevertheless, this has not occurred overnight: there is a long history of the development of projects and their management and this history can be traced back over hundreds of years. During the 20th century, the project organisation reached a high degree of sophistication, especially in task-oriented aspects. However, in the last few years, there has been an increasing awareness of the need to further develop management theory and techniques concerned with those that undertake these tasks: people.

Projects involving the use of sophisticated technology have an unenviable reputation for not delivering their outcomes on time, within budget or working as they should. The Standish Group estimates that approximately 31% of projects involving high technology are cancelled before completion and that 52% are completed over budget and that 90% of these projects fail to meet their goals to a certain extent (Whittaker, 1999). If this “success” rate were reflected in projects such as the construction of buildings, the evidence would be visible everywhere. Despite advances in project management techniques, and the availability of support tools for project managers, undertaking the development of new projects remains a very risky proposition.

Before proceeding any further, it is important to establish the reason why this study was carried out between the United Kingdom and Mexico. Although project management has long been established in industrial sectors all over the world, its importance in the United Kingdom resides in the fact that several project management methodologies have been developed in this country, either by governmental organisations, academic institutions or private companies. Also, the availability of data regarding project management in the United Kingdom make a clear starting point for this research: Project management in the United Kingdom is a well established profession, able to be measured and underpinned by several research journals, enquiries and professional institutes. On the other hand, project management in Mexico, although present, is not as widely supported as it is in the United Kingdom and access to data regarding this field
is, at best, difficult; presenting an exciting field in which to conduct new academic research. Although project management is a well-established discipline in the United States, the researcher had the opportunity of using the United Kingdom as the base for the research after obtaining a scholarship for doctoral research. Finally, although project management methodologies and practices are well established in the United States, the United Kingdom offered better opportunities to conduct research due to the close links between companies and academic entities.

1.2 Research outline

This section provides an overview of the principal features of this study, including the research objectives. Although these elements of the study will be discussed in detail in further chapters of this thesis, their introduction is important as they provide a link between the rationale described in section 1.1 and the elements presented later in this Chapter.

The central feature of this research is to determine and assess the factors of Mexican culture impacting projects carried out by multi-national companies working along with governmental entities in Mexico by comparing them to those in the United Kingdom. This study attempts to measure the impact of Mexican culture in projects carried out between governmental organisations in the oil extraction and power generation sectors in Mexico and private organisations working along with these two organisations. The two organisations central to this study are Petróleos Mexicanos (PEMEX) and Comisión Federal de Electricidad (CFE). The aim of this study was achieved by attaining the following objectives:

a) To examine the role of Mexican culture as a key factor when managing projects. This is to achieve a better understanding of how national, regional and organisational culture impact project management and team working.

b) To identify the extent to which the cultural factor could prove to be a competitive advantage for a multi-national organisation working along with any Mexican Governmental entity. This will aid the understanding of how a team in such a multicultural-background project can give an organisation a competitive advantage and help a project to be completed within schedule and within budget.
c) To identify the nature of the best practices when managing multi-cultural teams/projects. If successful, the objective is to create an “achievement list” that will help organisations to verify if they are managing their projects/teams using the best practices available.

However, to achieve these objectives, this study presents a thorough review of the elements surrounding projects and the issues which determine whether a project achieves success.

1.3 Project Success and Failure

Research into project success and failure has followed many routes, amongst them identifying project risks (Couillard, 1995; Williams, 1997; Jiang et al., 1998; Raz & Michael, 2001; Jiang et al., 2002), criteria for success (Gray, 2001; Aladwani, 2002; Crawford & Bryce, 2003; Gällstedt, 2003), project management competence (Gaddis, 1959; Brunetto & Farr-Wharton, 2003; Czuchry & Yasin, 2003; Mäkilouko, 2004; Crawford, 2005a), organisational process issues (O'Neill & Sohal, 1999) and social constructs (Malhotra & Grover, 1998; Arizpe, 2005; Bititci et al., 2006). This research can be categorised into three broad approaches: rationalist (a search for cause and effect), process (socio-technical interaction) and social (interpretation and sense-making) (Fincham, 2002). An associated research area is the definition and perceptions of failure (Wateridge, 1998; Söderlund, 2004b). In the particular context of this thesis, the research is rationalist as it finds the cause and effect of the relationships between projects and project team members in projects carried out between public and private organisations in Mexico. It is process-based as it analyses and measures the interaction between project teams and projects, and team members skills, abilities and perception of the job they carry out. Finally, it is social as it interprets the interaction between team members and the organisations and projects where they work as an element based on their shared culture, values and perceptions.

Much of the aforementioned research has focused on the technical aspects of projects and their management: i.e. team composition, planning, budgeting, management support structures and task difficulty. However, there is a growing body of research which considers the social and organisational aspects of a project to be as important as the technical aspects. Substantial literature exists in the social and management sciences reporting theories and research that can be applied to the project context and, following
this line, project management is conceived as primarily a social process, which involves people engaged in a process of facilitating change to their environment (Cleland, 1996; Loo, 1996; Jaffe & Scott, 1998; Lipnack & Stamps, 2000; Mead, 2001; Farr-Wharton, 2003; Fisher & Härtel, 2003; Appelbaum & Steed, 2005).

While there is a substantive body of knowledge addressing why projects in general have failed, most of this research is focused on seeking explanations of cause and effect based on organisational structures and managerial practices following the rationalist approach. However, there is a lack of models and theories providing guidance as to how projects should be organised to include cultural and organisational aspects. The result is a body of knowledge providing some insights into the general factors that impact on project success or failure but little in the way of describing how specific projects should be managed to take into account their individual peculiarities and how to deal with problems inherent in the cultural framework within which projects operate.

Increasingly, the response to the high rate of project failures involving technology has been to emphasise and strengthen formal project management practices (Ives, 2005; Javidan et al., 2006a; Kolltveit et al., 2007). These practices have been institutionalised by the establishment of professional organisations, official journals, standards, training and certifications which has led to those who systematically perform project management being identified as part of a developing profession (Wang, 2001), although some have questioned its overall acceptance and legitimacy (Urli & Urli, 2000; Crawford et al., 2006). However, in 2007 membership numbers in the Project Management Institute (PMI) are reported to exceed 150,000 members (PMI, 2005) and PMI certification has become a common requirement for those employed as project managers in the United States.

Complex projects involve numerous sub-tasks with specific requirements, deliverables, capability demonstrations and delivery dates and when practitioners follow the Project Management Body Of Knowledge (PMBOK) guidelines, the projects also include significant documentation, specific procedures and well-defined processes to coordinate and communicate the activities being undertaken. Therefore, with processes so structured and formal, what are the reasons leading projects to fail at such an alarming rate and so often late in the project life cycle?
Numerous scholars and consultants have lingered on the reasons for project failure and the most frequently cited reason is project escalation, where organisations remain committed to a failing course of action although little hope remains for its success (Keil, 1995; Keil & Robey, 1999; Montealegre & Keil, 2000; Keil & Robey, 2001; Smith et al., 2001). However, many other causes have been claimed. Whittaker (1999) surveyed 1,450 leading public and private institutions in Canada about failure in IT projects. The three most common reasons given were poor project planning, weak business cases and lack of top management involvement and support. Although the former were the most mentioned reasons, the answers also included schedule and budget overruns, unproven technology, poor estimates and the inability of the external stakeholders to meet their commitments (Crawford, 2005a). Similarly, Clarke (1999) suggests that projects fail because organisations do not properly address the needs of the users or because the scope of the project is inadequately defined. Pinto & Kharbanda (1996) take a broader perspective in identifying what they describe as important contributing actions that promote project failure. However, this research covers twelve success or failure factors that should be taken into account when managing projects: review of the project, involvement and commitment from all stakeholders, use of project management methodologies, use of communication and information systems, team based approach, project orientation and control, training, risk management, change control process, scope and prioritisation, awareness of the people culture factor and the use of rewards and metrics.

While much of the heuristic advice is too abstract to provide specific guidance, it has often implicated management practices for failing to adequately control the project activities throughout the project. For example, Söderlund (2004a) and Uzuegbunam (2005) argue that senior leadership in organisations is to blame for project failure as it often fails to respect uncertainty, under-nourishes initiatives, fails to anticipate short-term disruptions, fails to value invisible progress and disregards the stability of technology and, consequently, significant emphasis has been placed on management strategies to avoid project failures which have frequently been described in terms of risk management (Royer, 2000). Risk is the general category for identified concerns that through experience or insight may lead to project failure. Therefore, risk management has been established in the PMBOK as a structured practice to be conducted throughout a formal project (Dooley et al., 2005; Winch, 2006).
Risk management provides a systematic and often statistical approach to estimating resource consumption and functional performance along with planning activities to neutralise the risks. However, the risk management approach has a number of limitations (Cowie, 2003). First, risks have to be recognised and to be addressed because unknown or unexpected risks may affect the project at any moment during its development or implementation. Second, when risks are recognised, there still may be a high degree of uncertainty that makes them difficult to tackle. In general, risks are addressed by implementing either a mitigation plan or a contingency plan (Royer, 2000). Either of these requires additional resources and introduces their own complexity and risk to the project. Finally, risks may be hidden in unrecognised assumptions about the project and its stakeholders or within the understanding that these people have of the project. These are difficult to surface because they are embedded in the culture of the organisation (Schein, 1992; Schein, 1996). However, certain risks seem to be universal. In a study of project managers from three different countries (Hong Kong, Finland, U.S.), there was a strong consensus for risk factors in IT projects (Huchzermeier & Loch, 2001). Researchers noted that only one of these factors involved technology and it was not particularly prominent when compared to the other risks. The study participants generally (who were project managers and team members in IT projects) felt that technical problems were controllable and could be accounted for in a project plan. However, the non-technical issues were the predominant risks because they were not perceived to be adequately controllable.

The common element in all of these “reasons” for project failure is that potentially problematic issues must first be known and recognised as significant before the management can address them. This assumes that project information has the same meaning amongst participants and that this meaning becomes available when the project members discover it and communicate it. However, this is not always the case. Some have argued that evidence of a failing project frequently exists at the lower ranks of a project but frequently does not move up the chain of command (Keil & Robey, 2001) and a number of reasons have been blamed for this. First, a “mum effect” has been described where individuals demonstrate a reluctance to share bad news on projects primarily because of the risk of feared consequences (Smith et al., 2001). The opposite of the “mum effect” is the act of “whistle blowing”. Even though this idea of reporting the perceived wrongdoings of others might be officially rewarded, it is frequently not seen as legitimate activity in most organisations (Keil & Robey, 1999; Smith et al.,
2001); therefore, individuals are reluctant to share the known misdeeds of others for fear of being punished or ostracised (Turner, 2006). A third reported barrier in communicating negative project status has been described as the “deaf effect”. “By remaining deaf in the presence of trouble, actors may hope to avoid dealing with difficult problems. They may also remain deaf to disassociate themselves from a failing endeavour.” (Keil & Robey, 1999) While this is regularly attributed to managers, other stakeholders may selectively disregard specific information affecting their own individual or group interests. Finally, project team members may deliberately mislead the leadership regarding project status (Crawford, 2000b; Wang, 2001; Müller, 2003). This may be described as a misinforming effect and is perceived to occur for several reasons including lack of effort, timing, social niceties, self-defence, incompetence and politicking. Eventually, information about failing projects can no longer be hidden by these techniques and becomes a visible source of open conflict (Monteagle & Keil, 2000) which then again can hinder the progress of the project. During this research, it was discovered that as Keil & Robey (1999) noted, team members and project managers who responded to the questionnaires and the interviews commented that they experience communication barriers, especially the “deaf effect”.

The existence of conflicts in highly complex and ambiguous situations is explained by the theory of sense-making (Osland & Bird, 2000; Fincham, 2002; Fisher & HärTEL, 2003), which suggests that individuals actively seek to reduce uncertainty by developing reasonable explanations for their experiences (Slabbert, 2004; Dooley et al., 2005; Heindl & Biffl, 2005). High technology projects are expected to be an especially rich source of sense-making because the complexity of technological development has been directly equated with ambiguity in the form of organisational uncertainty (Fisher & HärTEL, 2003). For Fincham (2002), uncertainty can be seen as something that identifies several possible or plausible interpretations and therefore can be subject to misunderstandings which are often complex and obscure. This is expected to occur throughout all the stages of any project as each stage represents attempts to accomplish novel solutions to problems subject to time, cost, quality and performance constraints which, with the explosion of globalisation, have been exposed to a more important element: culture.
1.4 Projects and Culture

A review of the literature reveals that there is no universally recognised definition of “culture” (Gupta et al., 2002; Javidan et al., 2006b; Waldman et al., 2006) nor is it easy to define or measure even though understanding national cultures is of central importance for international work and research (Myers & Tan, 2002; Swift & Lawrence, 2003; Javidan et al., 2006b; Jack & Lorbiecki, 2007). In the literature and research, there are multiple attempts to describe culture. For example, according to Hofstede (1997) culture is something that is learned, not inherited – it comes from the social environment, not from genes and much of this is acquired in early childhood. Over time the concept of culture has evolved to be described as a complex web of norms, values, assumptions, attitudes and beliefs that characterise any given group (Metcalf et al., 2006; Gelfand et al., 2007).

For other researchers, such as Geertz (1993), culture represents “a set of control mechanisms for the governing of behaviour” and furthermore, others see culture as the “collective programming of the mind which distinguishes the members of one human group from another” (Hofstede, 1997).” In general, we see people as being from “different cultures if their ways of life as a group differ significantly, one from the other” (Adler, 2000) and in general, culture refers to the way of life of any specific group of people (Fisher & Härtel, 2003; Javidan et al., 2006a). The definition of culture that is used in this study is derived from the attempts of two anthropologists to make culture operational by specifying both what it is and what it influences: “Culture is a shared set of commonly held general beliefs and values which influences people’s assumptions, perceptions and behaviour.” (Kluckhohn & Strodtbeck, 1961) This definition has been chosen because it is central to this study and helps us to understand cultural differences (Hall & Hall, 1990; Granell, 2000; Bhaskaran & Sukumaran, 2007) by allowing the breakdown of culture into smaller and easier to understand concepts.

Cultural differences may be examined by variations across geographic regions, ethnicity, organisations, professions, religion, gender, generation and social class (Myers & Tan, 2002; Pressey & Selassie, 2003; Singh, 2006). The beliefs, values and practices that are shared by the majority of people belonging to any nation are commonly referred to as “national” culture and these elements create patterns of thinking, feelings and behaviours within every person, which have been learned throughout their lifetime. These patterns are shown in the way people behave in any
given social setting, whether it is in the family or in the job, and are reinforced by national laws and governmental policies (Brunetto & Farr-Wharton, 2003; Arellano-Gault & Vera-Cortés, 2005; Smith, 2005; Uzuegbunam, 2005).

Building conceptual bridges between cultures will remain a key competence for cross-cultural project management (Hampden-Turner & Trompenaars, 1993; Hampden-Turner & Trompenaars, 2000; Evaristo, 2003; Muriithi & Crawford, 2003). Nowadays, due to globalisation and international expansion, there is an integration of organisations across and beyond business and national borders, demanding that the modern project manager be able to operate multi-culturally (Hofstede, 1998), whether it is within the project or the organisation. Project managers derive their main purpose from the people they manage: culturally, they are the followers of the people they lead and their effectiveness depends on their understanding of the latter (Hofstede, 1997).

There is sufficient empirical evidence suggesting that the values, norms and beliefs of people differ according to the national culture and this research concluded that there are variations across the globe in the way people communicate, how they interact with people, how they engage in relationships and demonstrate trust, what they value, how they perform their work, what their concept of control is and how they perceive time, power, gender and status (Hall & Hall, 1990; Hofstede, 1997; Trompenaars & Hampden-Turner, 1997; Adler, 2000; Miron et al., 2004; Pagell et al., 2005; Craig & Douglas, 2006). Therefore, the way project managers behave is inextricably linked to the values and customs of the group of people to which they belong and that they lead (Athanassiou et al., 2002; House, 2004; Perlitz & Seger, 2004; Romero, 2004; Zahra et al., 2004; Gelfand et al., 2007).

For example, after studying 22 European countries, Brodbeck et al. (2000) concluded that only a few concepts, such as leadership, performance and non-verbal behaviours, are culturally endorsed and others vary by national culture; other researchers have verified that some characteristics are universally endorsed and others are culturally bound (House et al., 1999; House, 2004). Moreover, moving from one culture or country to another, systematic differences can be seen in what is regarded as important for effective project management (Shenhar & Dvir, 1996; Goldsmith, 1997; Crawford, 1999; Crawford & Costello, 2000; Norrie & Walker, 2004; Crawford, 2005a; Dooley et al., 2005). An important source of differences in project management among countries
is a consequence of these different explicit and implicit theories about the project-
project manager relationships (Brunetto & Farr-Wharton, 2003; Czuchry & Yasin,
2003; Crawford, 2005b; Dooley et al., 2005). Examples of these differences vary from
the depth of involvement of senior management in the project to the personal
relationships between team members and project managers.

Cultural similarities and differences are of particular concern for international
companies conducting operations in global markets. The idea of creating cross-cultural
diversity within the projects carried out within organisations has been proposed by
several prominent researchers (Hofstede, 1980a; Cartwright & Gale, 1995; Gale &
Cartwright, 1995; Shenhar, 2001b; Cooke-Davies & Arzymanow, 2003; Javidan et al.,
2006b). One important approach to project management in a cross-cultural context
concerns the role of the culture of the project manager as a success factor (Pettersen,
1991b; Shenhar & Dvir, 1996; Crawford & Bryce, 2003) which this research aims to
address. This point arises as cross-cultural diversity gains more importance as projects
become more global and people from different countries/cultures interact within
projects.

In cross-cultural situations, projects may be managed using different approaches and as
result, the meaning of the behaviour of a project manager may be ambiguous, since the
interpretations made by followers may not match the original intention of the project
manager as it has been clouded by the culture of the other team members or
stakeholders (Chong & Park, 2003).

The focus of this work is in the domain of global energy projects in the United
Kingdom and Mexico. This is an ideal environment in which to compare cross-cultural
projects management practices. Nowadays, participants in global energy projects work
for parent companies with varying corporate standards and management styles. The
headquarters of the companies are located in different countries and therefore project
participants must cope with a variety of languages, business customs and cultures. In
other words, international project management teams have a great deal of internal
complexity in cultures, professions, business customs and management styles (Morris,
2003; Lloyd & Simpson, 2005; Crawford et al., 2006). Additionally, projects are subject
to varying political, economic, institutional and physical environments due to
differences in geographical location (Nidiffer & Dolan, 2005; Lee et al., 2007).
Moreover, energy projects often must be completed under great time pressure, not only because the projects are highly customised to produce a one-of-a-kind outcome but because of the size of budgets, the strategic importance of the projects or the political elements attached to the projects. In many cases, the project groups also have no shared past experience of working together, teams are assembled project-by-project and sometimes the most successful project managers and team members are scattered after a successful project in order to “spread” the knowledge amongst other teams and projects (Evaristo, 2003; Lloyd & Simpson, 2005; Dvir et al., 2006).

Much has been written separately about “project management” and “national culture”; however, too little is still known about global project management and the development of intercultural competencies (Shore & Cross, 2005; Young & Javalgi, 2007). Despite the great quantity of empirical project management studies (Shenhar, 2001b; Hodgson, 2002; Kloppenborg & Opfer, 2002; Pinto, 2002; Söderlund, 2004a; Crawford, 2005b; Shenhar & Dvir, 2005; Grant & Pennypacker, 2006), relatively few have been concerned with the impact of cultural influences on project management. Much of the writing on cross-cultural differences is anecdotal or conceptual (Locatelli & West, 1996; Perlitz & Seger, 2004) and relatively few empirical studies have investigated the relationship between culture and project management (Wang, 2001; Shore & Cross, 2005) and this lack of research has created problems for organisations from some countries operating globally because it requires them to conduct their operations without guidance from any management research (Appelbaum et al., 2004; Turner & Müller, 2005) and, despite this need, there is no cross-cultural theory that is empirically based (House, 2004; Javidan et al., 2006a). This work created cross-cultural theory based on empirical data gathered by applying questionnaires and interviewing key project managers.

Over the past decade, managers and researchers have increasingly recognised the importance of “organisational culture” as an influence and success creator within businesses (Adler, 2000). Unfortunately, this has tended to limit rather than enhance our knowledge of national cultures (Sweeney & Hardaker, 1994; Veiga et al., 2000; Pagani, 2003; Lok & Crawford, 2004); this research is seeking to address this by specifically comparing those of Mexico and the United Kingdom. In essence, all of the above will have a major impact on the role of global projects and through raising awareness of these differences it is hoped to increase their effectiveness when projects are being
carried out, whether within governmental organisations (such as Petróleos Mexicanos and the Comisión Federal de Electricidad), private ones, or both.

1.5 Petróleos Mexicanos and the Comisión Federal de Electricidad.

Two of the largest government-controlled organisations in Mexico are Petróleos Mexicanos (PEMEX) and the Comisión Federal de Electricidad (CFE). The former is the company in charge of extracting, refining and selling oil and its derivatives in local and international markets whereas the latter is in charge of the generation of electricity, its transmission and sale. As organisations, PEMEX and the CFE have adopted the view that financial openness will strengthen them and generally encourage organisations from other countries to invest (Barnés-Regueiro et al., 2002; Breceda-Lapeyre, 2002); therefore opening the door for adopting values from other organisations and associated cultures. Encouraging their managers to embrace other cultural values enables support from these organisations, as the management from these two organisations acts on the principle that understanding the differences in the values of people is critical for building effective cross-cultural relationships and therefore, critical for the success of the projects, both financial and operational (Crandall et al., 2005).

Despite the various definitions and the complexities involved with understanding national cultures, one objective of this research is to determine the nature of the relationship between desired success factors and perceived cultural factors and their impact upon project success. This question concerning project management across national boundaries has been particularly salient for PEMEX and CFE managers. For example, during the course of this study, PEMEX project managers asked questions regarding the relationship of integrity and autocracy on leader performance and cultural influences of the unions at work. The focus of the questions was on whether or not performance can ever be hindered by too little autocracy, too much involvement of the unions and how this differs across cultures. Although these questions have not been addressed in literature, this work created the basis for comparing how project managers and team members perceive their relationships and how their own individual cultural perceptions influence the way projects are undertaken in their organisations.

It is important to stress that understanding cultural differences and values, whilst important, is not the sole factor affecting project performance; political, economic, social and organisation-level variables are equally important (Shenkar, 2001).
The present study explores these and other aspects of project culture as both a complex and central issue relating to project success. Thus, the purpose of the present study is to explore project culture issues in more detail and with a more complex model of cultural interactions. To that end, this study adopts an interpretive paradigm that frames project management as a socially constructed environment where individual stakeholders vie for their perspectives to prevail and emphasise the belief that culture and history influence the way reality is perceived by individuals (O’Brien, 2001). As different people have different views and each one tries to hold their point of view, the management of conflict then becomes a critical factor that has the potential to reveal important differences among the participants, highlight underlying expectations and identify sources of power, which may then be a significant indicator of project outcomes.

In summary, this research seeks to develop theory in a cross-cultural context. Implicit project management theory and culture theory provide the theoretical framework. Effective project management is critical for PEMEX and CFE as preparations are made for receiving major investments from North American, European and Asian organisations. Diversity among employees will create multiple views of effective project management (Turner & Müller, 2005), as will cultural variability (Bátiz-Lazo & Wood, 2003; Jack & Lorbiecki, 2007) and therefore, these differences can hinder project management effectiveness if inappropriately managed (Brodbeck et al., 2000; Gupta et al., 2002); project effectiveness and success are likely to be attained by those who understand and adjust to such differences (Norrie & Walker, 2004). The aim of this research is to present success factors in projects in the energy generation and oil extraction sectors, which can act as measures of their level of congruence, help increase their self-awareness and cross-cultural awareness and assist the organisation to develop successful projects.

1.6 Project management in action

The constructionist perspective (Cockburn, 2003; Williams, 2003) adopted in this study provides the opportunity to explore how individuals uniquely and collectively make sense of their experiences in projects. Competing narratives among stakeholders may reflect the meanings developed from these experiences as the participants become committed to their interpretations of the project situation. Therefore, access to these alternative stories can become an important source of information since they may
represent the rationale for decisions and behaviours leading to eventual project failure. Thus, the definition of project success developed in the current study evolves from a constructionist paradigm to suggest that projects may be viewed as incongruent as the actors perceive them. That is, the actors come into conflict as they develop incompatible meanings for important project issues. Three important considerations emerge from this approach. First, these alternate meanings may contain valuable information that could be used to identify problems earlier in the project than might otherwise occur, resulting in more successful projects. Second, if the project is struck by an incongruent system of meanings which becomes enduring, it may exercise a constitutive force in the vein of a self-fulfilling forecast (Crawford, 2000b; Wang, 2001). In that way, conflicting beliefs about the trajectory of the project may result in discordant actions that effectively diffuse the project efforts. Prior research has suggested that when members perceive a low likelihood of success on a project, they may increasingly take risks to improve their chances of success (Cowie, 2003; Winch, 2006) and sometimes these risks are inherently attached to cultural issues, such as a more open willingness to take risks in American projects when compared to Japanese organisations (Chen, 2004; Zweikael et al., 2005). If these activities and risks are outside of the existing project plan they may detract from official tasks and create additional chances for project failure. Finally, ongoing conflict may go unresolved throughout the project, hindering the ability to reach consensus and, consequently, preventing important actions from occurring at appropriate times which again, at times, can be seen as a cultural trait.

The significance of this study is that it introduces a more complex appreciation of communication as a framework for understanding project conflict and explores the ways that culture may be a precursor to successful project outcomes. The current study explores how success in projects occurs as the existence of multiple “facts” leading to project success and how each one makes sense to the various stakeholders depending on their own culture. As project resources are limited and individuals bring diverse needs and perspectives to their projects, such differences should be expected to result in divergences about important project decisions and activities which therefore might impact the success of the project. In this way, as success is achieved through communication, it is affected by decisions and activities and it may become significantly dependent on project outcomes always relying on the culture of the organisation, the people working on the project and the culture of the environment where the project is being carried out. This contrasts with most existing research, where
culture is viewed as a characteristic of people which has to be managed rather than harnessed into multiple sources of success. This last statement is key to this research as in previous studies, culture is not viewed as a driving force which helps projects to be successfully closed but is merely seen as an element of the people working in the project which, as any other element of the project, has to be dealt with and whose impact has to be minimised in order to complete the project (Estiène, 1997; Swe & Kleiner, 1998; Zweikael et al., 2005). Project managers and their staff are presumed to have (or even be selected because of) different traits and, consequently, sensible project managers are instructed to surround themselves with staff that can strengthen their weak points (Crawford, 1999; Crawford & Bryce, 2003; Crawford, 2005a) rather than have team members who can challenge their views and create conflict (Dooley et al., 2005; Heindl & Biffl, 2005). However, such a belief that conflict is trait-driven and simply the consequence of a personality mismatch may serve to neutralise any motivation to understand the communicative nature of the conflict and, thus, forfeit the benefits that might be derived from its management. In addition, it fails to comprehend the positive outcomes that may emerge when conflict is framed as the source of important information to be managed.

In sum, while practitioners, consultants and academicians have provided numerous behavioural heuristics and institutionalised “best practices” of project management into formal industry standards, an alarming number of projects continue to fail. These failed projects appear to be managed under close scrutiny and under highly regulated processes. Yet, unforeseen problems still occur and, when discovered, they often are recognised late in the project when few corrective actions remain viable. The current research effort addresses this problem by exploring how the culture of the individuals creates different systems of meaning for their project experiences and how those cultural differences may become meaningful by leading a project to success. Understanding culture might help conflicts to be overcome as members begin to act in justification of their beliefs (Crawford & Costello, 2000; Fincham, 2002), potentially affecting the outcomes of their projects. As such, culture is posited to reveal important underlying issues in projects and possibly contribute a constitutive force in their outcomes. To this end, this research intends to demonstrate how culture can be recast as an opportunity to recognise and manage alternate meanings for important project issues and help identify potential problems that may lead to project failure within multicultural environments by showing how different team members have a different perception of
the project elements, such as the processes composing the project, the people involved in the project, the environment where the project is carried out, the structures underpinning the project and the systems operating within the project.

First, in Chapter 2 this study presents the concepts important for the definition of project management and its component elements, helping to understand project management by establishing a definition and an explanation of what a project is, which is then followed by the explanation of project management, the project life-cycle and the stages of project management. This Chapter then continues with the definition of project management methodologies leading definition of what are the project success and failure factors.

Chapter 3 presents the evolution of project management, from its origins in the construction and defence industries to the latest developments in research. This leads to the discussion of the development of research in the project management field, its structure and how project management methodologies have evolved and become aligned with organisational goals and benefits providing a competitive advantage for the organisation. Furthermore, this Chapter presents how distributed project management, its elements and its development have developed in the globalised economy and the impact of the culture of the people composing teams in geographically disperse locations. Finally, it presents how software applications have been developed to ensure a smoother management of projects following the areas of the Project Management Body of Knowledge.

Chapter 4 presents an assessment of relevant literature concerning culture, national culture and organisational culture, including the cultures of Mexico and the United Kingdom. It provides several definitions of culture from diverse fields of research, showing how this concept has evolved throughout time and how the background of the researchers providing these definitions impacts on the way culture is described and how it is divided into several levels. The description of national culture, its determinants and the models defining its dimensions is presented in this Chapter. Additionally, a review of the most accepted models addressing national culture, developed by well known researchers, provides a set of dimensions which help to establish the basis for a comparison between Mexico and the United Kingdom. Following these models, the differences and similarities between the cultures of Mexico and the United Kingdom are
presented and discussed. This Chapter continues by discussing organisational culture, its importance and its elements providing the basis for understanding how its characteristics are recognised and why organisational culture is important for this particular research.

Chapter 5 presents an assessment of the relevant literature regarding project management culture. The importance of project management culture and its elements are also described, leading to a review of the Mexican energy sector, specifically Petróleos Mexicanos (Pemex) and Comisión Federal de Electricidad (CFE), from their creation to their current operations in Mexico as well as their setting within the globalised market and the intended opening of their markets in Mexico to foreign investment. Finally, this Chapter presents the cultural foundation elements which help the organisation to understand, develop and implement a project management culture.

In Chapter 6, the theoretical framework surrounding the rationale for the methodology used in the research is presented, followed by limitations and shortcomings in previous research such as lack of integrating theory and methodological problems. Also, presented is the rationale for the specific techniques used in this study. This Chapter continues by presenting the research objectives for this study and the description of research questions developed for undertaking the research. Later on, the research design is described, covering the research methods and the data gathering techniques such as observation, surveys and interviews used during this study. Finally, the research process is explained in detail encompassing the particulars of the study, the material collected, the details of the participants and the sample including its design, the surveys application and the results verification.

Chapter 7 shows the statistical indicators validating the elements comprising the questionnaire and the data gathered through its use. It continues with the description of the demographic data of the respondents of the questionnaire. Later on, this Chapter shows the data analysis process starting with the pilot test of the elements comprising a project by using a questionnaire applied to a group in the United Kingdom. The purpose of this test was to validate the questionnaire with the final aim of addressing the following statement: “To identify the nature of the best practices when managing multi-cultural teams and projects”. This Chapter then continues with a description of the data gathered with the main questionnaire, subdivided on each one of the five elements
comprising the questionnaire, compared according to the country of residence of the respondents. Finally, this Chapter presents the statistical description of the data gathered by the main questionnaire, comparing the values from the responses provided by individuals in Mexico with those of the group located in the United Kingdom, aggregated into each one of the five sections of the questionnaire (processes in the project, people in the project, project structures, project systems and project environment).

In Chapter 8, the characteristics of the Spearman’s rank correlation coefficient, the method followed to calculate it and the significance of its values are presented through an analysis of the data gathered. Later on, this Chapter continues by presenting a description of the data analysed after the application of the Spearman’s rank correlation. It tests the data gathered with the main questionnaire, subdivided into each one of the five elements comprising the questionnaire, is compared according to the country of residence of the respondents and grouped by each one of the two sectors focused in this research, namely the oil and power generation sectors. Subsequently, the success factors impacting projects both positively and negatively are presented followed by the information gathered after the application of interviews with senior project managers in Mexico and the United Kingdom to validate the findings of the previous analysis.

Chapter 9 presents the discussion of the information gathered during the survey and the interviews. This discussion highlights the key issues raised during the course of this study; it is outlined following the divisions presented in the survey and compares these issues with the theories and information present in the literature reviewed. The focus of these highlights leads to the summary of the success factors in projects derived from the analysis of the information gathered in this study which are regarded as key success factors when managing projects in multicultural environments.

Finally, Chapter 10 presents the contributions, conclusions, limitations and recommendations derived from this study. In this Chapter, the contribution of the study to general knowledge is addressed, a discussion of the extent to which the objectives of the research have been met. The Chapter summarises the limitations of the present study and makes recommendations for future research.
Chapter 2  Project Management Elements

2.1 Introduction

In order to help clarifying the project management concepts important for this research, definitions are provided below. These are central to the definition of project management and its component elements. The first step to understanding project management is to establish a definition and an explanation of what a project is, which is presented in section 2.2. Section 2.3 describes the concept of project management, along with its elements, patterns and styles, followed by the project life-cycle and the stages of project management.

After projects and project management have been explained, section 2.4 presents a discussion of what the characteristics of a project manager are along with the importance of the project manager in any organisation. Finally, section 2.5 discusses project success and failure factors.

2.2 Projects

Projects can be defined in several ways. The definition provided by the Oxford English Dictionary (2004) specifies that a project is “something projected or proposed for execution; a plan, scheme, purpose; a proposal.”

Authors such as Butler (1973), Gaddis (1959), Lundin (1990), Morris & Hough (1987) and Pinto & Prescott (1988) define a project as a unique, once in a life-time task with a pre-determined date of delivery subject to one or several performance goals and composed of a number of complex and interdependent activities.

The Project Management Institute (1996) defines a project as “a temporary endeavour undertaken to create a unique product or service.” Ljung (1999) argues that temporary nature, specified end-result and non-recurrent character are characteristics which should be present in order to classify an assignment as a project.

From this definition and following the research of Baguley (1999), Kerzner (1997), Nicholas (1997) and Turner (1999) the following definition of a project has been developed. It is a sequence of interconnected events with a clearly defined start and end, which is an exclusive scale of work pointing towards the generation of a well-defined
outcome. Such work is carried out in an organisation with the purpose of generating valuable change. A project carries considerable uncertainty and risk, which requires the organisation to be aware of the nature of the project and therefore, subjects the project to constraints of time, cost and quality of performance.

Almost every human activity that involves carrying out non-repetitive tasks can be a project. Under this definition of project, every human being on earth is a project manager. The challenge is to successfully complete projects, which range from involving one or two people through a complex mix of people, tasks, organisations and environments.

The art of planning for the future has been always interlaced with human history. Since the building of the Pyramids in Giza, where records were found showing procurement plans of food for the slaves working on the project, to the latest and more expensive projects, such as the building of the Scottish Parliament and the International Space Station, all plans must have a starting date, an end date and some idea of the resources that will be needed in the life of the project (Kliem et al., 1997).

A project is a set of processes which enable the organisation to focus its resources and abilities towards desired outcomes and therefore, allowing the organisation to have an immediate response to the needs of its customers (Baguley, 1999).

Martin & Tate (1998) argue that there are only two possible ways to get the work done in organisations: it is either done through business processes or projects. Business processes are well-established and repetitive structures transforming inputs into repetitive outputs and are better known as on-going operations (Kerzner, 2003). On the other hand, projects are structures set up on a temporary basis with the sole purpose of transforming various inputs into a unique output. A project starts up, takes all the resources it needs, transforms it into what the project was commissioned to produce and once the outcome is achieved, the project shuts down.

Kerzner (2003) defines four project categories:

- Individual projects, short in duration and usually assigned to an individual.
- Staff projects, usually achieved by an organisational unit.
• Special projects, which require the assignment of a manager or primary function on temporary basis to other individuals or units

• Matrix or aggregate projects, requiring the input from numerous functional units and usually using vast amounts of resources.

Projects also differ taking into account the approach used to tackle them. Projects can be “hard” with tangible results, such as the ones usually carried out in engineering fields, or they can be “soft” with less-tangible results, as most of the projects undertaken in human resource fields (Cook, 2000).

2.3 Project management

When a plan starts to involve different tasks happening at different times, some of which are dependent on each other, plus resources being required at different times and in different amounts, then a plan will begin to grow exponentially and to become more complicated.

This was the problem that the US Navy was facing when they were developing the Polaris Missile system (Grieves, 2000). There were so many aspects in the project that they had to develop a new technique to cope with it; from this, the Project Evaluation and Review Technique (PERT) was born. This is designed to cope with complex one-time projects and helps managers make detailed plans, define exactly what must be done and make commitments regarding timing and resources. This technique and later developments led to mathematical algorithms that can be used to find the critical path through a series of interconnected tasks.

To take a project to a successful conclusion it is necessary to rely on “Project Management”. Turner (1999) states that the process of project management has to have three dimensions:

• Clear objectives, which describe the scope of the project while keeping it defined within time, cost and quality constraints.

• Clearly defined management processes, composed of planning, organising, implementing and controlling.
• Address all the levels of the organisation from both a tactical and a strategic point of views.

One of the important points of project management is that it not only involves the above-mentioned issues but is also concerned with human attributes such as leadership and motivation. This is taken into a discussion about the tools used to manage a project. Since the introduction of computers into day-to-day life, many tasks performed by humans have been made easier and in the field of project management, computers can provide useful real-time information that project managers can use to make a project run smoothly (Kimmons & Loweree, 1989; Engwall, 2003).

Project management tools can help to control and measure projects; however, they cannot add by themselves the human side of project management, which includes the human characteristics inherent to each individual involved in the project as well as what makes some project managers become successful (Jones, 2003). Project management is a mix of components of control, teamwork, leadership, resources management and planning with the final outcome being a successful project. There is no magic formula to make successful projects; there is hard work and techniques to be applied by skilful project managers. “A project is an endeavour in which human, financial, and material resources are organized in a novel way to undertake a unique scope of work, of given specification, within constraint of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives.” (Turner, 1999)

As in every stage of life, when managing projects, decisions must be made. Of course, good decisions lead us into successful projects but sometimes that is not enough. Project management provides tools and techniques to help define, plan, organise, control and lead a project, achieving both efficiency in the use of resources and effectiveness in customer satisfaction (Kimmons & Loweree, 1989). Summarising, PMBOK (1996) gives the following definition of project management: “it is the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.”
2.3.1 Project management patterns

Kliem et al. (1997) identify four patterns of project management: management by crisis, management by confusion, management by drives and management by efficiency and effectiveness. Each one of these patterns has its own graphic as shown in Figure 2.1.

![Graphs of project management patterns]

Managers managing by crisis (Figure 2.1 a) find themselves reacting: they find a problem and they put all their effort into solving that problem. As soon as they finalise solving that problem, another one comes up and so on. They do not have time to plan and can only react to problems, unable to take the initiative they face a “no-win situation” and subordinates are influenced by the actions of the managers (Risberg, 1997).

Management by confusion (Figure 2.1 b) is analogous to a blindfolded person trying to catch someone. They go walking around in circles, wasting resources and walking over their own steps again and again. Finally, when the project seems to be near to conclusion, they have to go back again because some “oversight” occurs, with the ensuing waste of resources.
Management by drives (Figure 2.1 c) is often described as walking on a valley and suddenly facing a hill. For a long time nothing happens in the project and near to the end, a frantic rush to finishing the project occurs. Employees work long hours, the costs escalate and the quality of the project is compromised because of the rush to finish and fulfil the schedule at any cost (Cleland & King, 1988).

Projects managed by efficiency and effectiveness (Figure 2.1 d) are well-managed projects. Project managers following this approach have full control of the project and are aware of all the issues in it, which allows them to get back in control if they lose control for some reason (Kliem et al., 1997). People working in projects under this management approach know what their priorities are and also know the resources needed to complete the project on time and within budget and this allows a smooth flow of the project (Loo, 1996).

2.3.2 Managerial styles
Along with the pattern of project management, the managerial style used to manage the project is also important (Rees & Porter, 1998). Depending on the way managers cope with the problems while managing, two managerial styles can be identified, namely reactive and proactive. While the management style in managing projects by crisis, confusion and drives is reactive, the management style in managing projects by efficiency and effectiveness is proactive (Czuchry & Yasin, 2003).

Reactive project management has several characteristics, all of them marked by the word reaction. Project managers using this management style are always behind schedule, struggling to reach the objectives and goals of the project (Turner, 1999). These managers are often excitable and impulsive, reacting to unforeseen problems instead of preventing them. Their vision of the project is short-range and because of that, the bigger picture of the project, the one at long-range, is discarded.

On the other hand, proactive project management vision is long-range. As soon as the project manager detects a potential problem, actions to cope with it are taken, even if that problem is not in the near future (Meredith & Mantel, 2000). The project manager determines the direction of the actions to be taken in order to comply with the objectives and goals, always keeping in mind the original budget and schedule and looking for a
total satisfaction of the customers in terms of quality and fulfilment of the original specifications (Turner, 1999; Müller & Turner, 2007).

The proactive style involves planning, organising and controlling projects with a close view, evaluating all the available possibilities before proceeding any further and always keeping in mind the project objectives and goals. Despite keeping a close view of the project and taking the right decisions in a project, problems are a threat in any project and, because of that, project managers must be prepared to cope with them. Sometimes, a contingency plan is a useful tool to cope with these problems. From an outline of a course of action, a new route, extra hours or even a new supply chain, a contingency plan can save the whole project; however, as Rees & Porter (1998) indicate, there is no substitute for competent management.

So, projects can and should be managed carefully, using a project-based and proactive style of management in order to avoid waste and cope with problems before they arise. Turner (1999) describes five functions of project management, each one needing special attention while the project is being carried out (Figure 2.2).

![Diagram of five functions of project-based management](image)

Figure 2.2 Five functions of project-based management (Turner, 1999).

These five functions are the scope of the project, or in other words, what has to be done and what is the expected benefit of the project; it includes the specifications and directions given at the beginning of the project. The other functions are the organisation, involving the people who will do the work and the time, the quality and cost initially
specified at the beginning of the project but over which a close view has to be kept. Authors such as Turner (1999) and Müller & Turner (2007) define time, quality and cost as constraints to the project. Some projects are cost-driven, where keeping the budget within boundaries is the most important thing to do. Others are quality-driven, and quality has to be kept no matter what. Finally, other projects are time-driven, where there is a specific deadline which has to be accomplished and then, to keep it, quality and money are overridden in order to comply with the time. Historically, projects were conceived as a progressing along a linear order according to designated time lines (Davidson & Huot, 1991).

As project managers attempt to manage projects, which can make or break the organisation, they need all the help they can get. Czuchry & Yasin (2003) determine an effective path to successfully manage a project. This path not only illustrates what tools are to be applied to gather appropriate information and how this information can be deployed to help to solve problems and to take decisions within the project but also describes the high level of involvement that top management must have in order to accomplish the project (Rees & Porter, 1998).

Hofstede (1980a; 1997; 1998; 2006) noted that small power-distance cultures, where there is a rather limited vertical distance between senior management and team members, or in other words “flat” organisations (such as those found in the United Kingdom and the United States) emphasise interdependence and less hierarchical organisational structures with a preference for democratic and consultative decision-making styles. On the other hand, large power-distance cultures (such as found in Mexico, Spain and most of the Latin American countries) tend towards dependence within hierarchical organisational structures and directive, autocratic and centralised decision-making styles (Egri et al., 2000). Power-distance culture impacts on the method the organisation has to choose for the project.

The organisational structure of PEMEX and CFE (Appendix A and Appendix B, respectively) is a good example of the validity of the research of Hofstede regarding power distance in Latin countries. In the case of PEMEX, its organisational structure is highly hierarchical where the vast majority of decisions are taken at the upper levels and the lower levels always have to consult with upper level management in order to carry out a particular project or any work idea that they have. Even though PEMEX is sub-
divided into operational areas and corporate services, decision-power still resides at the top of the organisational structure. The organisational structure of CFE is similar to PEMEX, with the main difference being that CFE generates electric power. Both organisations have highly hierarchical organisation charts, with centralised decision-making, low interdependence between departments and a very autocratic outlook.

Apart from the organisational structure, the type of organisation where the project is being carried out is an important factor to take into account (Cockburn, 2003). Traditionally, projects carried out by a governmental organisation require far less accountability than the projects carried out by private-run companies and the outputs are more likely to focus on the process measures (such as schedule controls, checks and budget constraints) rather than real outcomes (Pollitt, 1990) such as the number of units produced, or in the case of PEMEX or CFE, millions of barrels of oil produced or GWh of power generated.

Sometimes organisations hire a consultancy firm to manage their projects. Project management consultants sell their systems as a package of services which sometimes include training sessions, consultancy as well as the documentation and the guidance notes to manage the projects (May, 1998).

<table>
<thead>
<tr>
<th>Type of project / Consultancy firm</th>
<th>Energy generation</th>
<th>Oil extraction</th>
<th>Defence/Space</th>
<th>Financial</th>
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<tbody>
<tr>
<td>BAE Systems</td>
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<td>BMP1</td>
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<td>Halliburton</td>
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<td>Mitsubishi</td>
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<td>PriceWaterhouseCoopers</td>
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<td>Union Fenosa</td>
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<td>Volkswagen</td>
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Table 2.1 Consultancy firms and projects
(Energia, 2003; BMP1, 2004; GEDAS, 2004; PriceWaterhouseCoopers, 2004)

Table 2.1 shows various consultancy firms and the types of projects they have managed. Even though Volkswagen is a well-known carmaker, it also has a consultancy division for providing consultancy and managing projects in both the financial and the defence/space sectors. Mitsubishi, along with the manufacturing of engineering equipment also undertakes consultancy in the energy generation and oil extraction industries. The knowledge these consultancy firms have gathered over the years working in different countries and managing different projects makes them an option for
senior management to consider when a new project is about to start and when the consultants could be hired to manage all or parts of a project (May, 1998; Appelbaum & Steed, 2005).

Hiring a consultancy firm is not cheap and this option may be effective for large organisations that want to set up a structure to manage a large number of projects. In this case, the organisation is paying for creating a framework which will help project managers to improve their abilities and will give them the skills to effectively manage the projects (Appelbaum & Steed, 2005).

2.3.3 Project life-cycle

In order to provide a broader view of the project management process, the life of a project must be analysed. One of the most used and basic project life cycles comprises initiation, management and finalisation (Bryde, 2003b).

Initiation is the phase where the whole project starts. Usually, projects are derived from corporate objectives and must be aligned with these objectives. To assure this alignment, the origins and justifications for the project must be written down in some documents, such as the Feasibility Report, the Project Proposal or the Project Business Case. These documents can provide a broader view of the origins and proposed goals of the project, which will help top management to provide the funding for the project (Bryde, 2003a; Müller & Turner, 2007).

The next phase is management. As mentioned before, a project starts with someone having an idea, then, this idea starts gaining some acceptance until the senior management decides to take action. Once the funds for the project have been approved the idea has become a project and the initiation phase has produced its reports and supporting documents, then the next step is to manage the project (Bryde, 2003a; Bryde & Robinson, 2007).

This is considered the most “productive” phase and involves the actual production of the project output. It is within this phase where project management has its biggest involvement. Formal methods of project management offer a framework to manage this process, providing a series of elements to manage the project through its life cycle. According to Bryde (2003a), Bryde & Robinson (2007) and Cockburn (2003), the project has to be accurately defined and its objectives systematically clarified to avoid
misunderstandings and deviations. Also, the definition of the project should be used as a baseline for controlling the project during the whole life cycle of the project.

Even if problems do come up, defining procedures to deal with them and carrying out risk assessments can help to keep the project under control and specifying tasks to deal with quality issues and clarifying the roles of the people involved with the project help to achieve effective team working. Finally, the identification of the type of organisation in which the project is being undertaken and the skills of the individual members can help to make the project run smoothly and its resources better allocated (Bryde, 2003b; Buckle & Thomas, 2003).

Once these elements have been accounted for, the next logical step is to determine which one of the multiple methods for project management is the most suitable for the project. At a general level, the task of integrating every aspect of the project remains the key focus of project managers (Meredith & Mantel, 2000).

2.3.4 Project management stages

The research of Mäkilouko (2004), Cowie (2003), Clulow et al. (2003), Hodgson (2002) and Gray (2001) based on projects carried out in different countries and across sectors, shows that there are several principles which have to be fulfilled to achieve success when delivering a project. The first common principle is related to the definition of the project. Once the project specifications have been clearly defined the next step is to choose the people with the skills and abilities most suitable for the project. Knowing what the project specifications are and who the people are who will be working in the project gives project managers enough information to estimate time and costs.

Even though the project duration and budget are initially specified in the project requirements, the project manager and the stakeholders can only reach an agreement after the people involved in the project have been selected. The next step is related to the project breakdown. This is the way the project is going to be tackled, what are going to be its stages and what will be the proposed deliverables for each one of these stages (Gray & Larson, 2003). Also, the definition of procedures for dealing with change issues and the establishment of implementation processes are important for successfully completing a project. Finally, all the stakeholders have to agree on what will be the
acceptance criteria for the successful completion of a project. The consistent application of these principles will increase the chance of success of the project (Mäkilouko, 2004).

However, what happens in real life is totally different. In most projects, someone first gives a brief description of the project and then asks, “How much is it going to cost?” or “How long is it going to take?”, “Estimating time and costs,” is usually the first of the points to be executed. This may have to be done without any definition of what the project consists of or what resources will be available and, therefore, without a clear idea of the final outcome of the project (Gray, 2001).

Unfortunately, this problem resides in the fact that most organisations need time and cost estimates long before specific project details are known (Clulow et al., 2003). So the best way to answer this question is to facilitate the dialogue, expectations, parameters and risks associated with the estimate as it is derived and established. The result is a time and cost estimate with risks known and agreed to by all parties that becomes a useful vehicle for the achievement of project goals.

After estimating costs and timescale, the next stage is gathering the people who will be working on the project. However, even in the most ideal situations, project managers rarely get all the people they want on a project because what often drives the assignment of people to a project team is not so much their appropriate skill sets as their availability. Regarding the people in the team, the challenge then is how to motivate and utilise the team members assigned given their skills, abilities and experience. This also applies to the extended project team members such as sponsors, end-users and customers who help in the development of the project. The way to accomplish this objective is to establish a team where all understand their responsibilities and assigned roles and where all believe that the success of the project is in their best interest (Loo, 1996).

Now that the estimate has been established and the project team assigned, the project needs a definition. However, large projects can be very difficult to define in detail at the beginning. Project managers must be able to draw a circle around the effort involved, the personnel required and their roles and responsibilities. The best way to do this is to break the project down into smaller jobs where each job defines areas of difficulty, uncertainty and opportunity prior to the start (Strauss, 1988). The result functions as a beneficial agreement between project sponsors and project managers and acts as the
repository for promises and commitments made to the project by the extended project team (Sacconi et al., 2002).

The first three principles (project definition, timescale and cost agreement and team selection) can be seen as the most important part of any project, since they define what the project manager is supposed to deliver in the scope for the time and cost allocated to the project (Mendonca & Kanungo, 1996).

The definition of stages of the project contains rules and guidelines for breaking the project down into components that can be measured and monitored during execution. In this part, deliverables and the time these deliverables are supposed to take to be completed are agreed on. The establishment of procedures to cope with change and implementing the project also contains rules and guidelines for project funding and managing changes (Brynjolfsson et al., 1997). This includes a change budget that is established and managed by the end customer for the project. Finally the agreement finalisation and closure of the project includes rules and guidelines for accepting products as developed throughout the project life cycle, thereby avoiding unpleasant surprises at the end of the project. If the first five principles become a part of the project management culture in the organisation, the final acceptance of the finished, successful project becomes a very straightforward, logical extension of all that has happened before (Mendonca & Kanungo, 1996).

Other researchers such as Gray & Larson (2003) divide projects into four stages (see Figure 2.3)

![Figure 2.3 Stages of a project](image-url)

(Gray & Larson, 2003).
In this approach, the project is conceptualised and defined in the conceptual phase, where the basic “bricks” to create a project are put together. The elements present in this phase are similar to the ones described in the initiation stage.

The following phase is the planning phase, where all the resources, materials, time and elements needed to produce the output for the project are planned and milestones, deadlines and outputs are defined.

After the planning phase, the execution phase starts up. Here, all the resources are put into work and the inputs are transformed into deliverables, and outputs meeting the deadlines (in the best-case scenario).

Finally, the close-down phase involves the delivery of the final outcome of the project, the review of what was done in order to achieve that outcome, review if the outcome actually fulfils the original requirements and if all these points are accounted for, the redeployment of the resources left takes place.

2.4 Project management methodologies
A project management methodology is a structured set of processes and algorithms that help project managers successfully achieve the desired outcomes of any given project. One of the most important elements of a project management methodology is its capacity to be customised to fit most types of projects (Kerzner, 1997).

According to Kerzner (1997; 2000), Loo (2002), Pinto (1998) and Zimmer (1999), any project management methodology must cover the following elements:

- The project has to be adequately defined based upon the needs of the company.

- The specifications have to be developed in all the projects, in order to avoid project failure. What usually happens is that many organisations skip the specification process and only “go fishing” trying to see what is new or what processes are worth applying in the organisation without even thinking if those processes are really needed.

- Deadlines and milestones must be set up and fulfilled. Unrealistic deadlines demoralise the teams; therefore, establishing realistic milestones and deadlines is
one of the tasks the project manager must carefully develop when starting to develop a project so that each part of the project is clearly attached to an attainable timeframe.

- Once these realistic timeframes are created, the next task is to cut the project into “edible” pieces. This means that even though the timeframes are realistic, the size of the processes needed to complete a specific stage has to be that which the members of the team could possibly complete according to their abilities and responsibilities.

- The assignment of skilled managers to complex projects is an important element. Project managers must have a well-rounded set of skills in order to succeed. Project managers have to understand all the processes involved in a project, coach and motivate the other members of the team and also possess excellent communication abilities to inform all the stakeholders of the state of the process as well as elicit all the information needed for the project to be successful. Finally, project managers must know how to deal with high levels of stress, as this is an always-present element in a developing project, even though it is never accounted for in the project specifications.

- Project management is a process but unless it is clearly defined or if key pieces are missing then it will achieve substandard results or even might end up in total failure.

- Finally, project managers must develop a comprehensive project plan which covers the whole project life-cycle, from the start to the conclusion and following through maintenance and even to the total finalisation and closure of the project. The project manager must anticipate all the outcomes of a project because unexpected outcomes are the ones that usually damage the career of the project manager.

There are a number of project management methodologies available, each one with a specific characteristic that makes it more “suitable” for a particular type of project, however, these methodologies are focused on managing the tangible elements of projects (Jugdev & Mathur, 2006; Jugdev et al., 2007). In their studies, Allan (2003) and Charvat (2003) compiled some of best-known project management methodologies. Both researchers reached the conclusion that apparently all project management methodologies share the same core subject: controlling and managing a project to keep it within time and budget and that, despite the type of projects, they share common
points with their final outcome being to make the project run efficiently and fulfilling the original specifications (Cooke-Davies & Arzymanow, 2003). Appendix C shows a list of the methodologies compiled by Allan (2003) and Charvat (2003).

What links the project management methodologies together is that all of them provide a set of established steps which need to be followed to ensure project success. Authors such as Partington (1996) argue that organisations are encouraged to follow project management methodologies in order to abandon bureaucracy, when these methodologies add bureaucracy to the project management process. Cleland & King (1988) state that only when methodologies are properly understood and applied is when the organisation can achieve its major goals.

The nature of the project is what determines the methodology to be followed (Cooke-Davies, 2004; Hyvärvi, 2006) but it is also the ability and the skills of the people working in the project that can determine the choice of methodology (Thamhaim & Wilemon, 1983). PRINCE and PRINCE2 are successors of PROMPT, a methodology developed by the Central Computer and Telecommunications Agency (CCTA) to manage IT projects and therefore, they share the same underlying principles but enhanced as the methodologies evolve. Prescribing Rationally with Decision-Support In General practice Study (PRODIGY) was developed to work with UK National Health Service (NHS) and medical industry projects and CHESTRA was developed by Siemens to manage business services projects (see Appendix C).

Management must create a project management methodology that defines the project life cycle and processes, right down to what is required, when it is required and how it is done. A complete set of instructions, forms, templates, and tools is necessary to ensure consistent, repeatable performance across the organisation (Bolon & Bolon, 1994). A training programme, tailored to the new methodology is necessary to teach and reinforce use of the methodology. Outside consultants may be required to diagnose and correct existing problems while future project managers are in training. And, most importantly, senior management must require consistent application of the methodology and reward successful project behaviours (Cooke-Davies & Arzymanow, 2003).

Project management methodologies have proven their efficiency in a wide variety of fields and projects have also been adapted to suit the needs of different organisations (Crawford, 2000b; Crawford & Bryce, 2003; Crawford, 2005b). Since the creation of
the CFE in 1937 and PEMEX in 1938 (see Chapter 5), the Mexican government has tried (most of the times unsuccessfully) to apply managerial methodologies which can lead those entities becoming successful and profitable (Castañeda & Kessel, 2003). Unfortunately, the government has failed in foreseeing and adapting the law to cover the growing needs of these two industries since their creation (Castañeda & Kessel, 2003) as these organisations still require further investment to carry out their projects and a more entrepreneurial approach to achieve a higher project completion success rate. In the case of PEMEX, the Mexican National budget is based on the estimated price of a barrel of crude oil (Secretaría de Hacienda y Crédito Público (SHCP), 2004) and from there the national expenditure is estimated and approved by the Congress. Even though PEMEX is the principal provider of economic resources for the Mexican national budget, the government has failed in its attempts to successfully plan the correct development of the projects PEMEX covers and has also failed on ensure its operation and future growth (Escandón Valle et al., 2005).

One point to highlight is that the Director of PEMEX and the Director of the CFE are appointed by the President of the Republic and ratified by the Congress and, as the president in Mexico changes every 6 years, the change of Director in any of these governmental organisations is likely to happen. Even though the general objectives and strategic plans of PEMEX and CFE are set for longer periods of time (usually 5, 10 and 15 years), it does not mean the new Director cannot add his/her vision to those objectives/plans and with these additions change the scope of the plans.

2.5 The project manager

As the project management profession evolves, the people carrying out the profession have to evolve with it, adapting themselves to the new tools and using these tools and techniques in order to deliver value, emphasising the competence of the people who manage the projects.

Crawford (1999) states that, even though project management is a profession still in formation, much attention is given to the nature of the project management rather than that of the project manager. Projects can be delivered more efficiently if there is synergy between the abilities and skills of the project management and the organisational goals of the organisation where they operate (Eskerod & Skriver, 2007). Therefore, in order to
deliver projects on time and fulfilling the required specifications, the development of competent project managers is paramount.

The project manager is one of the most important elements to be considered for the successful delivery of a project (Crawford, 2005a) and this importance has led to the creation of certification schemes and training courses with the intention to standardise, assess, recognise and guide the development of project managers. Some of these schemes attempt to identify the personal characteristics of effective project managers, giving more attention to the knowledge and skills they have to possess rather than personality traits or behaviours (Crawford, 2000a; Crawford, 2005a; Crawford, 2005b; Morris & Jamieson, 2005).

Researchers such as Crawford (1999; 2005a), Turner & Müller (2005), Ford & McLaughlin (1992), Jiang et al. (1998) and Zimmerer & Yasin (1998) have identified several attributes present in effective project managers and which can account for the success of these project managers. Morris (2000) reviews how project managers consider themselves competent and what their opinion is about the abilities and skills required to make a project be considered successful but Ives (2005) states that project success is not achieved only through the use of technical skills and tools but by the skills of the project manager in dealing with organisational politics, allowing them to entwine their abilities and visions with those of the organisation, allowing them to be successful.

Project managers provide the context for monitoring ongoing activities and events and have to embrace the ability to respond to the requirements of such activities. Tasks, schedules, work assignments, rewards and budgets have to be monitored by the project manager and the abilities and skills of the project manager are what provide coherence to these elements and weave them into a successful project (Cowie, 2003).

All these skills and abilities help to establish what are the characteristics of competent project managers. Several authors have based their research about the characteristics of a competent project manager on the research of Baker et al. (1988) where they identified ten critical and twenty three necessary success factors directly related to the interaction of the project manager with the project. Gadeken & Cullen (1991) recognised personal attributes and behavioural competences directly related to those in the Baker et al. (1988) research. They interviewed sixty project managers from the
United States and fifteen from the United Kingdom, working for the Army, Navy and Air Force and found out six behavioural traits that distinguished outstanding project managers from their peers: sense of ownership/mission, political awareness, relationship development, strategic influence, interpersonal assessment and action orientation. These six behavioural traits link any project with the cultural/behavioural side of projects and the people linked to them. Pettersen (1991a) took the work of Baker et al. (1988) and the research of Gadeken & Cullen (1991) as a basis and conducted a literature review to develop a list of elements which have to be present when selecting project managers. He made the note that the work of Gadeken & Cullen (1991) had to be addressed carefully as the armed forces environment is different to that of the civil field.

Since the late 1950s, several researchers have identified the characteristics, skills and abilities that a project manager needs to have to be classified as competent. Gaddis (1959) stated that project managers require solid basic experience in the field where the project is being carried out and, as leaders, should be able to plan, execute and follow up the activities that compose the project. Stuckerbruck (1976) argues that the project manager has to be multidisciplinary oriented, global problem oriented, have effective problem solver capabilities. She continues by saying that the project manager has to be a decision maker with good analytical abilities, able to manage and administer the elements of the project and possessing excellent communication skills and with a creative attitude to deal with problems while motivating the team members and urging them to achieve the project goals; maintaining the calm even under the worst circumstances. This is one of the most thorough descriptions from the early years of project management because it involves several abilities and skills from different areas of the project manager personality. Katz & Kahn (1978) simplified the definition of Stuckerbruck by saying that the project manager should have technical skills, human skills and conceptual skills. For Adams & Barndt (1978), in addition to team management skills, the project manager must have planning, coordinating and budgeting skills. Fryer (1979) adds that a project manager should have the capacity to manage change, recognise opportunities, handle problems, take decisions, bond with people and have social skills.

The previous descriptions were the foundations for other authors who developed more complex profiles of a project manager incorporating the new technologies available at their time. The research of Pettersen (1991b) is a good example of the previous
statement, as he argues that a project manager has to have interpersonal skills, synchronising skills for different technologies, technical expertise and information processing skills. Goodwin (1993) states that the effectiveness of a project manager is linked to conceptual, human and negotiating skills and, to a lesser extent, to technical skills and verbal and written communication skills. Meredith & Mantel (1995) took all the elements a project manager should possess and categorised them in six areas: communication, organisational, team building, leadership, coping and technological skills.

El-Sabaa (2001) complemented the areas developed by Meredith and Mantel by grouping the skills of a project manager in three major groups. The first one includes communication, coping with unexpected situations, delegation of authority, high self-esteem and enthusiasm and is regarded as the group of human skills. The second one, regarded as the conceptual skills group, involves planning and organising skills, goal orientation and the ability to visualise the project as a whole. Finally, the third group clusters technical skills, such as specialised knowledge about the project, use of tools and equipment and knowledge of the technology surrounding the project.

Crawford (1999; 2005a) developed a list of project manager competence factors from reviewing reports and literature from the early 1980’s to 2002. She took 1995 as the splitting point and developed two lists with the results of the analysis of the projects and finally generated a list with the amalgamation of all the factors present in both lists.

The elements Crawford listed are grouped by the number of times they appeared in the literature and therefore, Crawford ranked them on four different tiers: Leadership, monitoring & controlling (integrative), planning (integrative), team development and communication form the first tier. The second tier comprises stakeholder management (parent organisation), technical performance, organisational structure and project definition. Administration, stakeholder management (client), stakeholder management (other), decision making & problem solving, monitoring & controlling (cost), planning (specialist – cost), planning (specialist – time) and strategic direction are the factors in the third tier. The fourth tier involves team selection, closing (integrative), monitoring & controlling (quality), monitoring & controlling (risk) monitoring & controlling (scope) and monitoring & controlling (time).
According to Crawford (2005a; 2005b), these factors represent the skills and abilities a project manager should have in order to be successful and to take the projects to a successful completion and closure. In her research, Crawford found that project managers in the United Kingdom regard five elements above all others. These elements are planning (integrative), monitoring & controlling (integrative), monitoring & controlling (risk), team development and leadership.

A study developed by Crawford, Jha & Iyer (2006) identified three major sets of skills that characterise successful project managers. These skills include some of those mentioned in previous studies but the importance of the research by Jha & Iyer (2006) resides in the fact that it is one of the most recent studies. The three sets are: team building skills, contract implementation skills and finally, project organisation skills.

Team building skills involves the ability to effectively communicate and maintain a harmonious working team as well as the ability to motivate the employees. It requires a conciliatory rather than a confrontational approach and the project manager should be concerned about the ego of the other person. Jha and Iyer state that the project manager should have a good knowledge of psychology and must believe in team spirit, communicating effectively using verbal and non-verbal techniques and developing strong interpersonal skills (Kerzner, 2003). It is important to remark that as the project manager is expected to interact with several areas throughout the organisation, as well as with external stakeholders, the project manager should also possess the abilities and skills of a team member. The attributes within this set are: concern for conciliation, concern for other’s ego, understanding of human psychology, analytical skills, motivating skills, belief in team playing, timeliness, facilitation, interpersonal skills, communication, technical knowledge of the subject and resource utilisation skills (Jha & Iyer, 2006).

Contract implementation skills involve those skills and abilities the project manager should possess in order to fulfil the project planned outcomes. The project manager must have forecasting skills which will help to maintain a close control on the schedules, correcting the project from any deviation and, in the case of the project being already off the track, bring it back on track and within time and budget. This set of skills also involves the concern for health and safety as these elements are paramount for completing a project and its deliverables (Jha & Iyer, 2006). Reliance on a systematic
approach, understanding of the project deliverables, concern for safety, health and welfare of employees, monitoring, documenting, following up, forecasting and planning are skills that fall into this set (Jha & Iyer, 2006).

Finally, the project organisation skills allow the project manager to perceive the project as a whole, keeping the project manager visualising it as a system and preventing her/him from focusing on one aspect at a time (Jha & Iyer, 2006). The project manager should maintain a good relationship with clients (within and outside the organisation), as well as working with people from different areas and departments and this requires good communication and interpersonal skills. The project manager also needs good planning skills and has to be able to understand the financial side of the project as well as ensure timeliness. The skills within this set are: good relationship with clients and contractors, coordination, knowledge of project finances, liaison skills, planning, monitoring, timeliness, interpersonal skills and communication (Jha & Iyer, 2006).

Crawford (2005a) and Jha & Iyer (2006) state that even though the competence of the project manager is vital for project success it remains a concept difficult to identify and quantify and even though project managers are successful, this is due not to the workplace but to the abilities and skills inherent to the project manager rather than to the organisation.

2.6 Project success and failure factors

Projects are run in organisations where various factors can influence the different stages of the project life-cycle, especially at the implementation stage and this influence can be either favourable or unfavourable.

In their research, Shenhar et al. (2002) found that project success factors vary with the project type, depending on low or high uncertainty, leaving the project managers the task of identifying the factors which are critical to their particular projects. According to Little (1981), Roussel et al. (1991) and Shenhar (2001b; 2002) there are four types of projects regarding the involvement of technology: type A, regarding low-tech projects, such as road construction or building; type B or medium-tech projects such as the development of consumer electronics or automobiles; type C, related to high-tech projects such as new military systems or computer improvement projects; and type D or super high-tech projects such as space exploration projects.
By uncertainty Shenhar (2001b) denotes the ratio of time versus expenses to which an organisation is able to cope with technological, social and market changes. Projects with high levels of uncertainty require close control of the project definition, milestones, design, documentation and stakeholder participation from all the levels involved in the project (top management to the final customer). Projects with low levels of uncertainty must focus on a structured and formal selection of contractors and resources, close budget monitoring and management with high quality and autonomy.

Previously, in Chapter 1, factors leading to project failure were described, such as team composition, budgeting and project complexity (Gray, 2001; Aladwani, 2002; Crawford & Bryce, 2003; Gällstedt, 2003). However, in their research, Pinto and Kharbanda (1996) describe factors which can lead to project failure and can be taken as an upgraded version of those described in Chapter 1. These factors are:

- Ignorance of the project environment by the project team or any of the stakeholders.

- Pushing newly developed technology into the market too quickly or without the proper tests.

- Lack of backup plans or contingency measures.

- Blaming the most visible person when a problem occurs.

- Allowing new ideas to disappear with the inertia of the moment.

- Not conducting feasibility studies.

- Not admitting when a project or any of its elements is a failure.

- Over-managing project managers or teams.

- Lack of reviews when something fails, thus leading to a repetition of the scenario and failure again.

- Failure to understand the links between time, cost and quality in a project.
• Allowing organisational politics to interfere when crucial decisions need to be made.

• Running projects with a weak project manager.

It is important to understand these factors as they can lead to project failure, even though critical success factors are usually locked up within the ones mentioned above. Identifying and understanding what the critical success factors for a specific project are is crucial for leading a project to its successful completion.

Pinto & Slevin (1988) mention that, “...there are few topics in the field of project management that are so frequently discussed and yet so rarely agreed upon as the notion of project success.”

Various researchers such as Graham & Englund (1997), Dvir et al. (1998), Brown (1999), Clarke (1999), Johns (1999), Cooke-Davies (2002), Lahey (2002), Loo (2002) and Jiang et al. (2002) have described several project success factors which must be present in any project carried out in any organisation with a successful project management culture.

Describing each and every one of these project success factors would require a chapter of their own. However, the most frequently mentioned ones are described below in further detail. It is important to state that each one of the above authors provides an extensive list of the project success factors that they are researching. However, a compilation was made in order to establish those most frequently mentioned (Table 2.2).
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Table 2.2 Most commonly mentioned project success factors.
(Graham & Englund, 1997; Dvir et al., 1998; Brown, 1999; Clarke, 1999; Johns, 1999; Cooke-Davies, 2002; Jiang et al., 2002; Lahey, 2002; Loo, 2002)

The most commonly mentioned project success factors derived from Table 2.2 will be described in further detail.

2.6.1 Review of the project

As Graham & Englund (1997) and (1998) Dvir et al. state, it is vital that the review is documented, not for the “formal” record of the outcome but for the benefit of other projects, as people working in those projects can learn from the experience and apply the lessons learnt. At the very least, it is all about continuous improvement and this impact benefits the whole organisation. Learning is a process whereby knowledge is created from experience and then, applied into a path which leads to improvement (Bohn, 1994). Kotnour (1999) and Deane & Clark (1997) state that the creation of a set of processes supporting learning amongst the team members is a must in order to ensure that the projects are reviewed, accounted for and the experiences are cashed in.
According to Crawford (2005a), instruments have to be devised to obtain feedback from all stakeholders and produce a thorough review of the project. Beynon-Davies et al. (1999) state that the instruments to review the project have to be applied during the final phase of the implementation of any project. Crawford (2005a) argues that these instruments can be applied throughout the whole project life-cycle, therefore providing the project manager with a comprehensive review of the project in all its stages. Brown (1999) and Ulusoy & Cebelli (2000) state that the time spent in this process has to be constrained and attached to the project scheduling. Also, Montealegre & Keil (2000) mention that within these constraints, an in-house task force has to be set up to carry out a thorough review of the project and the chosen courses of action.

Finally, according to Hall (1999) and Johns (1999), it is essential to involve all the stakeholders in the review of the project ensuring that the project followed the proposed guidelines, that the project management process was thoroughly followed, that risks were appropriately managed, that communication channels were formally established and used, that the proper documentation was produced and that each one of the project phases (and therefore, the project as a whole) delivered the agreed outcomes complying with the specifications.

2.6.2 Involvement and commitment from the stakeholders

In order for a project to be successful, solid business sponsorship is needed. Lack of executive-level support and commitment is an element of project failure. Sponsorship from the executive management reaches peak level when the project affects the culture of the organisation (Zimmer, 1999). Hall (1999) defines this sponsorship as the buying of the project by the senior executives of an organisation, ensuring that the project will meet expectations and will trigger change throughout the whole organisation.

Saia (1997) and Loo (2002) state that the project managers have to communicate clearly and without any doubt what the project needs, what is its status and what are its possible threats, which leads the project manager to do whatever it takes to ensure that the project will comply with its deadlines and milestones.

The research of Glaser et al. (1987) points out that the middle management has to be involved in the project. One important reason why projects fail is because of the lack of support of mid-level managers who feel alienated by the process as they feel that it
might lead them to lose power and finally, losing their main responsibility within the organisation, which is making decisions. To avoid this, the involvement of these mid-level managers from the initial phases of the project is essential and will finally translate to a smoother project development which can be further improved by the use of project management methodologies (Clarke, 1999).

2.6.3 Use of project management methodologies

The use of project management methodologies helps the project managers to comply with the definition of the project, cover the specifications, establish deadlines and milestones, break the project into realistic pieces, assign tasks to skilled managers and define a strong project architecture (Lahey, 2002) which ultimately leads to a comprehensive project portfolio that serves as a “presentation card” for each project manager (Adler et al., 1995; Kerzner, 2003). Also, the use of project management methodologies along with work programmes and the use of project review mechanisms have a positive impact on project development (De Marco & Sorrentino, 2006).

According to McDonald (2001) and Loo (2002), many successful projects owe their success to the use of project management methodologies, making people aware of the usefulness of such methodologies and paving the way for further projects being carried out following the guidelines established by these methodologies (Sukhoo et al., 2005). Goyal et al. (2001) estimate that the use of project management methodologies increases the productivity in a project between 5% - 7.5% and considering that nowadays projects are constantly over budget and over time, any increase in productivity is more than welcome by the project managers.

De Souza et al. (2002) state that the use of project management methodologies optimises the process of resource allocation and allows a better evaluation of the state of the activities undertaken during the duration of the project as well as the success of the project team in delivering the outcomes associated with the project, with the consequent customer satisfaction but keeping in mind the human component of the methodology. Finally, Jiang et al. (2002), Krishna et al. (2004) and Furumo et al. (2006) state that the use of communication and information systems also help projects to achieve their objectives.
2.6.4 Use of communication and information systems

Communication is the key for any successful project. Poor communications can hinder the advance of a project or even worse, lead the project to a total failure. Information should be readily available in order to help the team members to support the project. Interpersonal communication is vital to the project due to the interdependence amongst all the stakeholders (Graham & Englund, 1997).

Maughan (2001) states that the use of communication and information systems provides the project with information which otherwise would not be available. This information can provide the project manager, team members and all other stakeholders with an insight into the project, therefore allowing them to understand certain aspects of the project which none of them could see before (Johns, 1999).

Although the use of information systems allows the project to expedite the communication process (Jiang et al., 2002), it is important to keep in mind that sometimes these systems lead to a lack of physical interaction because this information is usually stored in computer-based tools and they do not require physical interaction between the generators and users of such information (Wilhelm, 1999), and on most occasions, access to this information and its communication requires of a team-based and participative approach to achieve improved results (Martin & Tate, 1998).

2.6.5 Team-based/participative approach

Clarke (1999) argues that the project manager must act as a facilitator to the team and as a “guru” through the project management process. It is the team who creates the project plan, and it is also the team who controls the project and even though the project manager has to be aware of every stage of the project, it is ultimately the team who assesses what went right and what has to be improved in order to improve for the next project (Martin & Tate, 1998). This means that the project managers have to learn new skills, such as conflict resolution, active listening, team decision-making and participation, which participative project managers have been using for a long time but that have not reached the heart of most traditional project managers on the field. Sweeney & Lee (1999) and Cleland (1996) state that this participative approach to managing a project is a very important factor when trying to create better project results.
Ellis and Phelps (2000) argue that the involvement of individuals with specific skills who can share experiences and ideas with other team members can provide the project with different points of view and therefore, improving the chances of project success. However, Bennet (2004) states that these teams should be composed of a limited number of individuals and all the skills should be distributed between all teams. At the same time, a team-based approach challenges work processes and simultaneously achieves improvement of the processes comprising a project (Taylor, 1995) and also gives the project an improved orientation and control (Wilkins & Lawhead, 2000).

2.6.6 Project orientation and control

Once the project has been authorised, the project manager must lead a meeting where the key stakeholders who will be involved in the project can share their point of view and their worries, ideas or comments about the project in order to define the scope of the project with greater clarity (Deutsch, 1991; Brown, 1999). Also, this meeting will give the project manager the opportunity to understand how the stakeholders view the project and from there, start building up the team which will be working in the project (Wilkins & Lawhead, 2000).

Reports have to be produced in order to make sure that the project stays on track and that the resources are applied the way they must; also, these will function as information for the project manager and the board and directors to understand what is the status of the project and take the appropriate decisions (Hall, 1999). In order to achieve this, training is required (Brown, 1999).

2.6.7 Training

Many organisations offer training to the individuals working for them, although what makes this issue more important is the fact that the companies training their employees in the use of project management tools and techniques actually simplify the project management process (Loo, 1996). According to Loo (1996), in order to deliver proper training the organisation has to consider four key factors: commitment from the staff and the trainer; establish the appropriate training time; know the relevant project management systems; and finally, evaluate the results of the training sessions.

What makes training important is that managers can have an understanding of what their abilities and skills are and therefore, acknowledge what are the areas they need to
improve (Crawford et al., 2003). Also, Crawford & Costello (2000) state that training provides the individuals with a common language and tools and techniques which can be applied in their work place; even though each one of the employees adds their own particular point of view to these tools and techniques. The application of the learned skills in the workplace translates into an actual transfer of knowledge from the trainer to the trainees and then from the trainees to the organisation in the form of understanding needs and requirements and being able to provide a faster response to solve problems arising and transforming the individuals who received the training into assets of the organisation (Seleim et al., 2004).

Finally, Hamilton (2004) states that a well-structured training program will create a core of excellent project managers which, at the end, will help the organisation to achieve its objectives while at the same time they are able to transfer their new abilities and skills to other members of the organisation. However, as Huchzermeier & Loch (2001) argue, as a project becomes more complex, risk management structures have to be put in place.

2.6.8 Risk management

Authors such as Boehm & DeMarco (1997), Dvir et al. (1998), Huchzermeier & Loch (2001), Raz & Michael (2001), Cooke-Davies (2002) and Cowie (2003) argue that risk management is, in fact, project management because when applying project management methodologies, what project managers are doing is trying to minimise the impact of risk on projects and planning ahead if such risks present themselves.

According to Huchzermeier & Loch (2001), flexibility gives projects the advantage of better risk management; however, Perlitz et al. (1999) argue that this flexibility has to be limited or the project would end up being not a project but a never ending risk management process.

When a project is being carried out, there are two types of risk involved: project risk and operational risk. Project risk refers to all those risks which, if realised, would prevent the successful delivery of the business change (Huchzermeier & Loch, 2001). Operational risk involves the identification of any risk triggered by the business change, which requires a better understanding of the business operation (Raz & Michael, 2001).
2.6.9 Change control process

In this fast-paced and ever-changing project management environment, a change control process helps the organisation to keep track of the changes to the project and at the same time, to manage these changes in a more efficient way (Graham & Englund, 1997). The potential impact these changes can have on the project can be contained if there is a well-defined change control process, which has been agreed upon by the stakeholders (Conrow & Shishido, 1997).

Kwak & Ibbs (2002) state that the change control process has to be embedded in the project scope, ensuring that all the factors and variables that can impact a project are defined and that all the stakeholders are aware of them. The change control process ensures that the project risk will be minimised while at the same time, it allows a better understanding of the processes impacting the project and that create change within (Yazdani & Holmes, 1999). Also, Wiegers (2000) mentions that the change control process can be supported with problem-tracking tools and that these tools are pointless if there is not a proper documented process. Therefore, there has to be a proper scope and prioritisation of the project.

2.6.10 Scope and prioritisation

Scope and prioritisation provides the project with the ability to recognise what the stated requirements are (Johns, 1999) and therefore, establish a formal approach in order to ensure such requirements are met in the proper time (Bátiz-Lazo & Wood, 2001).

Scope and prioritisation also helps the project managers to keep track of the interdependences between several elements of the project (Cooke-Davies, 2002), allowing them to perform control tasks and to evaluate what are the lessons learnt and the actions that need to be taken to ensure that the processes to follow will be successful (Heindl & Biffl, 2005). Furthermore, Heindl & Biffl (2005) state that the importance of scope and prioritisation resides in the fact that not all the requirements in a project have a similar value and some of these requirements will not be completed due to constraints attached to the project itself.

Laing et al. (1997) argue that the development of management structures and processes influences the evolution of the management process per se and therefore, impacts on the scope and prioritisation attached to the development of the project. Such impact can be
diminished if project managers and all stakeholders have a good understanding of the processes composing the project and reach an agreement on the way these processes will be carried out.

2.6.11 Awareness of the people culture factor

People do not like change and the project team and manager have to be aware of this statement (Loo, 2002). Those affected by the change raised by the project might start objecting and delay the project or in the worst-case scenario, refuse to accept the change with the consequent project flounder (Naylor, 1996). Overcoming cultural obstacles can pose a challenge for many organisations and most of the times contingency plans are required to deal with these obstacles as soon as possible. According to Loo (2002) and Huq (2005), any organisation which desires to achieve good project performance and a good approach to project management has to show awareness of this factor and at the same time, establish a clear plan to deal with it.

Buchanan et al. (1999) argue that most organisations with people culture factor problems tend to have a poor understanding of all human factors of their employees as well as a lack of communication, therefore leading to poor project management. This problem leads to a lack of effective user involvement and poor engagement with the outcomes of the project, with the consequent increase of the probabilities of project failure (Van Dyke & Sinclair, 2003).

2.6.12 Use of rewards and metrics

Sharing the experience can help the team and the project manager to understand the worries and understand the culture they live in (Mendonca & Kanungo, 1996). Empathising with people and understanding what their reality is will break down walls and establish a mutual bond of trust and communication, thus translating into an easier relationship and smooth change (Naylor, 1996). In many organisations, financial incentives are used to achieve “behaviour modification” or, in other words, companies use money (or in other cases, pompous job titles) to steer their employees into a more productive path and finally, to a successful closure of the project (Bresnen & Marshall, 2000).

Authors such as Dvir et al. (1998), Webster & Hoque (2001) and Johns (1999) mention that the use of rewards or penalties has to be incorporated into the system, therefore
creating a reward/punishment culture in the organisation. The authors also mention that these rewards have to be attached to a clearly specified metric in order to establish from the very beginning what the course of action will be if the previously set scales are not met. Obviously, the extent of the metrics, rewards and penalties has to be closely related to the industry sector where the organisation is operating (Naylor, 1996), as it is not the same to establish rewards and metrics for a fast-paced environment such as IT than for slower sectors such as construction.

2.7 Conclusion

Projects need to be managed in a constructive way in order to maximise the use of resources and to fulfil the requirements and specifications of the project. The type of project, the managerial style, the size of the organisation and the project manager are some of the points impacting the project and its likelihood of being completed successfully. The project life cycle determines the resources to be used, the techniques and tools needed to fulfil the specified dates and to produce the required deliverables. The use of project management methodologies to control projects allows organisations to oversee all the elements of the project, from its specifications and schedules to deliverables and outcomes and provides a set of steps aimed to ensure the successful completion of a project. These steps include the definition of roles, the documentation of all the activities, schedules and stages that will provide the project manager with the tools and techniques needed to keep the project on track and within budget and time constraints.

The project manager is the person in charge of managing the project, the work team, stakeholders and is also in charge of ensuring that every part of the project is going according to plan and that the deliverables comply with the specifications. The abilities and skills of the project manager are important to ensure the success of the project while at the same time allowing the project manager to make projects go back on track and to motivate the team to pursue common goals and guarantee that the project will be completed on time, within budget and fulfilling the specified requirements.

The managerial style, the project management methodology and the project manager are some of the factors that ensure the project success. The review of the project, the type of communication, the approach to tackle the project, the risk management and the awareness of the people culture factor are some of the factors that can lead to a
successful closure or to a failure of the project. It is the task of the project manager to review all these success and failure factors and ensure that the project is on track and on the way to a successful closing and, in the case of the project going astray from its goals, devise strategies to correct such problems and make the project get back on track.

All these elements, along with the expertise of the project manager and the team members impact the success of the project. Also, culture contributes towards the success of projects and, when it is brought into the project management cycle, contributes as a catalyst for relationships between the team members (Stephens & Greer, 1995; Egri et al., 2000; Báez-Lazo & Wood, 2001; Athanassiou et al., 2002).

Projects in Mexico and the United Kingdom share multiple elements, from the type of project, to the sector where the projects are carried out and the criticality of their impact. However, the culture of the people working in the project impact their perception of the entire project and of the surrounding environment and these people are the ones who help the project manager to understand what the team members feel and perceive as the objective of the project (Cleland, 1996; Loo, 1996; Farr-Wharton, 2003; Fisher & Härter, 2003; Appelbaum & Steed, 2005).

Multicultural teams give organisations a competitive advantage when carrying out projects. Culture within organisations helps to drive projects by allowing people to interact among themselves and to face and overcome challenges, as individuals and as teams and, as researchers such as Trompenaars & Hampden-Turner (1997) state, culture gives people a sense of identity which can therefore be shared by the project team.

These points form the basis for understanding what a project is and what are the elements impacting it. Following this, the current trends in research in project management will be discussed in the following Chapter.
Chapter 3  Project management trends

3.1 Introduction
After having discussed the elements of project management in Chapter 2, this Chapter presents the evolution of project management, from its origins in the construction and defence industries to the latest developments in research. The evolution of the research in the project management field, its structure and how project management methodologies have evolved is discussed in section 3.2. The development of the Critical Chain project management methodology and its origins in critical path management are discussed in section 3.3. Section 3.4 presents project management maturity models, their alignment with the organisational goals and their benefits providing a competitive advantage for the organisation. Distributed project management is discussed in section 3.5, along with its elements and the development of this field in the globalised economy and the impact of the culture of the people comprising the teams on geographically dispersed projects. Finally, section 3.6 presents how software applications have been developed to ensure smoother management of projects following the areas of project management of the Project Management Body of Knowledge (PMBOK).

3.2 Evolution of project management
The discipline of project management has its origins in the construction and defence industry and its ideas, methods and techniques have been built upon the experience and knowledge of project managers accumulated throughout years of carrying out successful and unsuccessful projects.

The literature within the field of project management emphasises the importance of structuring project planning tasks through a systematic approach allowing the project to start with the right activities in the correct order (Cleland & King, 1988; Project Management Institute, 1996; Pinto, 2002; Kerzner, 2003). These activities are structured in what project managers call “Work Breakdown Structure”, used for identifying which work must be done in a more systematic manner and it is regarded in the literature as only the beginning at the formal project-planning process. From this starting point, projects should involve the identification of relationships between the activities described and determine the logical order in which such activities should occur establishing when each activity must be completed in order for the following one
to begin, with the consequent quantification of resources required and the responsibilities for each one of the activities (Luby et al., 1995).

In the late 1950s, two methods were developed for planning a project, graphically showing the sequence of individual work tasks and the relationships amongst these tasks required to successfully complete the project. These methods are known as PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method). These techniques present a network of activities, events and dependencies between events and activities with the purpose of identifying the critical path of the project (Ives, 2005). The critical path is the longest sequence of dependent activities. Adding the time these activities will take provides the shortest possible time required to complete the project and once this critical path is identified, all other activities are scheduled upon the assumption that more resources would be required if the project is to be finished in a shorter period of time and if the activities take longer to be completed then investment in resources will be smaller (Hagemann, 2001).

These methods have proven their usefulness in countless projects and projects managers trust and rely on these to complete their projects. However, these methods are not exempt from criticism. The major drawback with PERT and CPM is that they are based on the assumption that the project will produce a fully functional outcome and that the only elements in the project that can be manipulated are time and resources. Hagemann (2001) Ives (2005), Lechler et al. (2005) and Shenhar & Dvir (2005) state that PERT and CPM do not address other issues in projects, such as the uncertainty of the duration of the tasks and the arbitrary behaviour found during the assignment of resources and time to the tasks.

The project management field is a complex socio-technical environment and several researchers have devoted their work to dwell in the different areas of knowledge that are involved in project management. Henrie (2004) conducted a study in the field of project management from 1993 to 2003 and found several different areas that had attracted the attention of researchers. The vast majority of the studies are related to areas that are directly linked with the elements of PERT and CPM, namely, time scheduling, control, procurement, project success and project management in general.

The reason why these studies are related to the elements mentioned above is very simple, since the development of PERT and CPM researchers have addressed their
elements and have tried to understand how they work, how these methods can be improved and what their benefits or downsides are, considering that nearly sixty years have passed since these methods began to be used. It is only logical to expect that the academic literature will address such methods in detail. In his study, Henrie (2004) remarks that since the late 1990s researchers in the field of project management have addressed the issues of culture within project management, leadership, communication, personnel management and decision making and that in several studies, the appearance of these topics denotes the trend of the research. However, Henrie (2004) also states that in most cases, the topics related to culture and project management are subjective in nature and always constrained the point of view of the researcher conducting the study.

From the year 2000, new studies have emerged showing new streams on project management research, covering subjects such as project typologies and contingencies, strategic project management or the globalisation of projects. However, according to Shenhar & Dvir (2005) these studies have not had a significant impact on the actual practice of project management. Nevertheless, they argue that fields other than project management can provide different approaches or techniques which can be applied to the field of project management.

Kloppenborg & Opfen (2002) identified several areas of project management where groundbreaking research is being conducted. Amongst these knowledge areas, in the subject of communication they found that the areas of personal perspective, communication as a tool to ensure project success, project concurrency, relationship building, cultural analysis and the use of web-based technologies to ensure communication were fields with a promising future. On the subject of cost management, authors such as Yunus & Babcock (1990), Fisher et al. (1995) and Luby et al. (1995) have conducted research addressing the issues of benchmarking through effective costing and planning based on knowledge-based scheduling and component-based work breakdown structures. These authors reached the conclusion that although these topics add complexity to the general management of a project, their inclusion and monitoring provides an important tool to measure the success and validity of projects which therefore translates into improved overall project understanding.

Regarding procurement, Kloppenborg & Opfer (2002) categorised a number of streams leading the research, which tended to emphasise the link between the business, culture
and people areas of the project. Akterian & Newcombe (1996), Scheuing et al. (1996), Shoesmith (1996), Avila (1997), Barry & Pascale (1999) and Kini (1999) are authors whose research covers the fields of materials management, procurement and selection process, project team empowerment, web management and integrative solutions, procurement liabilities and supply chain management. These authors described how, by addressing these topics, project managers could benefit themselves and their organisations by keeping all-round control over their projects along with maintaining an open approach to deal with issues previously overlooked.

Another field Kloppenborg & Opfen (2002) categorised as developing, is that of integration, where researchers such as Cleland (1991), Fischer & Froese (1996), Höynälänmaa et al. (1998) and Katzel (1999) developed studies regarding the characteristics of shared projects, the management of mega-projects, enterprise-wide project management and project design teams. The importance of these topics resides in the fact that nowadays, due to the size of organisations and the links these organisations have across geographical borders, projects are increasing in size, complexity and number of participants making them more complex to manage. Also, Coulliard (1995), Mallak, & Kurstedt (1997), Williams (1997) and Baker et al. (1998) have conducted research regarding risk management, identifying techniques for risk analysis in major projects, planning for crises, empowerment and risk management infrastructure and risk management as a project management approach. In project management, the importance of risk management has its roots in the very nature of projects, because just as projects grow in size and complexity, so does the inherent risk and both the project manager and the project team have to address these issues before they impact the project.

Even though Kloppenborg & Opfen (2002) identified other areas of research within the field of project management, it is important to mention that some of these areas have been researched since the beginning of the discipline of modern project management. As mentioned above, Henrie (2004) conducted a study in the early 2000s and he found that research in the field of project management is moving towards the integration of cultural issues such as behaviour and perceptions, with project management elements. This is consistent with the findings of the research by Kloppenborg & Opfen (2002) where they identified a similar movement within the project management field.
The research of Henrie (2004), Shenhar & Dvir (2005) also found that within the area of technology and innovation management, the use of culture as an innovation tool has proven its value. They argue that the process of innovation can teach valuable lessons to project managers when applied to real organisations and ongoing projects. Furthermore, Shenhar & Dvir (2005) argue that from the field of new product development, project managers can learn how to identify critical success factors, how to influence the environment when the project is being carried out and ensure the processes are developed and improved as they are carried out.

Kolltveit et al. (2007) identified six perspectives in projects where researchers were conducting studies and show an evolution from the previous studies in the field of project management. They found that from 2002 onwards, the areas of project management with the most studies published are leadership and business. Uncertainty, leadership/management, communication and learning are some of the issues Kolltveit et al. (2007) assumed as related to leadership and that they underpin the theories of team organisation, communication theory, process, leadership theory and change and they are executed with tools and methods such as evaluation and feedback, communication plans, responsibility matrixes, organisation, milestones and decision-making structures. The importance of these issues resides in the fact that it is the job of the project manager to deal with them. Project managers are the leaders of the project and just as Kolltveit et al. (2007) mentioned, it is their responsibility to create and measure plans, define milestones and make decisions related to the project. In the area of business, Kolltveit et al. (2007) grouped the issues of project results, success, strategy and profit, underpinned by accounting, financial, strategy and portfolio theories whose methods include payback, net present value, return on investment and excellence models. The importance of these topics resides in the fact that even with all the proper project management techniques and with all the skills and abilities of the project manager, the project is incomplete without the tools that allow the project manager to analyse the viability of the project, their overall impact and the potential lessons to be learnt before and after the project has been implemented (Cook, 2000; Williams, 2003; Jugdev, 2006).

One area that drew the attention of Kolltveit et al. (2007) were the abilities of the project manager as an advantage regarding stakeholder management. They discovered that since 1983 the articles published regarding this area are far behind in number and
frequency to any other of the six perspectives they identified. Even though they argue that stakeholder management is an important factor for project success, the fact that the small number of articles published in this area show that authors are not interested. However, since 1998, the number of articles in this area has increased and researchers have acknowledged the importance of stakeholder management in the achievement of project success.

Even though the above mentioned researchers and lines of study provide a picture of the state of research in the field of project management, the fact is that research in this field is still at an early stage. Due to the lack of a natural home-discipline and the theoretical knowledge of the project management, the field is still fragmented (Söderlund, 2004b; Söderlund, 2004a). However, researchers from other disciplines, such as engineering (Rupp, 2004; Pels, 2005), business (Hyvärä, 2006), organisational behaviour (Jiang et al., 1998) and computing sciences (Wateridge, 1998; Crawford & Bryce, 2003; Müller, 2003) are conducting research covering the field of project management and consequently the approaches vary depending on the discipline. In any case, the field in which project managers can learn the most is operations management (Shenhar & Dvir, 2005) as studies in this field look at projects as processes and apply optimisation techniques to improve project performance. These techniques allow project managers to improve their projects without stopping to address potential pitfalls and to learn about the projects on the go. Any member of the team can apply techniques such as optimisation techniques to any project when there is potential for improvement. The fact that any project is composed of processes and sub-processes which can be improved upon gives the project manager the opportunity to make adjustments and save resources and time or establish potential back-up measures (Shenhar & Dvir, 2005) leading the project towards a successful closure.

3.3 Critical Chain Project Management

As the techniques and methodologies for project management have evolved with time, researchers have incorporated findings from other fields and areas into that of project management in order to simplify its techniques or to ensure more efficient and effective project management and maintain the focus on project success. From the field of operations management, researchers have adopted the concept of critical chain and embedded its characteristics into project management (Goldratt, 1997; Herroelen et al., 2002; Lechler et al., 2005).
Eliyahu M. Goldratt introduced the term “critical chain project management” in the book of the same name in 1997 (Goldratt, 1997) and since then it has been the focus of discussion and research amongst the project management community. Critical chain project management (CCPM) is based on methods and algorithms originated from his theory of constraints and, the application of CCPM has been credited with finishing projects 10% to 50% faster and/or cheaper than the traditional methods (i.e. CPM, PERT, Gantt, etc.) (Herroelen et al., 2002; Lechler et al., 2005). CCPM focuses on the uncertainties in any project and around finding constraints related to the project and then arranging all other work around them by identifying the shortest time that a project can be delivered, considering resources and task dependencies (Goldratt, 1997).

Pinto & Morris (2004) state that even though critical path has defined and standardised the practice of project management, the principles of network techniques have evolved since critical path was developed and that a new approach to project management was needed in order to address the downsides of the critical path methodology. Moreover, Pinto & Kharbanda (1996), Pinto & Morris (2004) and Dooley et al. (2005) argue that most of the project management theories and practices to date are focused on single projects and that the main goal of a responsible project manager is to allocate budget, time and resources so the project can be implemented despite that organisations today are primarily involved in the management of multiple concurrent projects.

Following these arguments, Lechler et al. (2005) analysed the critical path and critical chain project management methodologies and identified seven concepts which are used to evaluate the strengths and weaknesses of the two methodologies. These concepts are the theory surrounding the methodologies, the identification of goals, the focus of attention from the project managers, the management of uncertainty, the management of resources, behavioural issues, operational metrics and the execution of the project. These concepts are assessed from four different levels. Lechler et al. (2005) argue that the methodologies have to be thoroughly underpinned and supported so the project follows the correct methodology. Also, the goals of the project have to be clearly stated and aligned with the processes of the project and that the project managers, although keeping a higher managerial position, have to be able to understand the fine details of all project processes. Just as projects grow in size and complexity, the project managers have to be aware of their responsibility in managing and understanding the potential areas of uncertainty surrounding the project. Furthermore, regarding the resources, the
project manager has to understand the availability of such resources, whether they are monetary or human and in the latter case, the potential problems related to the interaction between team members and teams and customers. Finally, as the project is being developed, the metrics developed to measure the project performance and completion have to be thoroughly understood because the project manager is accountable not only for the actions of the team members, but also for the completion of the project, its delivery and its success (or failure) in the eyes of the senior managers.

The first level of assessment is the philosophical level, where the theoretical basis of critical path and critical chain are compared and it is crucial to understanding the methodologies down to their operational level. Winch (2006) states that critical chain shares most of the characteristics of critical path, with the advantage of adding elements that make it more suitable for projects carried out nowadays. In the case of the underlying theories supporting critical path and critical chain they both share the systems and graph theory, however, in the case of critical chain, it adds the theory of constraints as it accentuates the difference between critical and non-critical resources. Regarding goals, both methodologies minimise the duration of projects due to resource constraints and try to meet the specified time, cost and scope, but critical chain also maximises the project throughput in multi-project environments while adopting a satisfying approach (Herroelen et al., 2002; Lechler et al., 2005).

The main advantage of the critical path project management methodology is that it is well established and organisations and project managers are used to following it to carry out projects (Lechler et al., 2005). As critical chain shares some of the basic underlying principles of critical path, the investment in infrastructure and training required to implement the critical chain methodology in organisations is not as high as it would be if the methodology to be implemented was a different one (Herroelen et al., 2002). Although relatively similar to critical path, critical chain is a different methodology and several organisations which have tried to implement it have reported an extra workload in terms of complexity, modifying behaviours and buffer management (Lechler et al., 2005).

As in every new project, introducing a new methodology to any workplace may face reluctance to change and a resistance to leave behind old practices (Goldratt, 1998). Managers have to be convinced about the efficacy of this methodology and then a new
management discipline has to be implemented so project managers, team members and other stakeholders agree and follow the specifications provided by the methodology (Lechler et al., 2005). Critical chain has proven its value as a successful methodology with numerous applications in different sectors of the industry as it manages constraints to avoid or solve resource conflicts (Herroelen et al., 2002; Lechler et al., 2005), reduces the work in progress and multitasking, and focuses on the total outcome of the project and not on individual deliverables. Project managers can closely monitor the resources being spent and reduce the number and size of workloads and in the case of the project deviating from its schedule, re-prioritise tasks and eliminate bottlenecks in order to keep the project moving towards a successful completion (Hagemann, 2001).

3.4 Project management maturity

As the industry and enterprises steadily adopt project management to achieve project success and gain a competitive advantage, these organisations have to ensure that the project management methodologies they are applying deliver successful projects. To achieve this, the establishment of an organisation-wide project management process, the development of a career path for the project managers working for the organisation as well as training and motivation schemes are some of the schemes that the senior management of the organisation should consider. These changes to the way projects are being carried out as well as the improvement to the career of the project manager involve committing the organisation to a significant effort. This requires a perfect understanding of the status where the organisation is, what its future steps will be, and more importantly, how the organisation needs to grow and to address these issues is that project maturity models have been developed (Andersen & Jessen, 2003).

Project maturity models are designed for organisations that conduct similar projects in a repetitive manner (Andersen & Jessen, 2003). Maturity models enable standardisation of project activities in a company. There are several maturity models designed for different types of environments, such as software engineering, product development, R&D and software acquisition (Grant & Pennypacker, 2006). Additionally, there are maturity models that just cover the project management field and exclude the engineering and manufacturing operations in the projects of the company (Fincher & Levin, 1997; Goldsmith, 1997; Cusick, 1999). Project management maturity models are methodologies whose purpose is to enhance the ability of the organisation to implement strategies and reach goals throughout successful, consistent and predictable deliverables.
which will complete a project, independently of the type of industry where the project is carried out (Cooke-Davies & Arzymanow, 2003; Cooke-Davies, 2004). In other words, a project management maturity model is a way to recognise the ability of the organisation to implement standardised procedures to achieve successful results.

Nowadays, organisations cannot change their course of action on their own, they have to adapt to what the surrounding environment presents and react to the additional pressures of a globalised world (Grant & Pennypacker, 2006). As the complexity of the relationships between the organisation, suppliers, customers and other relevant stakeholders grows, the main focus of the organisation should not be to manage projects but selecting the adequate projects to suit the strategic vision of the organisation (Norrie & Walker, 2004).

If an organisation has the capability to locate the most suitable methodology to manage its projects it also implies that the organisation has the adequate capability and maturity to ensure that the project can be successfully completed (Andersen & Jessen, 2003). Most project management maturity models start with the assumption that an organisation has a well-defined project management methodology covering the pre-project, project and post-project phases of the traditional project management models (Cusick, 1999).

The normal evolution of project management within an organisation increases in complexity as it progresses through the beginning stages of managing multiple projects, then eventually grouping projects (either thematically, divisionally or strategically) into programs. At the same time, this often leads to the introduction of a centralised project management office (Grant & Pennypacker, 2006). However, the responsibility for the proper execution of these capabilities can be thought of as being primarily at the project level, shared jointly with the centralised processes of the organisation or residing exclusively at the organisation level. Generally all maturity models for project management published today accept and support this hierarchy (Cusick, 1999).

The research of Grant & Pennypacker (2006) shows that organisations have not yet fully adopted project management maturity as a core issue of their corporate strategy because of all the implications this model involves. First, the changes in the strategy of the organisation, communication and the involvement of stakeholders and decision makers require that the information shared is clear enough to allow its smooth
transference while at the same time it improves the quality of the deliverables required. Second, even though Grant & Pennypacker (2006) did not find a widespread difference of project maturity levels across industries, they stressed the need of organisations adopting this approach as it will improve the chances of successfully closing projects whether these organisations rely on external projects or internal ones.

### 3.5 Distributed Project Management

As companies grow in size and operations, the projects carried out in these organisations become bigger and more complex. Such projects sometimes require the application of techniques specifically designed to manage projects which can be broken down into several smaller projects and then once these projects are finalised, assembled together to complete the main project. The expansion of operations of organisations to several different geographical locations (due to better economic perspectives, opening of new markets, subcontracting of operations or the need to become more competitive) has led to project teams being increasingly geographically dispersed and thus requiring a new set of methodologies and tools to manage such operations and the projects composing them.

Researchers such as Pyster & Thayer (2005) stated that despite the “best practices” introduced to project management in the early 1980s, even now projects are still failing. The reasons for these failing are the lack of a rigorous application of the aforementioned best practices and the competitive pressures that keep projects growing in size and complexity. Therefore, the introduction of new technologies, tools and methodologies will ensure a rise in the number of successful projects (Aziz et al., 2005).

Project managers have to adapt to this new environment because it involves changes at all levels of the project, from resourcing and transporting goods, to co-ordinating teams, maintaining schedules and managing budgets. Large-scale projects (such as the assembling of the latest Airbus A380) require a well-planned infrastructure and flow management solutions, which will provide the project with the basic guidelines for its completion (Rupp, 2004).

In countries such as the United States, legislation has been brought in which has impacted the way that projects are being carried out. Also, regulations developed by the European Union have impacted such projects (Roper & Phillips, 2007). From e-
sourcing to logistics and transportation, this set of laws and legislation have added extra constraints to the way projects are managed and have also helped in the creation of new tools which have the purpose of making the project management process easier (Nidiffer & Dolan, 2005).

Distributed project management relies on the idea that several departments or areas of an organisation, or several different organisations, have to work together to achieve a common goal, considering the individual constraints on each one of the different departments or organisations and upholding the idea that these projects are motivated by the satisfaction of the members of the project in completing the project as a whole and not only their deliverables (Marle & Bocquet, 2001).

Design principles for distributed projects become increasingly important because tools and methods reach workable levels of technical maturity. While most methodologies and projects offer a similar set of functionalities they build on different conjectures of whom and what they support (Katzy & Sung, 2004). Researchers discuss project output dimensions such as efficiency and performance, as well as how to measure them (Prieto et al., 2001; Nagarajan et al., 2004; Pels, 2005). Distributed project research in this regard has broadened its scope and object of analysis from initially mostly dealing with individual collaboration to a team or project level of collaboration and finally to an organisational and business level analysis of collaboration impact. Moving up in the organisational hierarchy means addressing new topics such as organisational strategy and business impact. A key characteristic of distributed projects is to link performance in the relevant external environment to the internal design characteristics and structures as design principles offer a mechanism to establish the missing links (Nidiffer & Dolan, 2005).

Many of the ideas of the distributed project methodologies can now be applied in organisations because the necessary technical infrastructures have become widely available (Nidiffer & Dolan, 2005; Sutherland et al., 2006). For example, distributed project management reached general interest through the introduction of technologies for synchronous communication such as Internet telephony and rapid improvement of broad bandwidth and mobile connectivity (Katzy & Sung, 2001; Antoniac et al., 2004; Kristensen et al., 2004; Rupp, 2004). New methods, routines and organisational processes that integrate collaborating people and organisations working in distributed
projects are required to cope with the emerging challenges such as increasing collaboration dynamics and real time communication (Wognum and Faber 1999).

Evaristo & Fenema (1999) state that different management approaches are critical for the successful completion of distributed projects. Above all, these management approaches have to be agreed on before the project itself starts, exploring the possible alternatives and addressing the differences in communication and coordinating resources which present a challenge especially considering that nowadays distributed projects are more complex and are more likely to involve stakeholders from multiple cultures. It is this last statement that makes distributed project management so important because with the expansion of the activities of multi-national organisations to foreign markets, either to expand market share or to produce their goods or to provide services from those locations, will inevitably result in a clash of people with several cultural backgrounds working towards a common goal (House, 2004; Dvir et al., 2006; Lucas, 2006; Tsui et al., 2007).

3.6 Planning and control practices

At the heart of the discipline of project management, practices, systems and methods are used to integrate, predict, plan and control projects. All the phases of the project and all its elements have to be logically linked together and the information has to flow without obstacles so that all the components of the project are integrated together. Also, system forecasts based on current plans, estimates and physical progress will help to predict the outcomes of the project and help to constantly update budgets and schedules so they can be compared with the ones originally approved. The use of new technologies (such as the Internet, video conferencing, etc), along with a better understanding of how projects have to be managed and how project management has to be closely linked to the people working on the project, present an opportunity to capitalise on these advances.

Organisations can plan and control every project taking into account its life cycle, applying the methods, systems and tools that are available for these organisations today (Eom & Kim, 2006). However, these methods, systems and tools have to include all the functional areas of the organisation (or organisations) which are involved throughout each of the phases of the project life cycle and also include all the elements of information which are required including resources allocation and information
regarding schedules and budgets in order to maintain a perfectly controlled and informed project (Archibald, 2004).

In 1999, the Project Management Institute (PMI) conducted the “PMI Project Management Software Survey” and found that software applications as well as software suites now cover the six individual areas of knowledge of the Project Management Body of Knowledge (PMBOK). Table 3.1 shows a summary of these applications.

<table>
<thead>
<tr>
<th>PMBOK Guide Knowledge areas</th>
<th>Project management software categories</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration management</td>
<td>Process scope/management</td>
<td>19</td>
</tr>
<tr>
<td>Time management</td>
<td>Schedule management</td>
<td>43</td>
</tr>
<tr>
<td>Cost management</td>
<td>Cost management</td>
<td>27</td>
</tr>
<tr>
<td>Human resources management</td>
<td>Resource management</td>
<td>27</td>
</tr>
<tr>
<td>Risk management</td>
<td>Risk management and assessment</td>
<td>15</td>
</tr>
<tr>
<td>Communications management</td>
<td>Communications management</td>
<td>17</td>
</tr>
<tr>
<td>All</td>
<td>PM suites</td>
<td>36</td>
</tr>
</tbody>
</table>

Table 3.1 PMBOK areas of knowledge and related software categories (PMI, 1999)

From Table 3.1 it is evident that software applications regarding schedule management represent the majority of tools available for project managers. During the evolution of the project management profession the importance of maintaining tight control of the schedules and timetables in order to ensure project success has been emphasised (Baker et al., 1988; Dvir et al., 1998; Henry et al., 2007). Budget and human resources control are areas of the PMBOK which are also covered by software applications as these two are areas which have been highly regarded as critical for the achievement of project success. Software applications covering areas of the project management profession such as risk and communications management, which have started to be regarded as critical for project success, have been increasing in numbers as well as applications regarding the integration of projects (McDonald, 2001). Finally, project management suites integrating all the above-mentioned areas are also available such that all the different areas of the PMBOK are covered under one single application which facilitates its use and the management of the project as a whole. Although Table 3.1 shows the PMBOK areas and their related software categories, it is important to note that there is no area linking projects with culture.

Nowadays, organisations can use project management software which has been developed to run over the internet which can provide geographically disperse locations with real-time information and which can link all the projects (or portfolio of projects)
and present actualised information regarding the status of the project; so the senior management can take strategic decisions or correct any possible deviation to the plans with a minimum delay (Pyster & Thayer, 2005; Sutherland et al., 2006). Web-enabled project management presents advantages over other project management tools as the information in the repository is available 24/7 (Barry & Pascale, 1999), providing project teams with the ability of updating and exchanging information regardless of their geographical location. It also improves the control of the project baseline, the reporting capabilities and it helps to create virtual teams composed of people located in geographically disperse locations. In most cases, web-enabled project management applications provide the opportunity of reacting to changes in risk, cost, schedules and other factors in a more expeditious way and therefore, enhancing the ability to detect and cash-in opportunities for improving cost, budget expenditures and schedules (Graham & Englund, 1997).

3.7 Conclusion

Although the field of project management is still evolving, many of the areas comprising it have shown a steady growth during the past decades. Researchers have enhanced and expanded the knowledge within these areas. As organisations, projects and teams evolve and become bigger and more complex, new fields of research appear in the field of project management. Techniques such as PERT and CPM have shown their value in countless projects and due to their continued use, research and experience, their elements are well defined and specified. Since the late 1990s, researchers have started to address the findings of other areas of knowledge and incorporate them into the project management field. Leadership, communication, human resource management, decision making and other areas related to organisational behaviour and psychology were integrated into the personnel management and communication elements of project management. The integration of these elements to project management techniques, methodologies and tools helped project managers and teams to ensure project success as it allowed project managers to take into account variables which were not considered in the past.

As techniques such as CPM were used and developed over time, researchers and practitioners had the opportunity to enhance it and improve it. The result of this improvement was the development of Critical Chain Project Management which addressed the downsides of the critical path methodology and which the project
management community has steadily started to adopt. Projects managed following this methodology have already demonstrated its viability and advantages.

As organisations adopt new techniques, tools and methodologies to guarantee project success and the correct use of resources, senior managers have to ensure that the strategic goals of the organisation are aligned with the projects the organisation is undertaking. At the same time these projects follow an organisation-vetted approach. Project management maturity models help the organisation to achieve project success at an organisational scale, from the point of view of the status of the organisation, its goals, growth needs and future plans while at the same time the organisations can keep such plans aligned with those of their partners or gaining a competitive advantage versus those of their competitors.

The growing pressures of the globalised economy have driven organisations to look for new markets or to relocate their operational facilities abroad with the consequent change in their project management methods and in the outlook the people working within these organisations have regarding their jobs. Large projects, such as the building of new aircraft or the production of industrial goods require clearly defined project management methodologies which tie together all the loose elements present in the project but also require the ability to align such elements with the people working in the project. As mentioned before, researchers and practitioners have realised that the human element of the project has large implications regarding the success of projects. When projects involve geographically disperse teams, the element of culture is added to the already complex environment of the project. The topic of culture is discussed in the next Chapter.
Chapter 4  Cultural considerations

4.1 Introduction

Hodgson & Cicmil (2006) argue that the project management profession should undertake a richer and broader approach to research and a re-assessment of the foundations for project management. They point out that since the 1960s project management has followed a systems or functionalist approach, attempting only to improve the processes and not conducting research “that contributes to society’s capacity for value-rational deliberation and action” (Flyvbjerg 2001 pp12), or as the authors say, to make social science matter in the context of project management.

Unfortunately, the cross-cultural aspects of managing projects are only briefly mentioned in a small section of the PMBOK (PMI 2005 pp14), where it indicates that: “The Project team should consider the project in its cultural, social, international, political and physical contexts.” In the literature, the topic of culture is addressed in books and articles on International Project Management. A search at Amazon.com for International Project Management yielded eleven books (only three on the subject), whereas a search for Project Management yielded over 2,600 books. One of the three books on international project management by Lientz & Rea (1999) dedicates over 70 pages of a 277-page book to the issues of culture, such as the relationships between project team members, cultural interaction between project stakeholders, incompatible culture between country and project and language barriers.

The PMI and the International Project Management Association (IPMA) both publish theoretical journals for topics related to project management. Adding a different context to this discussion, searches of the PMI Journal of Project Management and the IPMA International Journal of Project Management articles were performed for the period of 1995 through 2005. The search used the EBSCO and Science Direct database default function (searches the title, abstract and keywords). Over the 10-year period less than 10% of the articles dealt with the issues of culture and/or leadership and none with cross-cultural leadership. These are all of the articles that mention the term culture. If the search is amended to seek the author-supplied keyword leadership, for example, the total falls from 11 articles to four. Suffice to say that there is not a surplus of research or publication on cross-cultural leadership targeted to the project management profession.
This scarcity of literature, coupled with the understanding of the importance of cross-cultural skills in delivering successful projects are the driving forces behind this thesis and more importantly, as mentioned in Chapter 1, the Mexican government is opening up the energy sector to foreign investment which is more than likely to attract companies from all over the world. These companies will bring capital investment and, at the same time, will bring the culture of the countries where their employees are from and the culture of the organisation itself, which is shaped by the interactions of their employees.

This Chapter presents an assessment of relevant literature concerning cultural theory and the national cultures of Mexico and the United Kingdom. Section 4.2 provides a definition of culture from diverse fields of research, showing how this concept has evolved over time and how the background of the researchers providing these definitions impacts on the way culture is described and how it is divided into several levels. Section 4.3 presents the evolution of research in the field of national culture from the early 1960s to 2005 and Section 4.4 presents the determinants of national culture and the models defining its dimensions. This section also presents a review of the most accepted models addressing national culture which help to establish the basis for a comparison between Mexico and the United Kingdom.

4.2 Culture

Culture is inside people and it is transparent to us. It affects everything we do, from the way the world is perceived and people interact with it to the way we relate to one another, the way we cope with our lives and the way we resolve conflicting interests. It is passed on to us through institutions and traditions, political and social organisations, language, technology and the arts. Alasuutari (1995) points out that “our culture is the theatre in which we play out our lives and it is embedded in the synaptic connections in our brains showing that it is a major part of who we are.” Culture is a basic attribute of society, a familiar concept and at the same time it is difficult to define. It is the subject of prodigious research and millions of words by insightful and expressive people, it has many aspects and exhibits itself in many ways (Seale, 2000). Any short definition does not capture the complex concepts suggested by the word (Smircich, 1983). Culture exists at multiple layers in a society. It can be regional, national, societal, ethnic, organisational or group (Nord, 1972; Schein, 1990). For an individual, the interaction between various levels of culture (sub-cultures) could result in conflict if the norms of
each particular plane collide (Schein, 1992). To further explain these interactions, what culture encompasses is explained below.

4.2.1 What is culture?

Numerous definitions of culture exist and they vary depending on the field of study of the researcher providing the definition. Academics and researchers have long tried to understand its nature and influence on human activity and to understand its relevance within a working or organisational context. This means that the interpretation of culture is itself culturally biased and any attempt to clarify the concept requires great sensitivity.

Researchers in the field of anthropology such as Hall (1960), Kluckhohn & Strodbeck (1961) and Hall & Hall (1990) agree on the general idea that culture is acquired through experience and passed on in time and, at the same time, they have made clear that defining culture as a whole can trigger a myriad of problems as each academic has a different opinion about how it should be defined (Geertz, 1993) but at the same time they have agreed that culture and its understanding varies depending on the field of origin of the researcher (Grieves, 2000). Rather than trying to encase the meaning of culture into one single definition, it makes more sense and adds more value to look at various attempts by specialists in the area and to compare particular and recurrent elements from their definitions, as some researchers focus on cognitive aspects of culture while others concentrate on the behavioural side.

American anthropologist and social theorist Clyde Kluckhohn stated that: “culture consists in patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols, constituting the distinctive achievements of human groups, including their embodiments and artefacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values.” (Kluckhohn, 1951) For Inkeles (1964) culture is: “the grand total of all the objects, ideas, knowledge, ways of doing things, habits, values, and attitudes which each generation in a society passes on to the next.” Sociologists Broom & Selznick (1968) define culture as “the social heritage, all the knowledge, beliefs, customs, and skills that are available to members of a society.” Harris (1980) points out that “culture refers to the learned repertory of thoughts and actions exhibited by members of social groups –
repertories transmissible independently of genetic heredity from one culture to the next.”

Culture encompasses behavioural patterns transmitted over time to a community which is relatively stable and has a deep influence on all aspects of human behaviour (Craig & Douglas, 2006), evolving as forces such as economic, technological, political and social exert an influence on it. Individuals and groups carry their own culture and its elements react with the surrounding environment at all levels (Collis, 1999) therefore being transformed by global forces, becoming a set of complex ongoing phenomena and the importance of culture resides precisely in the fact that it permeates all levels of human activity, from trivial and day-to-day relationships and problems to complex and universal ones, which are determined by the extent to which people share values, beliefs and norms. From these statements it is evident that culture emerges as a collective phenomenon large enough to be self-sustaining and to produce new generations of members which share a set of values governing (or at least influencing) the way they think and behave and which is passed on to new generations.

Culture is clearly not limited to nationality as is often implied and as Collis (1999) argues, culture appears at several levels, such as national/society, organisational, group, individual and disciple/domain and individuals can branch from membership in several levels. Each one of these levels has different elements and characteristics, some of them common and others specific to the given level, in some cases overlapping with several levels and therefore, individuals from different backgrounds can share some elements while at the same time, other characteristics can be totally opposite (Peterson & Anand, 2004). This implies that individuals do not belong to one single culture but to several, such as national, regional, industry, organisational, functional and professional cultures (Chanchani & Theivanathampillai, 2002). The elements comprised in national and organisational cultures are of great importance to this research as it focuses on organisations in Mexico and the United Kingdom which are likely to present important differences and therefore, the description of such differences has to be addressed following previously tested models evaluating national and organisational culture (De Witte & Van Muijen, 1999; Swift, 1999).
4.3 National Culture

Over the years, researchers have been trying to develop the concept of national culture. Some were focused into clustering different nationalities but the added value of such an approach is not enough to consider their contribution as they are considered to merely associate geographical location with cultural proximity. In the context of this research, establishing what national culture is, what are its measurable characteristics and determinants is important as it will provide the basis for describing and comparing the national cultures of Mexico and the United Kingdom.

Triandis (1994) states that culture involves a “set of human-made objective and subjective elements that in the past have increased the probability of survival and resulted in satisfaction of the participants in an ecological niche, and thus became shared among those who could communicate with each other because they had a common language and lived in the same time and place.” Although culture is complex and difficult to define, the theories about national culture that have been researched over the last few decades are focused mostly on the values attached to national culture therefore defining national culture by identifying its elements. The importance of defining the models of national culture resides in the fact that this research is focused on organisations based in Mexico and the United Kingdom thus making it important to establish comparative measures to understand what are the main differences between the cultures of these countries. In order to achieve this, the theoretical models of national culture are discussed below.

4.3.1 Theoretical models of national culture

Authors such as Kluckhohn & Strodtbeck (1961), Hofstede (1980a; 1980b; 1990), Hall & Hall (1990), Trompenaars (1997), House et al. (1999; 2004) and Triandis (1995; 2002) are some of the individuals who have developed models to measure and understand the values attached to national culture. Their models go several steps further away from the plain clustering and categorising national culture according to several dimensions and have been used in attempts to describe different national cultures and the differences between national cultures. These models have evolved over time, sometimes addressing gaps in previous models sometimes expanding the understanding of previously defined concepts and even though it appeared as if these models were repeating themselves and their characteristics, orientations, dimensions or elements they were just different names given to the same thing.
The importance of these models resides in the fact that they provide a structured approach to understand and compare different cultures. In the setting of this particular research, these models are important as they provide valuable insights to understand the differences between Mexico and the United Kingdom in terms of the views of the people living in these countries towards their culture and how they regard themselves in relation to their own culture. It is true that there are several models to describe and analyse national cultures, however, the models presented below are the most accepted and commonly used in academic fields.

In order to provide a better understanding of cultural theories since their inception, their evolution will be explained in the following sections within a time frame.

### 4.3.2 Cultural theory from 1955 to 2005

The importance of the field of culture within project management was addressed for the first time in 1955 when Margaret Mead, a well-known anthropologist and contributor of the United Nations, edited a book addressing the effects of technological change on indigenous peoples from a long-term mental health perspective (Mead, 1955b) while working with the United Nations Educational, Scientific and Cultural Organisation (UNESCO). She introduced the topic by establishing a connection between the habits and practices of parents and children and the systematic application of those principles and practices in the employer/employee relationship, the speaker/audience relationship, the teacher/pupil relationship, etc.

The definition of culture provided by Mead (1955b) suits the discussion of universal culture as it provides the versatility required to address intra/inter cultures, organisations, or groups. She said that culture was: “...a body of learned behaviour which a group of people who share the same tradition transmit entire to their children and, in part, to adult immigrants who become members of the society. It covers not only the arts and sciences, religions and philosophies...but also the system of technology, the political practices, the small intimate habits of daily life...as well as the method of electing a prime minister.” (Mead, 1955a)

Darlington (1996) also quotes a definition of culture by Margaret Mead (1955a): “a body of learned behaviour, a collection of beliefs, habits and traditions, shared by a group of people and successively learned by people who enter the society.” This
definition is one of the most relevant in terms of this thesis as it not only covers the conventional societal meaning of culture but it also covers the use of culture in a corporate and organisational sense.

The starting place for a review of culture is naturally with Hofstede (1980a) who performed his original study in 1968 and a subsequent one in 1972. Hofstede (1980a) begins his work by defining culture as: “the collective programming of the mind; it manifest itself not only in values, but in more superficial ways: in symbols (metaphors), heroes and rituals.” Hofstede (1980a) sees culture from the national cultural perspective although he discusses organisational cultures in one chapter. Hofstede (1980a) states that values and culture are the key constructs for work, pointing at the anthropological definition of value by Kluckhohn (1967): “a value is a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influenced the selection from available models, means and ends of action.” Hofstede (1998) emphasises that there is an important distinction between desired (what people want) and desirable (what people should want) values. In the GLOBE (Global Leadership and Organisational Behaviour Effectiveness) study described later in this Chapter, the researchers actually measured this in the questionnaires that were utilised. Hofstede believes that culture cannot be understood without the study of history.

The conclusions reached by Hofstede (1980a; 1997; 1998) were validated and described following five well-known dimensions:

Power Distance – the extent to which the less powerful members of organisations and institutions accept and expect power is distributed unequally or the degree of inequality (power). Hofstede provides a Power Distance Index (PDI) that describes examples of the differences between countries with high and low PDIs: In the family – Low PDI parents treat children as equals; High PDI parents teach children obedience. In the work organisation – Low PDI decentralised authority, flatter organisations; High PDI centralised authority, more vertical structure.

Uncertainty Avoidance - the extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. People try to control the uncontrollable and that they are also resistance to change (trust) and, as Hofstede states, the reason for this is that people do not trust new situations to which they do not now
the outcome. Hofstede provides an Uncertainty Avoidance Index (UAI) that describes examples of the differences between countries with high and low UAI: For trust – Low UAI most people can be trusted, less resistance to change. High is the opposite. Stress - Low UAI low anxiety, emotions controlled. High is the opposite.

Individualism or Collectivism – the degree to which individuals are supposed to look after themselves or remain integrated into groups, usually around the family (empathy, power). Hofstede provides a Individualism Index (IDV) that describes examples of the differences between countries with high and low IDVs: In the family – Low IDV strong family ties, no one alone; High IDV is the opposite. Personality and behaviour – Low IDV avoid confrontation, other directed behaviour; High IDV is the opposite.

Masculinity-Femininity – the distribution of emotional roles between the genders - tough masculine to tender feminine. Hofstede provides a Masculinity Index (MAS) that describes examples of the differences between countries with high and low MASs: In the family – Low MAS weak gender differentiation, positive feelings about home and family; High IDV is the opposite.

Long-Short Term Orientation – extent to which a culture programs its members to accept delayed gratification of their material, social and emotional needs (transformation, empathy). Hofstede provides a Long Term Orientation Index (LTO) that describes examples of the differences between countries with high and low LTOs: In the family – Low LTO children learn tolerance and respect for others, less satisfied with daily human relations; High LTO children should learn the truth and daily human relations are rewarding.
Figure 4.1 Cultural Dimensions (Hofstede, 1997)

Figure 4.1 displays the information from the IBM survey (Hofstede, 1980a) in a different format from that provided by the author. During this survey, Hofstede applied questionnaires to 66 national branches of International Business Machines (IBM) all over the world, covering around 117,000 employees. Each employee was asked to give a value to a number of work related values and from these answers Hofstede found patterns which led them to develop his cultural model (Hofstede, 1980a). As shown in Figure 4.1, there are significant ranges on each of the dimensions with average scores of over 50 on Uncertainty/Avoidance and Power Distance. On the other dimensions, the average scores were 43.43 for Individualism & Collectivism, 48.84 for Masculinity/Femininity and 40.50 for Long/Short Term Orientation. On the high end of the scale, all of the dimensions are at or above 100. The findings of this survey showed that the so-called “dimensions” found during the survey were an important tool to understand the core values of the people who answered the survey, therefore allowing Hofstede to create a model which could be replicated to measure cultural values in other organisations or countries. Also, the apparent simplicity of the model and its concepts allowed it to be adopted and tested in several cultural studies all over the world. Although these cultural dimensions were not used during this study, their importance resides in the fact that the research of Hofstede is pivotal to start comprehending the importance of culture in projects.
One interesting survey by Cottle (1967) explored the concept of long term orientation studied by Hofstede. Cottle (1967) asked people to draw their concept of time using circles for past, present and future. People were instructed to draw the size of the circles in proportion to the importance of past, present and future. People were also asked to draw the circles in such a way as to show the overlap, if any, between past, present and future. Figure 4.2 shows the results and the marked differences between how different cultures envision time.

Although Cottle (Cottle, 1967) did not specifically address Mexico and the United Kingdom in his research, Figure 4.2 shows two countries which closely relate to them: Venezuela, with a high perception of its past, a medium perception of its present and a small perception of its future and all three as separate elements, while the UK can be likened to that of France, a high perception of its past, a medium perception of its present and a smaller perception of its future, but all interconnected forming a single element.

Hall (1992) writes about intercultural relations from the perspective of time and its explicit and tacit aspects, arguing that within cultures the ability to display polychronic (preferring to schedule multiple tasks at the same time) and monochronic (a personality type preferring to schedule a particular time for a certain task) attitudes exists. He uses the example of the French who are monochronic intellectually but polychronic in behaviour. Hall notes that in cultures that keep the past alive (Asian for example) there
is less stress because their concept of time is slower (due to the influence of history) and therefore they are less at odds with the chronometers used in the West.

Hall (1992) also discusses time and the rhythm of life by saying that the more perfect the rhythm, the easier it is for another person to perceive our intentions. In this study, rhythm is considered a part of empathy, for it requires a party to find a common understanding of (in this case) a musical beat. The musical beat being a commonly understood vibration, rather than a commonly understood idea. Similar to the idea proposed by Schein (1990; 1992) that follows.

Schein (1990; 1992) provides a view of cultures, that begins with assumptions and progresses to the actual artefacts of the culture. Also, this view relates to the process of knowledge transfer. In this process, the higher the level of intensity of the culture transfer the more the individual uses its own assumptions to explain the artefacts and values present in the transfer. However, the final understanding of culture depends on the extent of motivation, the degree of credibility and the encouragement to innovate and challenge the status quo (Schein, 1990), as shown in Figure 4.3. Schein (1990) also reviewed several empirical studies using attitudinal data to cluster countries as a field of inquiry on comparative management: Haire et al. (1966); Sirota & Greenwood (1971); Ronen & Kraut (1977); Hofstede (1980a; 1997); Badawy (1979) and Griffet et al. (1980). Their discussion critiques the clustering approach while at the same time dwells in country clusters and their underlying dimensions, purpose and implications. Schein (1990) grouped the clusters into Nordic, Latin Europe, Latin America, Far East, Arabic and Independents. These groupings are very similar to those used in the GLOBE survey which will be discussed further in this Chapter. The authors point to the lack of studies in Africa and the ex-Soviet Union and the need of more results in the Middle and Far East.
As Figure 4.3 shows, the knowledge transfer from person to person has several levels, and the deeper this transference is, the more subjective it becomes as it is based on the shared level of cultural intensity. First, people can share artefacts, about which people share a common understanding. However, to understand the values of other people, one requires a deeper knowledge and understanding of the culture of those individuals. Finally, to share assumptions, individuals should be part of the same culture, as assumptions are based on the deepest levels of cultural intensity (Schein, 1996).

Hall & Hall (1990) describe another approach to understand cultures through effective communications. They describe culture as communication because it is comprised of words, material things and behaviours. The authors say that the essence of cross-cultural communications has more to do with releasing the right responses than with sending the right messages. Hall & Hall (1990) argue that cross cultural communications are defined by eight characteristics: fast and slow messages, high and low context, space, time as communication, information flow, action chains, interfacing and releasing the right responses. These characteristics are described in more detail below:

Fast and Slow Messages – consideration of the medium such as written, TV, spoken, etc. (communication).

High and Low Context – high context cultures such as the Japanese that rely heavily upon relationships, compared with Americans who rely upon contracts (high = rich) (communication) (Hall & Hall, 1990).

Space – territorial, personal and multi-sensory give tone to communications (Hall & Hall, 1990).
Time as Communication – monochronic one thing at a time (i.e. America) and polychronic many things at once (i.e. Arabic countries). The authors also include the concepts of past, present and future in this consideration. They also address the issues of being in rhythm with the culture and the issues of appointments and proper timing for communications (Hall & Hall, 1990).

Information Flow – fast or slow and where does it go or the breadth and speed of communications (Hall & Hall, 1990).

Action Chains – the chain of individuals and actions that are required to achieve a goal. The authors suggest that monochromic/low-context cultures are sensitive to interruptions and are more vulnerable to breaking action chains (Hall & Hall, 1990).

Interfacing – the greater the context, complexity, cultural distance and number of levels in the system, the greater the interface problems and need for human talent (Hall & Hall, 1990).

Releasing the Right Responses – knowing the degree of information required and using the right cultural interpreter (Hall & Hall, 1990).

Enhassi & Burgess (1990) discuss cultural theory and establish that it is difficult to conclude which variables have the greatest effect on managerial behaviour. They argue that general cultural training is essential to permeate the learning habits in managers required to understand other cultures, calling for cultural training in religion, values and attitudes, tradition and language concluding that construction organisations should provide cultural training if they are to be successful. Enhassi & Burgess (1990) do not address the use of metaphors to transfer the knowledge (how to do it) but rather that the knowledge must be communicated (what to do).

Arruda & Hickson (1996) address the features of management and organisation which are most affected by culture. The authors state that the approach they followed was underpinned by the work of Tayeb (1988; 1994) as she addresses the importance of establishing what the differences are between organisational and national culture and how these differences impact the way culture is perceived within the workplace. Arruda & Hickson (1996) found that interpersonal and philosophical issues are the most susceptible to cultural variation and that their importance is based on the approach
organisations follow when dealing with multiple cultures within the workplace. Interpersonal issues are the societal norms, patterns and processes that are unique to each culture while the philosophic issues, or values, are sometimes more challenging as they depend heavily on the perspective and moral fibre of individuals.

Darlington (1996) provides a comparison of the methodology used by different authors to study culture in the period of 1961 to 1994 as shown in Table 4.1. This table illustrates the variety of approaches taken to the study of culture. Even though the approach to study culture is inherently linked to the formative field of study of the individual conducting the research, Darlington (1996) managed to provide a thorough classification showing how researchers addressed the topic of culture and its evolution from 1980 to 1995. The research of Darlington (1996) provided this study with the basis of the development of cultural theory and its evolution towards the explanation of national and organisational cultures.

Finally, Darlington (1996) indicates that there are over 160 definitions of culture (Kroeber & Kluckhohn, 1952), stating that various writers have largely validated the work of Hofstede especially the Power Distance and Individualism indices pointing out that the work of Hofstede has also been validated by the research of Hoppe (1990; 1993).
<table>
<thead>
<tr>
<th>Researchers</th>
<th>Perspective</th>
<th>Methodology</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonthous, (1994)</td>
<td>Types of intelligence system</td>
<td>Comparative analysis of preferred styles</td>
<td>Need to develop a balance of all styles to avoid an organisational learning disability</td>
</tr>
<tr>
<td>Lane &amp; DiStefano, (1992)</td>
<td>Differences in value orientation</td>
<td>Case studies / Literature review</td>
<td>Profile of effective global executives</td>
</tr>
<tr>
<td>Hampden-Turner &amp; Trompenaars, (1993)</td>
<td>Behaviour</td>
<td>Dilemmatics</td>
<td>Seven cultures of Capitalism - different sustainability</td>
</tr>
<tr>
<td>Heller &amp; Wilpert, (1981)</td>
<td>Participation in Decision Making</td>
<td>IPC Questionnaire</td>
<td>Five methods of decision making and power displacement effect</td>
</tr>
<tr>
<td>Hofstede (1980a; 1997; 1998)</td>
<td>Differences in behaviour</td>
<td>Work related value survey</td>
<td>Distinct national cultures</td>
</tr>
<tr>
<td>Laurent, (1983)</td>
<td>Implicit theories of managers</td>
<td>Questionnaire survey</td>
<td>Country clusters of implicit theory, e.g. organisations as authority systems</td>
</tr>
<tr>
<td>Lessem &amp; Neubauer, (1994)</td>
<td>Multiple levels of difference based on philosophies</td>
<td>Comparative surveys of art, religion, literature, philosophy and societal constructs</td>
<td>Four diverse management systems form a basis for European unity</td>
</tr>
<tr>
<td>Maznevski, (1994)</td>
<td>Differences in value orientation</td>
<td>Value orientations, training, intervention with performance assessment</td>
<td>Proposed model of synergistic integration</td>
</tr>
<tr>
<td>Said (1993; 1995)</td>
<td>National literature, textual style and content</td>
<td>Comparative analysis</td>
<td>Appreciate the differences and recognise we make culture a part of self-organising process</td>
</tr>
<tr>
<td>Tayeb (1988; 1994)</td>
<td>National and corporate attitude surveys</td>
<td>Literature, cultural and work reviews</td>
<td>Proposed model of causal culture</td>
</tr>
<tr>
<td>Trompenaars (1984)</td>
<td>Differences in behaviour</td>
<td>Value orientations</td>
<td>Distinct national cultures</td>
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Table 4.1 Cultural Researcher Matrix
(Darlington, 1996)
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<tr>
<td>Human nature</td>
<td>Good, evil, neutral, mixed, changeable, unchangeable</td>
<td>Agreements</td>
<td>Uncertainty avoidance index</td>
<td>Universalism &amp; particularism</td>
<td>Universalism &amp; particularism</td>
<td>Good / evil: changeable</td>
</tr>
<tr>
<td>Relation to nature</td>
<td>Subjugation, harmony, mastery</td>
<td>Uncertainty avoidance index</td>
<td>Internal / external orientation</td>
<td>Inner / outer directed</td>
<td>Subjugation, harmony, mastery</td>
<td></td>
</tr>
<tr>
<td>Activity orientation</td>
<td>Doing, being, being in becoming</td>
<td>Monochronic, polychronic (interacts with individualism)</td>
<td>Masculinity index</td>
<td>Achievement / ascription</td>
<td>Masculinity index, ascription, analysing</td>
<td>Doing, being, containing and controlling (thinking)</td>
</tr>
<tr>
<td>Human Relationships</td>
<td>Individual, collective, hierarchical</td>
<td>Amount of space, possessions, friendship, communication</td>
<td>Power distance index, individualism index, affective</td>
<td>Equality, hierarchy, individualism, collectivism</td>
<td>Equality, hierarchy, individualism, collectivism</td>
<td>Individual, collective, hierarchical</td>
</tr>
<tr>
<td>Relation to Time</td>
<td>Past, Present, Future</td>
<td>Past, Future</td>
<td>Long term</td>
<td>Sequential, synchronic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Space Orientation</td>
<td>Public, Private, Mixed</td>
<td>Public, Private</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2 Comparison of Cultural Dimensions
Table 4.2 shows a matrix that compares various authors across cultural aspects that were defined by Darlington (1996) e.g. human nature. Most of the authors displayed agree on the aspects of time but present different opinions regarding issues such as human nature (categorised by Darlington). This comparison is important as it provides a visual approach to understand how the dimensions followed to explain culture have evolved in time. Bonthous (1993) argues that these dimensions can be further expanded with another five. Although these researchers have shown that culture is not an easy subject, the fact that over time different individuals have reached similar conclusions following different approaches. Table 4.2 shows how, for example, in the case of activity orientation all researchers developed a dimension trying to describe this interaction between people, although some of them named it in a different way. The case of human relationships also shows this issue as all the researchers in the table developed a dimension which tries to explain it, even if the elements measuring this dimension are different in number or approach.

Hampden-Turner & Trompenaars (1993) provided a view of South Asia, (described as ships that pass in the night) used to portray the differences and similarities between Western and Asian managers. The idea that they describe is that cultures have built-in benchmarks that people utilise in culturally automatic ways effectively translating into warning about the pitfalls of stereotyping.

Hofstede (1997) describes habits as a system of permanent and transferable dispositions and uses the work of Hoppe (1990) relating to Europeans to support his five cultural dimensions. Hofstede (1997) indicates that most Western Europeans cannot understand the daily fight for survival that took place in Eastern Europe. He points that “one of the most characteristic features of the soul that has been tortured by fear and feelings of insecurity in major historical trauma and injuries is...in this state of mind the individual loses his sense of moral obligations and responsibilities to the community.” (Hofstede, 1997) Hofstede states that the potential for suspension of values during times of trauma is one of the major cultural considerations and, for project managers this point proves to be an important consideration during times of change and turmoil. Hofstede also adds the fifth dimension, long-short term orientation to his cultural model.

Leeds (1997) bases his research on the work of Hofstede (1997) and that of Lessem & Neubauer (1994) as they state that the four core values people identified were
pragmatism, rationalism, holism and humanism in their surveys of European management styles which were originally addressed by Carl Jung and Myers Briggs.

Ralston et al. (1995) emphasised the fact that the work of Hofstede (1997) was based upon the western model and also state that Chinese Culture Connection (Hofstede & Bond, 1988) which designed a questionnaire based upon traditional Chinese sayings, which was then translated into different languages and given in 22 countries. The findings confirmed the dimensions proposed by Hofstede & Bond (1988) regarding power distance, individualism-collectivism and masculinity-femininity but the findings did not affirm the uncertainty avoidance dimension. The surveys also identified the added dimension of Confucian work dynamism which is a combination of deference, thrift, loyalty and long-term commitment. Ralston et al. (1995) also point out that subcultures are an important consideration. Within countries such as Russia, China and India there are numerous languages, religions, value systems and social customs and, when translated to a multinational company, it is not difficult to see the parallels of having numerous societal, political and religious cultures and such differences can be seen in countries smaller than the above mentioned ones (Spain for example) (Triandis, 1994; Zeffane & Rugimbana, 1995).

Earley & Erez (1997) edited a book exploring global cultural issues from the psychological perspective, including detailed psychological perspectives on culture, motivation, power and cross-cultural theory. Earley & Erez (1997) describe four major types of motivational practices that managers utilise across cultures: Reward allocation, guided by equity, equality and the principle of need, to each according to need (empathy), participation in goal setting and decision making (power, transformation), job and organisational design (power, transformation) and quality improvement (communication).
Gibson (1997) discusses issues surrounding communications across cultures. She begins by separating the process into five steps as shown in Figure 4.4. These steps are Encoding, Decoding, Transmission, Feedback and Receiving. The author argues that intercultural differences in communications occur due to differences in cognitive styles (methods) and cultural values (particularly the masculinity-femininity, individualism-collectivism and power distance dimensions developed by Hofstede). Gibson (1997) describes the processes and features as follows:

Encoding

Source – internal or external. Individualistic cultures will tend to rely on internal, collectivistic cultures external.

Content – emotional or rational. Collectivistic cultures emotional, individualistic cultures rational.

Style – Implicit or explicit. Collectivistic cultures use implicit, individualistic use explicit.

Transmission

Pattern – high context or low context. High context tend to use multiple patterns and methods.

Channel – formal or informal. High Power distance cultures use formal channels.
Receiving

Active listening – Listening without judgment and without filters.

Listening for Ideas – Help overcome collectivistic/individualistic or high context/low context hurdles for example.

Decoding

Framing – the ability to empathise with the sender.

Feedback

Following-up – Rapidly repeating the sender’s message.

Figure 4.4 shows that just as an individual encodes source, content and style, these elements are transmitted following a pattern and a channel. This individual (transmitter) also adds its own cultural filters and noise. The individual receiving the information (receptor), takes the framed (encoded) message and decodes it through active listening and, at the same time, follows-up its own ideas to provide feedback to the transmitter and continue the communication process (Gibson, 1997). The importance of this process is that it can be translated from individuals to cultures, because individuals reflect their cultures in the way they communicate (Risberg, 1997; Darling & Fogliasso, 1999).

House et al. (1997) provided a thorough and lengthy review of the cross-cultural leadership studies performed since 1989. The authors quote Hofstede & Bond (1988) as saying “both power distance and individualism (transformation) affect the type of leadership likely to be effective in a country. The ideal leader in a culture in which power distances are small would be a resourceful democrat; on the other hand, the ideal leader in a culture in which power distances are large is a benevolent autocrat (or “good father”). In collectivistic cultures, project managers should respect and encourage employees’ group loyalties; incentives should be given collectively and their distribution should be left up to the group.”
House et al. (1997) state that there are some near universal propositions for project managers in culturally diverse environments arguing that the three of its components (charisma, intellectual stimulation of followers and individualised consideration toward followers) are more effective than contingent rewards and therefore, should be taken into account. The authors also suggest a technique called unobtrusive measures to help in reducing bias. In this technique questions are asked of people who may not be able to sense the underlying meaning – for example if intolerance of uncertainty were the aspect to be studied then the question to be asked could be the mean age of the executive managers.

Such a technique was followed in an extremely large political science study. Inglehart (1997) describes the results of the World Values Survey that was conducted in 43 countries that represented (at the time) nearly 70% of the world’s population. The design of the surveys considered the theory of intergenerational value change. Inglehart (1997) argues that economic development, cultural change and political change go together in somewhat predictable patterns or the Marxian view against the view that culture shapes economic and political life.

Figure 4.5 provides one view of the massive data accumulated and analysed. This figure plots traditional versus secular-rational authority on the vertical scale, survival versus well-being on the horizontal scale. It also shows the rich and poor country extremes. In another dimension, Figure 4.5 shows the changes in the variables between 1981 and 1990 (the numbers shown in the figure under the name of the country) for a number of countries, thus indicating that cultures fluctuate over time, economically. For example, note South Korea in 1981 near the centre of the chart and the arrow showing the change in position in 1990. The vertical scale, showing the type of authority illustrates that the lower the value in the scale, the more traditional the authority of the country is. In the case of the ex-communist republics, the chart shows that in the case of Russia in the 90’s, the authority is regarded as one of the more secular-rational ones. The horizontal scale, measuring the survival and well-being shows that the lower the value in the scale, the more a country is fighting for survival. Therefore, the higher a country scores in both scales, the richer the country is in terms of authority and well-being. The case of the countries of Northern Europe shows that they have the highest scores, hence being in a state of well being, which, along with a high value on the secular-rational authority, places them in the area of rich countries (Inglehart, 1997).
Inglehart (1997) also adds the countries into clusters (e.g. Catholic Europe, English speaking) implying historical connections that have not changed significantly, such as conditions in East Germany, whereas there has been a movement away from traditional authority in West Germany. From Figure 4.5, it is possible to see that from 1981 to 1990, Mexico has moved towards the secular and rational type of authority while at the same time has moved away from the survival area towards the well-being area of the chart, whereas Britain shows a minor setback in the same areas, descending in both scales even if marginally. The importance of these movements resides in the cultural implications of a nation where changes are implemented and accepted (such as those in Mexico from 1981 to 1990) as opposed to negative impacts of such changes in other nations (i.e. the UK).

Trompenaars & Hampden-Turner (1997) presented the findings from their cross-cultural training programs and from research in 50 countries (Mexico and the United Kingdom included) with 30 different companies and 75% of the participants being
managers. Their database as of 1997 included 30,000 participants. The authors view culture as an onion with implicit basic assumptions as the core, then norms and values of the culture and lastly artefacts and products (business). Trompenaars & Hampden-Turner (1997) share the view of Schein (1992) as they also regard culture as consisting of three levels: 1) artefacts and products, 2) norms and values and 3) basic assumptions. Their research describes cultural differences in the following dimensions:

Universalism versus Particularism (rules versus relationships) – universal rights compared to the particular requirements of individual relationships. Particularist groups seek gratification through relationships and tend to develop their own local identities in global firms. The authors utilise a situational hypothetical of a person breaking the speed limit and by not telling the truth a friend can escape punishment. The authors state that they find that the universalistic response is that as the seriousness of the accident increases, the obligation to the friend decreases. They also argue that the Particularist cultures may put enough pressure on people not to break the speed limit in the first place. Of the 31 countries reported (including Mexico and the United Kingdom) on all but four had a percentage greater than 50% responding that the truth needed to be told.

Communitarism versus Individualism (group versus the individual) – self-interest compared to the community interests. The authors point out that this follows a Protestant-Catholic divide as well. They also point out that unaccompanied people (no entourage) assume a lack of status in some societies. Communitarian societies will refrain from voting on decisions to show respect for those in the minority. The values of either extreme go to the issues of power and empathy.

Neutral versus Emotional (the range of feelings expressed) – being objective and detached compared to being effusive and expressive. The authors describe considerations starting with time and tone of voice in communications. The concept of waiting for a person to finish talking before one begins talking for example. They tell the story of a colleague who was raised in Curaçao and Surinam. In Curaçao, his grandmother would slap him in the face for not looking at her when he talked and his grandmother in Surinam would slap him in the face for making eye contact. Of the 49 countries reported (again, Mexico and the United Kingdom included), all but 10 had a percentage less than 50% responding that they would not show emotions at work.

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Diffuse versus Specific (the range of involvement) – contractual approach compared with relationship approach, or low context versus high context. The authors point to the work of Lewin (1936). The so-called U-type (American) and the G-type (German) illustrate the concept of what is the size of public and private spaces. One example used is that of a U-type person visiting the home of a G-Type person and wandering around their home uninvited. The U-type sees as public the kitchen of a person for example - visiting the kitchen or wandering about the house without a guide, whereas the G-type person sees such areas of a home as very personal. A U-Type person has a small personal space and a G-Type person a very large personal space. The authors describe the work of Parsons (1951) and the dimensions of neutral, affective, diffuse and specific for considering regional cultural differences. All of these dimensions go to the leadership dimensions of communication and trust.

Achievement versus Ascription (how status is accorded) – individual performance compared to position. This dimension differentiates cultures that hold authority to be more important than individual performance. The values of either extreme go to the issues of the leadership dimensions of power and trust.

Trompenaars & Hampden-Turner (1997) point to the work of Kluckhohn & Strodtbeck (1961) who identified three types of cultures: present oriented, past oriented and future oriented. The concept is similar to that in the previous example of Figure 4.2. The authors also consider national cultures and the corporate cultures that are more compatible with them. Trompenaars & Hampden-Turner (1997) describe four dimensions of corporate images using the metaphors of incubator (self-expression and fulfilment and emotions top-left quadrant), family (power oriented with leader as father bottom-left quadrant), Eiffel tower (bureaucratic, broad at the base and narrow at the top bottom-right quadrant) and guided missile (egalitarian and goal focused top-right quadrant). Figure 4.6 presents the results of their research for selected countries. The authors go on to point out that the importance of transnationals is that they balance the centralisation and de-centralisation of corporate cultures by using portions of both and by adjusting and stating that the only strategic system for a genuinely international company is the strategic control model that they follow.
Trompenaars & Hampden-Turner (1997) see culture as having a normal distribution, which is to say that there are overlaps in the normal distributions across cultures, where some values and beliefs are common. Said another way, there are variations within cultures that can share portions of values and beliefs with people in other cultures. The authors issue a warning against stereotyping for this reason and state that: “transcultural effectiveness is not measured only by the degree to which you grasp the opposite value (another cultures’ differences), it is measured by your competence in reconciling the dilemmas.” (Trompenaars & Hampden-Turner, 1997)

It is important to mention that for the effects of this study, the close proximity of the cultural aspects of Mexico and the United Kingdom in the research of Trompenaars & Hampden-Turner (1997) acted as a starting point. Even though Figure 4.6 shows that Mexico appears in the centre of the chart, indicating an almost neutral approach to the cultural aspects of the research of Trompenaars & Hampden-Turner, the fact is that from all the countries present in that study, the closest in attitudes and responses to Mexico is the United Kingdom, although this closeness does not imply that both cultures are alike and that their views and attitudes are the same.

The authors also point to the work of Hall (1960) who described polychronic (synchronous) time and societies who put value on doing activities in parallel. The example used is for Japanese negotiators (polychronic) to make their major concessions after the American partners were confirmed on return flights (Americans unwilling to change plans - monochronic). Many authors have addressed this concept and the ways
that different cultures consider time (Bátiz-Lazo & Wood, 2001; Khera, 2001; Pressey & Selassie, 2003; Swift & Lawrence, 2003; Whalley, 2004).

Den Hartog et al. (1999) have performed some of the most comprehensive work on cross-cultural management. In the reference article, the authors stated that “attributes associated with charismatic/transformational management will be universally endorsed as contributing to outstanding leadership and the findings were that the combined results of the major GLOBE (Global Leadership and Organisational Behaviour Effectiveness) study and the follow-up study demonstrate that several attributes reflecting charismatic/transformational leadership are universally endorsed as contributing to outstanding leadership.” This study will be discussed in further detail later in this Chapter.

The authors went on to say that “these include motive arouser, foresight, encouraging, communicative, trustworthy, dynamic, positive, confidence builder and motivational. Several other charismatic attributes are perceived as culturally contingent. These include enthusiastic, risk taking, ambitious, self-effacing, unique, self-sacrificial, sincere, sensitive, compassionate and wilful and none of the items universally perceived as impediments to outstanding management describe transformational/charismatic leadership (trust, empathy, transformation, power and communication).” (Den Hartog et al., 1999)

Rosen et al. (2000) completed a study of 75 CEO’s and 1,058 respondents in 18 countries and present a view of culture with leadership at the core, followed by business, nation and world as shown in Figure 4.7. Figure 4.7 shows that each one of the cultures identified by Rosen et al. (2000) is closely related to the one in the previous and following levels and that they all are enclosed in an onion-like shape. This means that in order to understand the elements in the innermost circle, the elements of the outer core have to be reviewed first, suggesting that the components are not separable, meaning that without the national view, the lower layers are without context and cannot be properly explained nor fully understood. Implied in their design is the idea that the proximity and frequency of interaction determine the layer of culture with leadership at the centre and the various aspects of how people perceive leadership. At this level, the relationships are more intimate and immediate while at the business level, the business culture imposes upon the individual from 40 to 60 hours each week.
From the interviews and surveys, Rosen et al. (2000) developed a different view of cultural intelligence (CQ), what they call global literacy. Thomas & Inkson (2004) define CQ as having the components of mindfulness, behavioural skills and knowledge and as the meaning of knowledge of culture and the principles of cross-cultural interactions. Mindfulness refers to paying attention to the cues in cross-cultural situations and behaviour skills mean using appropriate skills developed from a repertoire of cross-cultural skills. The authors note that social learning research confirms that the repetitive sequence of knowledge-mindfulness-behavioural skills leads to the development of CQ.

Rosen et al. (2000) and Thomas & Inkson (2004) state that CQ is composed of four elements: Personal literacy referring to understanding and valuing yourself, management the mastery of key behaviours of aggressive insight, confident humility (power), authentic flexibility, reflective decisiveness (communicate) and realistic optimism (transformation). Social literacy refers to engaging and challenging others. Management behaviours include pragmatic trust, urgent listening (communicate), constructive impatience, connective teaching and collaborative individualism. Business literacy, related to focusing and mobilising your organisation and its management skills include chaos navigator (transformation), business geographer, historical futurist, leadership liberator (power) and economic integrator. Finally, cultural literacy refers to valuing and leveraging cultural differences. The managerial roles include proud ancestor, inquisitive nationalist, respectful moderniser (empathy), cultural bridge and global capitalist. The relevance of these elements resides in the fact that project managers present inherent cultural traits and therefore, they are biased towards their own culture. As this research attempts to establish what the causes of project success or failure are, understanding how the culture of a project manager can influence a project
and how this culture can be measured are paramount (Zweikael et al., 2005; Dvir et al., 2006).

In their study, Sagiv & Schwartz (2000) found the three universal needs of people are humane requirements, the preservation of society and the relationship of people to their natural environment. Sagiv & Schwartz (2000) examined 57 cultures, there were seven fundamental value dimensions identified: harmony, embeddedness, hierarchy, mastery, affective autonomy, intellectual autonomy and egalitarianism. These dimensions can be found in the work of other authors such as the power distance and individualism-collectivism dimensions described by Hofstede (1980a; 1997) and the GLOBE research program egalitarianism. The issue of the relationship of people to their natural environment is a concept that is not often addressed in the literature on culture. The authors conclude that projects require not only an understanding of cross-cultural management but also of project management and of human resources management, because even though these two elements are not cultural issues per se, they are closely linked to culture through the people composing the project teams.

Gannon (2001) takes the research of Hofstede (1980a; 1997) and enriches the information with in depth studies of individual cultures. He establishes cultural metaphors that take account of history, philosophy, politics, religion, customs, art, economics, humour, holidays and ceremonies, education, food, technological change, music and more (Lebas & Weigenstein, 1986; Geertz, 1993; Greenleaf, 1994; Jaffe & Scott, 1998; Swe & Kleiner, 1998). Gannon (2001) uses the framework developed by Triandis & Gelfand (1998) that divides cultures into four types: horizontal collectivism (community sharing), vertical collectivism (hierarchical ranking), horizontal individualism (equality matching) and vertical individualism (market pricing). Mexico could be placed as a vertical collectivist culture, as it is a highly hierarchical culture both socially and organisationally. However, the UK could be considered a horizontal collective culture, where communities share values. Gannon (2001) also points at the work of other psychologists and anthropologists for the construction of cultural metaphors, including Kluckhohn & Strodtbeck, (1961) by asking: does the society consider people good or bad? Does the society believe people should live in harmony with nature? Does the society assume individualism or collectivism for relationships? What is the primary mode of activity (go with the flow, doing something, setting goals)? What is the perception of space? What is the society’s temporal perception
(past, present, future)? Hall & Hall, (1990) referencing the context (high or low) as amount of explicit information in communication (Japanese high context society aphorism: “he who knows does not speak; he who speaks does not know.”)

Gannon (2001) also follows the concepts of culture developed by Risberg (1997) and Veiga et al. (2000) expanding the concept of torn cultures (torn from its cultural roots such as Russia) and cleft cultures (diverse cultures that are difficult to integrate) to divide his book. For example, Russia was severed from its social, economical and cultural roots four times: by the Tartars, by Peter the Great, by communism and then by the falling of the iron curtain. Gannon (2001) states that there are times that culture is less important or indeed not important at all. Some examples cited are occupational similarities, such as communities of practice (e.g. doctors), social class similarities (e.g. middle-class), exclusionary powerful groups (e.g. apartheid) and partnerships. He also states that when trust is present, culture decreases in importance (Doney et al., 1998; Swe & Kleiner, 1998) and that in the case of the internet that it has led to more differentiation than integration (Höynälänmaa et al., 1998). Gannon (2001) believes that culture matters most when there is a scarcity of resources, opportunities and feelings of inequity. In the case of this study, the research of Gannon (2001) provides the opportunity to understand how developing nations (such as Mexico), where there is a strong feeling of inequity and lack of opportunities can understand and be understood by countries where these feelings are less strong, as it happens in developed countries (such as the United Kingdom) (Navarrete & Pick, 2003; Swift & Lawrence, 2003).

Lipnack & Stamps (2000) approach the antecedents of trust in a global virtual team setting by studying seventy-five teams in different countries. The authors state that from the rational perspective the existence of trust enables people to take risks and from the social perspective trust centres on moral duty or values. The authors note that there are four perspectives taken in researching trust: individual personality differences, institutional phenomena, cross-cultural issues and interpersonal.

Shore & Cross (2005) explore the role of national culture on international science projects. They state that “national culture and its influence on the Project Management process have received little emphasis in the literature” (Shore & Cross, 2005), and is by presenting a number of questions that they reach their conclusions:
Is the study of culture relevant to the Project Management process? Yes, because during their study they found out that it is more than likely that culture plays a relevant role in the project management process as the result of the different interactions between project managers and team members and also by the style of leadership shown by the project manager.

Which cultural dimensions are likely to affect the management process? The authors point to Hofstede (1980a; 1997) and the GLOBE survey: power distance, uncertainty avoidance, individualism, future orientation, performance orientation and humane treatment. Again, the authors reached these conclusions by comparing the leadership style and interactions between project managers and team members.

Which management issues are linked to the influence of culture? The authors found that management structure, geographic work distribution, budgetary commitment, family and education and pay equity are linked to the cultural dimensions noted just above.

Does culture affect project outcomes? Yes, but how it does is unclear. In most cases, projects are addressed from the objectives, schedule or resources point of view and intangible elements affecting projects are left out.

How can knowledge of these issues be useful to project managers? One more piece of the jigsaw puzzle. Shore & Cross (2005) argue that adding these topics to project management can provide projects with the pieces to achieve a complete picture, therefore expanding the understanding of the project and the elements working and interacting within it.

The answers presented by Shore & Cross (2005) provided an additional element, namely the importance of relationships between managers and team members, as well as the leadership style shown by the project manager, for this study in the attempt to identify cultural differences in project management in Mexico and the United Kingdom and how these differences affect project outcomes. The fact that Shore & Cross (2005) provided succinct answers with little or no further explanation on the origins of the answers, created an incentive for this researcher to find accurate and more thorough explanations.
In another article by Henrie & Sousa-Poza (2005) the authors did a thorough review of the project management literature from 1993 through 2003 that addressed the issue of culture. They reviewed 770 project management journal articles (Project Management Journal and the International Journal of Project Management) and 93 books. They concluded that “the lack of leading project management culture literature provides challenges for the project management researcher and busy project manager. As the project management literature indicates, researchers will need to incorporate theories and concepts, developed in other disciplines, to build project management-specific culture based theories and research methods. Is the project management profession including culture as part of its research agenda? The answer is yes, to a very limited degree. Earlier literature reviews and this review show a consistently low level of culture-specific literature within the leading project management journals. For the busy project manager, the implication is that he or she must look outside project management literature for information and guidance on culture and the implications it has toward project team success. To overcome the lack of available culture information within the areas surveyed, the project manager must expand his or her reading and learning to other culture-based discipline areas.” (Henrie & Sousa-Poza, 2005)

Following these issues, it is clear that the research of Henrie & Sousa-Poza (2005) is a milestone on which to base this particular study, especially considering that through their research they pointed out the lack of research in areas where project management is related to national and organisational culture, especially in the areas of the management of multicultural teams, cultural interaction and leadership in culturally diverse projects. One of the studies attempting to address the lack of research covering leadership, projects and culture is the GLOBE survey.

4.3.3 The GLOBE Survey

In one of the broadest and most thorough studies of leadership and culture, House (2004) reported on the Global Leadership and Organisational Behaviour Effectiveness Research Program (GLOBE) that surveyed 17,300 mid-level managers representing 951 organisations (financial services, food processing and telecommunications, utilities and energy) in 62 cultures (the United States, Germany, the United Kingdom, Venezuela and Mexico amongst others). The research addressed how organisational practices are influenced by societal forces and it cross referenced the work with that of Hofstede (1998). The editors found that leadership is culturally contingent upon the culture in which the leader functions. It is important to mention that although the research is
thorough, the results are presented in an aggregated format. It is important to note that for the effects of the GLOBE study, the terms culture and nation are interchanged denoting that they are synonyms although other authors such as Tayeb (1994) clearly specify that multiple cultures can exist within national boundaries.

Javidan et al. (2006a), as part of the GLOBE study, point to other cultural databases that bear upon the issues of how and why cultures are different. They point to the UN Development Program Human Development Report, the World Value Surveys by Inglehart (2005) and the World Economic Forum’s Executive Opinion Survey (World Economic Forum, 2006) as databases utilised to consider the economic, development and quality of life in different cultures.

The GLOBE survey (House et al., 1999; House, 2004) definition of leadership is “the ability of an individual to influence, motivate and enable others to contribute toward the effectiveness and success of the organisations of which they are members.”

Specifically, the objectives of the GLOBE survey were to answer the following questions: Are there leader behaviours, attributes and organisational practices that are universally accepted and effective across cultures? Are there leader behaviours, attributes and organisational practices that are accepted and effective in only some cultures? How do attributes of societal and organisational cultures influence specific leader behaviours and if they will be accepted and effective? How do attributes of societal and organisational cultures affect selected organisational practices? How do attributes of societal cultures affect the economic, physical and psychological welfare of members of the societies studied? What is the relationship between societal cultural variables and international competitiveness of the societies studied? These questions raise topics within this study as they relate to attributes which are present across cultures and therefore, are likely to be encountered in different locations or people. At the same time, these attributes are specifically linked to the behaviour of project managers and their teams but in a non-geographically specific area, therefore opening the door for further research which is the focus of this thesis. It is important to note that the respondents from the United Kingdom and Mexico were included in the GLOBE survey.

The results of the GLOBE survey identified nine independent variables or cultural dimensions, measured by questions that asked how things were in their organisation
(practices) and how things should be (values) in their organisations addressed in nine dimensions:

1) Uncertainty Avoidance referring to extent that people strive to avoid uncertainty by relying upon social norms, rituals and bureaucratic practices. Origin Hofstede (1997) for all items noted as Hofstede (trust).

2) Power Distance or the degree that people expect and agree that power would be stratified and concentrated at high levels of organisations. Origin was Hofstede (1997) (power).

3) Institutional Collectivism, referring to the degree to which society and organisations encourage and reward collective distribution of resources being originated from Hofstede (1997) as a single dimension and modified from the work of Triandis (1995) (trust and empathy).

4) Group Collectivism, related to the degree to which individuals express pride, loyalty and cohesiveness in their organisations and families. Origin Hofstede (1997), as a single dimension, modified resulting from the work of Triandis (1995) (trust, empathy, communication).

5) Gender Egalitarianism that is the degree to which societies and organisations promote gender equality. Origin Hofstede (1997), as a single dimension of masculinity (power).

6) Assertiveness, addressing the extent to which an individual expresses assertive, confrontational or aggressive behaviour in organisations and society and based on Hofstede (1997), as a single dimension of masculinity transformation and power.

7) Future Orientation, addressing the extent to which individuals engage in future activities such as planning and postponing collective gratification which is based on Kluckhohn & Strodtbeck (1961) and generally similar to the Confucian Work Dimension (empathy, transformation, communication) developed by Hofstede (1997).
8) Performance Orientation, related to the degree to which society or organisation rewards performance and excellence, based on Kluckhohn & Strodtbeck (1961) power, transformation, and communication.

9) Humane Orientation – degree that societies and organisations reward fair, altruistic, friendly, generous and caring behaviour for others, based on Kluckhohn & Strodtbeck (1961) empathy and transformation.

These dimensions are used in this study in order to clarify what are the cultural attitudes towards project management and to understand how these attitudes can explain the success or failure of a project. It is important to mention that not all of these dimensions have the same weight in this research. Understanding them is an important step towards ensuring a thorough explanation of why people (and in the case of this study, project managers and team members) behave and perceive behaviours as they do.

![Figure 4.8 GLOBE Cultural Dimensions](Javidan et al., 2006a)

Figure 4.8 was compiled from data presented in the GLOBE study from Javidan et al. (2006a). It shows the average overall responses to the survey on each of the cultural dimensions (ranked from 1 to 7). Differences between the practice (as is conditions) and the values (should be beliefs) were both measured by the GLOBE survey and are displayed. Figure 4.8 shows how in practice people behave (or perceive their behaviours) in a different way than when they are asked about their values. The practice
was measured by applying a survey linked to organisational elements. The shape of the
areas shows that even though people were asked about the values the scores were
higher, in practice the scores are lower, which are represented in Figure 4.8 by a smaller
area. This does not mean that people were lying but that people have different
perceptions. The GLOBE survey explored the differences between how people see
actual practice in the workplace versus what values that believe should be in the
workplace. For example, notice the difference on the Hofstede dimension of Power
Distance. This provides an interesting view of the data originally collected by Hofstede
(1997). An interesting part of this survey which applies to this thesis is that the GLOBE
research shows that people do have different perceptions of the same issue, even though
they are part of the exercise and that the researcher has to be aware that the results of a
survey (especially one related to culture, values and attitudes) will not always be in line
with the observations made by the researcher.

As part of the reporting on the GLOBE study, Gupta et al. (2002) and Javidan et al.
(2006a) provided a review of the literature and theory of the study, pointing out that
international convergence is difficult to assess, because the global community is
interrelated nowadays. They point to the work of Ralston et al. (1995) who found that
Hong Kong managers reflected more western values than on Chinese values and that
Chinese managers reflected more on Chinese values than western values stating that
economic advancement or globalisation alters perceptions and this can relate to
Mexican project managers reflecting more American values rather than Latin American
values.

Tsui et al. (2007) and Chao & Moon (2005) note that there is little evidence of
fundamental changes in values since Hofstede did his survey between 1967 and 1973,
as noted by Hoppe (1993). However, they do point out that since cultural and
managerial theory and research has vastly improved pointing to the work of House
(2004) and the GLOBE research by addressing cultural issues in a near 21st century
environment.

Even though the previous sections present the evolution of the cultural research and in
the attempt of understanding national culture, this study would be incomplete without
the understanding of what the determinants of national culture are.
4.4 Determinants of national culture

The models previously explained help to understand what the measurable characteristics present in any given national culture are. They provide a set of quantifiable elements which can then be compared with those from any other culture. During their research, Myers & Tan (2002) reviewed several definitions and models of national culture and concluded that the work of Hofstede (1980a; 1980b; 1990; 1997; 1998) has influenced the research of culture and national culture in the field of management. They also found that national cultures share certain determinants that make them comparable.

Appell (1977) acknowledges: “A society undergoing change...[such as that wrought by international business] has a right to its cultural traditions, its language, and its social history.” Hill (2003) takes into account these arguments and takes the definition of national culture one step ahead defining it as “a system of values, norms and traditions that are shared among a group of people and that when taken together constitute a design for living.” Hill (2003) argues that this system of values and norms is determined by eight key influences: Religion, political and economic philosophies, education, language, social structure, history and other cultures and that these eight influences shape the way people within and outside a culture perceive it (see Figure 4.9).

![Figure 4.9 Determinants of a National culture (Hill, 2003)](image)

The importance of the approach developed by Hill (2003) is that it uses a set of elements to determine a national culture different to those of Triandis (1995), Hofstede
(1997), the GLOBE project and Gupta et al. (2002). Rather than relying on the views of people and their interactions and behaviours, Hill (2003) looks at the factors underpinning a culture and even though it is true that people build up all these elements based on their own ideas, behaviours and interactions they serve as the basis to state the main differences between different national cultures.

According to Hill (2003) history and other cultures are the most important elements determining a national culture as they play a very important role in forging the identity of any specific national culture and differentiating one group from another. Latin America, and more specifically Mexico, can be seen as an example of how the interaction of several cultures moulds a totally new culture in a unique shape (Egri et al., 2000) as the different indigenous cultures mixed with the Spanish culture brought in by the Spanish conquistadores to finally create a culture which, to a certain extent, can be identified with Spanish culture but in most aspects is totally different. On the other hand, the United Kingdom is a good example of how history determines the shape of a national culture not only by outlining the geographical location and boundaries of the nation but the composition of its inhabitants and relationships with other nations (Wilson, 1995), as the British Empire allowed people from different countries to settle in the United Kingdom, bringing their own cultures and amalgamating them while Britain remained distinctively different to them. Also, the relationships of the United Kingdom with other countries, such as the “disagreement” with the French during the 19th century and the leadership Britain exerted during World War I and World War II shaped the culture of the United Kingdom (Bassnett-McGuire, 2003).

These two factors are not the only ones underpinning national culture. The political and economic philosophies adopted by any given nation-state are closely linked to the two factors mentioned above. If it is true that each nation has the right to choose their own political organisation and economic approach, the fact is that these factors are influenced by the relationships of the nation with their neighbours, former colonial powers or close allies (Arizpe, 2005). The economic philosophy of nations can be influenced by external organisations due to financial commitments with such entities and close trade ties established with other countries or economic blocks (Markarian et al., 2007). The case of the European Union is a very good example of the economic philosophy of a nation being influenced by its relationship (or membership in this case) with an economic block, as each member country has to comply and follow strict
economic regulations that impact the way the economic philosophy of such country is shaped and managed.

Religion and social structure are two of the determinants which can raise great controversy. Societies and countries are often based on religious beliefs which act as an amalgamating force for the members of such cultures, often providing a common ground and helping to shape the views of the people (Inglehart, 2005). In the past, countries based their status amongst other nations in terms of religion, such as Spain in the XV century ruled by the Catholic Monarchs with the blessing of the Pope, England and the Reformation and latterly the Islamic republics in the Middle East. Religion is a powerful element in any given culture and even though the nation-state declares itself as secular, the people living within these nation-states give religion a very important meaning (Whalley, 2004; Inglehart, 2005).

The social structure of a country also plays a very important role in shaping its culture as it defines the relationships amongst entities and groups within any given cultural circumscription. Its importance resides in the acceptance that people have of the underlying normative patterns of society (Chao & Moon, 2005). This acceptance leads to societies where hierarchies are regarded as important and present a way to demonstrate social status. On the other hand, societies disregarding hierarchical societal structures search for people to be equal and share the same social status and benefits. For example, in India, the caste system still determines the social structure and relationships of people and in Japan there is a very powerful social structure regulating the relationships of people (Richerson et al., 2002).

Finally, language and education are the last two determinants of the approach proposed by Hill (2003). Language is the bridge linking the people living within a nation-state and at the same time, it allows people to express their cultural identity (Chao & Moon, 2005). Language itself does not imply that a country or nation-state belongs to a specific culture or that this nation-state has close ties with other cultures which speak the same language and at the same time, it is not geographically constrained (Bloch & Starks, 1999). Throughout time, language has proven to be the vehicle to communicate culture. Latin was the language spread all over the world by the Romans and later in history English, French and Spanish were taken all over the world by the colonial powers. Nowadays, the mobility of people along with mass media have taken languages to all
corners of the world allowing people to communicate and transfer cultural values (Bloch & Starks, 1999; Holden & Von Kortzfleisch, 2004).

Education, as a determinant of culture plays the role of determining the human capital or a nation-state or culture (Tabellini, 2005) as it can be seen as a measure for the technological advance of such nation-states or cultures. Education allows cultures to transfer knowledge to their members, providing them with the means to enhance their culture and therefore, allowing people to evolve along with their culture (Dorn et al., 2007) while at the same time it also presents itself as a bearer of the cultural capital of any given culture, being a facet of national identity and a key policy for social inclusion.

The determinants described above can be used to establish the main differences and similarities between the cultures of the United Kingdom and Mexico, serving as a starting point to understand these cultures and to create the basis for the development of this particular study. The fact that the vast majority of the employees of PEMEX and CFE are Mexicans makes the understanding of the Mexican culture paramount for this study. At the same time, as comparisons between Mexico and the United Kingdom are made in this study, understanding the determinants of elements of British culture is also important.

4.4.1 British Culture

Britain is largely seen as the most conservative society in Europe, therefore shaping its culture with this idea (Collins & Robbins, 1990). Emerged from a post-war world, the culture of Britain has evolved from that of a vast empire, reaching lands far away, to that of a globalised nation yet enclosed in an island. The culture of Britain is far from homogeneous, consisting of four main distinct cultural peoples, namely English, Irish, Scottish and Welsh and many more immigrant minorities who are now settled in Britain (Tayeb, 1994). Based on this, Tayeb (1994) argues that any comparison between the British culture and the culture of any other country or nation-state has to be made acknowledging the characteristics of the composition of the people comprising those cultures.

Many historical factors have helped to shape the development of the British culture. Since the late seventeenth century, British society experienced a class division within the society and after World War II, this division was even more pronounced (Bassnett-
McGuire, 2003). This class division, added to the division due to the nations composing Britain, might lead people to believe that Britain is a divided society but is in fact the very factor that amalgamates the British society as people strives to climb the social ladder while at the same time, they struggle to keep their own personal identities (Collins, 1991).

In his research, Hofstede (1997) states that one characteristic of British culture is that of tolerance of uncertainty, which might be explained by the diverse composition of the British population and their different approaches to dealing with events and problems. Hofstede also mentions that despite the class division in Britain (or perhaps this same issue), there is a less power distance culture in Britain than in other European nations. This is shown by the hierarchical structure of the British society and carried on to the structure of British organisations (Ryan, 1999). Also, persuasion and political networking play a stronger role than authority in decision making processes in Britain, as people seek support from key people before making a strong presentation of the case in question (Hofstede, 1997; Ryan, 1999). Chell et al. (1991) mention that historically, the British culture has always relied upon high achievers and placed them in high administrative and governmental positions, probably a reminiscence of the British colonial experience.

Following the general description of the determinants of national culture shown on Figure 4.9, Figure 4.10 shows the determinants of the British culture.

![Figure 4.10 Determinants of British Culture.](image)

Adapted from (Hill, 2003)
From Figure 4.10, we can determine what the composing elements of the British culture are as adapted by the author. First, the language spoken in Britain is English, known as the “universal” language, now thoroughly used for researching and business (Crystal, 2003; Gibbons & Ramirez, 2004). It has allowed Britain to be seen as one of the most cultured nations in the world as, with the rise of the British Empire, the language (and the ideas developed with it) were taken to the four corners of the world. In recent times, English has been adopted by the academic communities as the universal language for communicating ideas and has provided a “common” point of understanding amongst people, not only in the academic field but also in business (Meneghini & Packer, 2007).

As the Industrial Revolution started in the United Kingdom, along with the first studies regarding the means of mass production, the United Kingdom is known as the first industrial nation of the world. These developments led to the establishment of a class-based system (Temin, 1997; Somanathan, 2002). This system has been in place since the first days of the United Kingdom as a nation due to the monarchy and it has been accentuated by the division between labourers and capitalists with the arrival of the Industrial Revolution (Temin, 1997).

The Industrial revolution changed the education system in the United Kingdom. Nowadays the education system in the United Kingdom is largely regarded as abstract, based on the arts and academic principles and it has failed to create an interest in vocational training leading to a lack of entrepreneurial activity (Robinson & Burke, 1996). This education system shows a tendency for people acquiring higher levels of education, looking at their education as an investment which can provide them with a competitive advantage against other people and therefore, allowing them to obtain higher salaries or financial rewards (O'Leary & Sloane, 2005).

The government of the United Kingdom is a Parliamentary Democracy, with the Sovereign being a mere “decorative” image and with the real political power being located within the Parliament and its democratically elected members (Bergman et al., 2002). Originally, the British political system was characterised by a centralisation of power with decisions being taken by the central government and then flowing down and permeating the institutions and therefore, it was difficult to resolve differences between the centre and locality (Smith, 2005). More recently, the United Kingdom has started a process of devolution of powers to its constituent states (Goodwin et al., 2005), hence
moving towards a multi-level governance scheme, which, although it has limitations, shows great potential for carrying on with constitutional and institutional reform while retaining centralised control of matters affecting the United Kingdom as a whole (Bache, 2004).

The United Kingdom has entered into an economic system dominated by neo-classical economic thought, where the government oversees the correct application of policies, market-driven but closely regulated (Parel, 2001). The economic system is characterised by its close links with the political system and it is regarded as more profit-driven than the general corporativist economy, characterised for being paternalistic, with support to state-owned companies (Perlitz & Seger, 2004), favoured in continental Europe as it favours monetary policies and foreign trade rather than more social-driven policies (Skaggs, 2003; Buckler & Dolowitz, 2004).

As result of the long established close ties between the United Kingdom and the United States, Britain is strongly influenced by the American culture at all levels, from media and literature to economic, political and financial relationships (Doney et al., 1998). Britain is often referred as “America’s closest ally” and this applies not only to the political and military areas but to financial relationships as well. American culture is closely linked with domination, with English being regarded as the universal language and the United States being the only superpower after the collapse of the Soviet Union it is evident that the American culture has permeated the British culture, especially after World War II (Peterson & Anand, 2004).

Finally, Britain is a mainly protestant nation, sharing the progressive views that Protestantism has developed throughout the years with other countries and shaping the views of its people (Huntington & Harrison, 2000). The British Empire ruled lands all over the world, therefore spreading the use of English as the language of all its territories and domains while at the same time, the ideas of Protestantism were taken all over the world along with the people emigrating from Britain to all corners of the Empire along with other ideas, such as education, political and economic systems.

A more comprehensive picture of the contemporary British culture is likely to emerge if we examine the experiences of people on the street. King (1997) argues that people are exposed to the culture which has welled up from below and these experiences might be presented in various different ways.
From the previous elements, it is possible to gather that Britain has been and still is a leader in developing new lines of thought and spreading those new ideas throughout the world (King, 1997) and one of the countries where Britain has exerted its influence over the years is Mexico (Rourke, 2003) due to trade, political, economic and educational agreements, allowing the United Kingdom to be seen as a model for other nations in the world.

4.4.2 Mexican culture

Mexico is the country with the most Spanish speakers in the world (Mar-Molinero, 2000; Mar-Molinero & Stewart, 2006). It was the amalgamation of several indigenous kingdoms after the Spanish conquest that shaped the geography and ethnography of what later would be called Mexico (Meyer & Beezley, 2000).

Before the Spanish conquest, Mexico was composed of several kingdoms with different languages, beliefs and often fighting each other. The centre, East and West of the country were under the Aztec domination, with several vassal kingdoms under their rule. The Mayan empire ruled over South and South East, reaching lands as far south as Honduras (Meyer & Beezley, 2000). The arrival of the Spanish conquistadores, with their technology, religion, language and diseases finished with the indigenous empires and kingdoms. The Spanish priests were in charge of “indoctrinating” the indigenous people in the ways of the Catholic Church, labelling as heresy their beliefs and seeking the total obliteration of any remnants of their culture (Paz, 1985).

By the early XIX century, the territory of Mexico, then called the Virreinato de la Nueva España (Viceroyalty of the New Spain) reached as far north as the states of Nevada, Wyoming, Colorado and Utah in the United States and as far south as Honduras (Meyer & Beezley, 2000).

It was this geographical extension that started shaping the culture of Mexico. First, not all the indigenous people accepted the Spanish domination without fighting therefore maintaining their beliefs and culture for longer than other already fallen kingdoms. In other cases, people amalgamated their beliefs with those brought by the Spanish, creating a religious syncretism which still lasts (Paz, 1985; Greenleaf, 1994).

After the war of independence and the declaration of the Mexican Independence in 1821, Mexico, now as a Federative state, initiated a period of transition and economic
growth, establishing diplomatic, economic and cultural ties with the European powers and the United States. By the late XIX and early XX centuries, Mexico had already lost half its territory fighting a war against the United States and managed to defeat the French army which was trying to impose a European appointed emperor (Meyer & Beezley, 2000). These wars also contributed to shaping the Mexican culture in a very important area: the separation of the State and the Church (Paz, 1985). Mexico has always declared itself as a secular state with no official religion, even though almost 90% of its population professes the Roman Catholic faith (INEGI, 2005).

Modern Mexico is a country of contrasts. The “patron” culture, brought by the Spanish conquistadores during the Colonial domination, evolved into a paternalistic culture (Martinez & Dorfman, 1998; Romero, 2004), where the people expect the boss, patriarch or government to look after their people and provide for them (Athanassiou et al., 2002). Also, since the late 1980s, the Mexican government has signed several free trade agreements, the most important of them, the North American Free Trade Agreement, signed along with Canada and the United States (Taylor, 1996; Kessler, 1999; Egri et al., 2000). These trade agreements have opened the closely regulated economy and transformed it into an open-market one, with the cultural implications that this entails (Stephens & Greer, 1995).

To continue with the description of the Mexican culture, Figure 4.11 shows the determinants of the Mexican culture following the approach proposed by Hill (2003).

![Figure 4.11 Determinants of the Mexican culture. Adapted from (Hill, 2003)]
The determinants shown in Figure 4.11 help us to better understand the Mexican culture as adapted by the author. As Mexico is a nation which emerged from a conquered territory, the idiosyncrasy of its people still keeps the sentiment as that of a nation with strong cultural ties to the conqueror, in this case Spain, often referred to as “La Madre Patria” (the “Mother Land”) (Paz, 1985). This sentiment is also enhanced by several other factors, especially the language and the close ties linking modern Mexico and Spain (Zea et al., 1963). Mexico is the country with the most Spanish speakers in the world (Mar-Molinero, 2000), about 105 million people (INEGI, 2005) and also, the country with more people emigrating, taking their language and culture with them to other countries, especially to the United States (Mar-Molinero & Stewart, 2006), making it the de facto second spoken language. Another legacy of the Spanish conquest was the vocational approach to education. The Universidad Nacional Autónoma de México, founded in Mexico City in 1551 was the first university in Mexico and the first university in America (Villavicencio et al., 2005). At the same time, in the last quarter of the XX century Mexico became the paradise of the “maquiladoras” (factories that import materials and equipment on a duty-free and tariff-free basis to be assembled and then re-export the assembled product, usually back to the originating country) due to the vocational education policies promoted by the government (Litrico, 2007) amongst other factors.

In the late 1970s, during the rule of the Revolutionary Institutional Party (PRI – Partido Revolucionario Institucional), the Mexican economy was transformed from free-spending “populism” to an open-market one, adopting a neo-liberal approach in order to adapt the country to the international economy (Fourcade-Gourinchas & Babb, 2002). This approach allowed the country to become more competitive in terms of financial markets, production and foreign investment and opened the door for the signing of free trade agreements with several other countries and economic blocks (Taylor, 1996; Kessler, 1999; Egri et al., 2000).

Another determinant of the Mexican culture is the fact that Mexico is a Federative Republic, based on a congressional system established in the 1917 Constitution (H. Congreso de la Unión, 2002), composed of 31 states and one Federal District which is the seat of the powers of the Union. From 1929 to 2000, the PRI held an almost hegemonic power in Mexican politics and since 1977, consecutive electoral reforms allowed the opposition to win more posts at local and federal level, culminating in 2000
with the National Action Party (PAN – Partido Acción Nacional) winning the presidential election (Crandall et al., 2005).

As well as maintaining close ties with Spain and other Latin American countries, the geographical proximity of Mexico with the United States has allowed the former to be bombarded with the American culture (Naylor, 1998). Mexico shares a 3000kms border with the United States and even though this border separates these countries it has also allowed the American culture to permeate Mexican culture and vice-versa. American culture is present in Mexico, from arts, media and entertainment to certain expressions of language and behaviours (Kelley et al., 1987). Also, Mexican culture shows the ability to adopt influences from other cultures, modifying them and adding a different touch that makes them unique to the eye of the observer (Gallo, 2006).

The final two determinants of Mexican culture are closely intertwined. On the one hand, even though Mexico is a secular state, 90% of its population profess the Roman Catholic faith (INEGI, 2005) brought to Mexico by the Spanish conquistadores. The methods of the Spanish conquest of Mexico resulted in the conversions to Catholicism of increasing numbers of the indigenous population, yet many people continued to practice aspects of their previous belief system, leading to widespread religious syncretism, incorporating indigenous practices into Catholicism (Paz, 1985). The most striking example of this fusion is the veneration of Our Lady of Guadalupe, which has been compared to the indigenous adoration of Tonantzin, the Aztec mother of the gods (Gallegos, 2002). On the other hand, the nucleus of the Mexican society is the family. Since before the Conquest, the pre-Columbian societies valued the family as their core and with the arrival of the Spanish conquistadores and Catholicism, the value of the family as the core of the society has been exalted (Paz, 1985). One important point to consider is that Mexicans consider family not only their close relatives, but also 2nd and even 3rd degree relatives and try to take these relationships with them to their workplaces (Athanassiou et al., 2002).

All these determinants provide a clearer picture of the British and Mexican cultures and their elements, establishing what their common points and differences are and therefore, providing this particular research with a valuable insight of the determinants of such cultures as well as their elements which make them different yet close.
Even though these elements and determinants, as well as the models described above, have been developed and used to describe national culture, they can also be followed to describe culture in a more focused area. As mentioned above, culture is present in several levels, from national to individual and its importance resides in the way it shapes the behaviour of people, not only as individuals living in a nation-state but as individuals working within organisations.

4.5 Conclusion

The previous sections have addressed how the concept of culture has evolved and how different models can provide a thorough perspective of national culture therefore helping to establish the main differences between the cultures of Mexico and the United Kingdom.

This Chapter does not try to develop a new definition of culture, but rather to analyse how this concept has evolved and how different researchers on different fields regard it and how these different approaches shape the way people perceive culture at different levels of society. This evolution leads to the acknowledgement that even though culture is a fuzzy concept, the use of the cultural dimensions approach which has been favoured by researchers is a starting point for the understanding of the concepts of national and organisational cultures.

The use of the cultural dimensions from the models developed by Kluckhohn and Strodtbeck (1961), Hofstede (1980a; 1980b; 1990), Hall and Hall (1990), Trompenaars (1997), House et al. (1999; 2004) and Triandis (1995; 2002) present the advantage of giving a clearer picture of the cultures of Mexico and the United Kingdom as they are perceived by the people living within these two countries. As a consequence, these models helped this particular research to understand what the differences and similarities between these countries are and created the basis for the further development of the research. Following the dimensions proposed in these models to describe the characteristics of the cultures of Mexico and the United Kingdom also gives the advantage of having common points of comparison and furthermore, the advantage of relying on well established basis for this research.

The determinants of national culture proposed in the model of Hill provide a beginning to understand how Mexico and the United Kingdom are culturally different, from the
point of view of the elements proposed in this model. Education, language, political and economical philosophies, history, social structure, religion and the interaction with other cultures shape the way any given culture presents itself and at the same time, complement the information provided by the members of such cultures in the terms that some of their behaviours and values can be linked to these determinants.

After reviewing project management, its trends and culture, the following Chapter explores project management culture and its importance in the modern organisational environment.
Chapter 5  Project management culture

5.1 Introduction

Since the introduction of project management methodologies in organisations in the 1950s, organisations have tried to align their projects with the strategic goals of the organisations. With the development of more complex projects and the expansion of operations all over the world, organisations face the need to establish a project management culture which can provide them with a competitive advantage in their markets and therefore help them to achieve project success.

This Chapter presents a review the relevant literature regarding project management culture. Section 5.2 presents a description of project management culture and what its importance is in organisations. Section 5.3 provides a review of the Mexican energy sector, specifically Petróleos Mexicanos (PEMEX) and Comisión Federal de Electricidad (CFE), from their creation to their current operations in Mexico as well as their setting within the globalised market. Section 5.4 presents the cultural foundation elements which help an organisation to understand, develop and implement a project management culture.

5.2 Project management culture in organisations

Project management culture has been described by several authors, such as Gray & Larson (2003), Wang (2001), Kerzner (2000), Graham (1993), Hobbs & Menard (1993), Harrison & Lock (1992), Firth & Krut (1991) and Cleland (1982), and all of them, to varying degrees, regard it as the culture of the project management profession or the project team.

A good project management culture is an environment that exhibits a healthy respect for the time and money spent on a project. Time and money are tracked, change can be managed and there is a shared commitment for a successful outcome. Every hour spent should count towards the delivery of the scope of the project. Tools and methodologies can help, and it is only through human intervention that project management problems can be resolved (Cartwright & Gale, 1995). Tools and methodologies cannot manage people; people must manage people. In the same way, project management cultures cannot be bought; they must be built from the ground up and driven from the top down within an organisation. The good news is that there are gains that can be made by
committing to some very simple principles for running projects (Jonsson et al., 2001). The important part of the project management culture is that once behaviours have been agreed on, they have to be taught to other members of the organisation so the project management culture specified for the organisation can permeate all its levels (Wang, 2001). In any case, project management culture is closely related to organisational change and it has to be started with a serious examination of all the current practices which have led to projects not being successful. After this exercise has been completed, the results can be complemented with information from organisations where projects are being carried out more successfully in order to establish what are the practices requiring improvement and what are those where the organisation shows a certain degree of expertise (Wang, 2001; Zweikael et al., 2005; Eskerod & Skriver, 2007).

In order to establish a starting point to examine the differences and/or similarities between the two Mexican organisations, which are the focus of this research (PEMEX and CFE), the sectors where they operate and the organisations themselves are described below.

5.3 The Mexican energy sector

Managing projects in privately run companies has been the subject of study for several years, however, when private companies are co-investing with government entities, it has been suggested that projects carried out in this way should be managed using a different approach (Gray, 2001; Hodgson, 2002; Mäkilouko, 2004). This approach becomes more complicated when the privately-run companies are foreigners to the country they are investing in, leading to new challenges and new fields of research. As Husted and Serrano (2002) point out, there are enormous differences in the way private and public organisations are managed in Mexico, spanning from the organisational structure, funding and recruitment, to corporate governance, responsibilities and taxing.

At the present time, the Mexican government is implementing important social, political and economic changes, such as the reform of the constitution, a re-organisation of pension schemes and several programs to fight extreme poverty. The impact of these changes has been reflected in the way that people perceive the Mexican national bureaucracy, the change process undertaken within the government and, at the same time, the organisations and people where change is taking place.
The Mexican constitution (H. Congreso de la Unión, 2002) was enacted on the 5th of February 1917, and clearly states in Chapter 1, Article 27, paragraphs 1st and 4th that only the State is the owner of all natural resources in the country, such as petroleum, water and radiofrequencies in the nation:

“The ownership of all lands and waters located within the limits of the national territory originally belongs to the Nation...” (H. Congreso de la Unión, 2002)

“It belongs to the Nation the direct ownership of all natural resources of the continental platform... all solid mineral fuels; petroleum and all solid, liquid and gaseous hydrogen carbons; and the space situated above the national territory, to the extent and terms stated by the International Law.” (H. Congreso de la Unión, 2002)

Also, Article 27 in paragraph 6th states that:

“...the ownership of the Nation is inalienable and imprescriptible... When it comes to petroleum and solid, liquid or gaseous hydrogen carbons or radioactive minerals, neither concessions nor contracts will be granted and those granted in the past will be cancelled and the Nation will carry on the exploitation of these resources... the Nation has the right to generate, transport, transform, distribute and supply electrical power with the specific purpose of providing a public service. In this matter no concessions to private companies will be granted and the Nation will use the goods and natural resources needed for those matters.” (H. Congreso de la Unión, 2002)

This means that these resources can be exploited only with the explicit permission of the government. Also, the constitution explicitly forbids privately-run or foreign companies to directly participate in the drilling, extraction, transportation and refining of petroleum and its derivates. It is important to mention that even though the oil extraction and power generation sectors are considered a part of National Security, the current state of the governmental finances does not produce the investment required to continue their expansion using up-to-date techniques and technology, hence the need of a partnership between the government-owned companies and the privately-run organisations.

According to PEMEX (2005), the proven oil reserves of Mexico are enough to continue its oil production at the same rate as in 2004 for eleven more years. If PEMEX adds the
probable reserves, then the oil production can be sustained for a further 10 years, and in order to convert these probable reserves into proven reserves, further investment in extraction is needed.

5.3.1 History of the Mexican energy sector

In 1929 the Partido Revolucionario Institucional (PRI – National Revolutionary Party) was created by Plutarco Elías Calles who was president of Mexico at the time. From 1929 until 2000, all the presidents of Mexico were members of the PRI. Meanwhile, the Congress was composed of an overwhelming majority of PRI congressmen, who approved most of the initiatives proposed by the successive Presidents. In 1938, Lázaro Cárdenas del Río ordered the expropriation of the oil companies in Mexico, the vast majority of which were foreign-owned. In the period between 1938 and 2002, the Constitution was amended on several occasions (the last one in May 2002), adding “locks” and blocks to private and foreign investments in the energy sector.

In 2000, the PRI was defeated in the Federal Elections and after 71 years in power, the government was replaced by a right-wing government party in the figure of Vicente Fox Quesada, of the Partido Acción Nacional (PAN – National Action Party). This government tried to loosen up the constitutional locks to allow co-investments (both government and privately-run companies) in power generation and the petrochemical sector. The government lobbied for these constitutional amendments to avoid companies running the risk of repeating the oil industry expropriation of 1938. The law was changed to allow privately-run organisations to invest in the above-mentioned sectors. Since most of the important companies willing to invest in these sectors are multinationals, it is clear that as they start to carry out projects in Mexico they are going to face new challenges as projects are being developed.

At the present time, the only company allowed to extract, transport, refine and sell oil and its derivates in Mexico is PEMEX (Petróleos Mexicanos – Mexican Petroleum), a government-owned company founded in 1938 after the expropriation of the oil industry. In the same way, the CFE (Comisión Federal de Electricidad – Federal Electricity Commission) was created by the government in 1937, with the objective of building power plants to satisfy the demand of electrical power in the country. It co-existed with at least three private-run companies until 1960, when President Adolfo López Mateos
ordered the expropriation of the power generation industry (Comisión Federal de Electricidad (CFE), 2005).

- **Petróleos Mexicanos (PEMEX)**

  The history of the oil industry in Mexico began in 1900, when Charles A. Candfield and Edward L. Doheny bought 113 hectares in the hacienda of “El Tulillo” in the state of San Luis Potosí in Mexico. In that year, the hacienda became the property of the “Mexican Petroleum of California Company” which started to drill the first oil well called “El Ebano”. In 1901 they discovered oil in the well called “Doheny I”.

  At the same time, the British company “Pearson and Son” owned by Weetman Dickinson Pearson, bought land for petroleum exploration and exploitation. In 1902 they found oil in the Tehuantepec Isthmus and later, they built an oil refinery complex in Minatitlán as well as an oil duct.

  On the 24th of December 1901, Porfirio Díaz, then president of Mexico, enacted the Petroleum Law, which, with the approval of the Mexican Congress, intended to give an impulse to the oil exploitation in Mexico and gave foreign investors the opportunity to invest in this sector. The first two concessions under this law were given to Edward L. Doheny and Weetman D. Pearson.

  In 1912, the government of Francisco I. Madero created a “special” tax for oil production and also ordered the registration of all the companies working in the oil extraction sector. Later, in 1915, the Technical Commission for Oil was created with the purpose of controlling the oil industry and levying taxes for oil extraction.

  In 1938, after two decades of oil bonanza, the Mexican government expropriated the oil industry. This was the result of several strikes in the companies as they failed to comply with the demands of the union. The strikes were supported by the Mexican government as a tribunal declared the demands of the workers to be valid. As a consequence of the strikes, the economy of the country was paralysed and the society demanded the intervention of the government to find a solution to this problem.

  On the 18th of March of 1938, President Lázaro Cárdenas del Río decreed the expropriation of the oil industry on the basis that the foreign companies did not abide by
the decision of a court of law and also, that they were hindering national sovereignty. Petróleos Mexicanos was created on the 7th of June 1938 to manage and operate the nationalised oil industry and, in order to prevent further problems, an article was added to the Mexican Constitution on the 9th November 1940. This article prevents concessions to foreign companies and specifies that the exploitation of hydrocarbons can only be done by the Mexican Government.

In the decades of the 1940s and 1950s the production of oil in Mexico grew from 51 million barrels per year to 86 million barrels per year due to the exploration and discovery of new oil reservoirs and the creation of several refinery complexes. New oil fields were discovered between 1960 and 1970 in the southern state of Chiapas and, in 1974, the oil production was 469 million barrels per year.

From 1976, PEMEX received more support as it started to be considered “National Interest” as it was the principal source of income for the government. During the decade of 1980 the strategy of PEMEX was to consolidate its production facilities and expand its refining and petrochemical capabilities.

In July 1992, the Mexican Congress approved the “Ley Orgánica de Petróleos Mexicanos y sus Organismos Subsidiarios” (Organic Law of Mexican Petroleum and Subsidiary Organisms) which established a thorough re-structuring of the company. This law included the creation of the following subsidiary companies:

- PEMEX Exploración y Producción (PEMEX Exploration and Exploitation);
- PEMEX Refinación (PEMEX Refineries);
- PEMEX Gas y Petroquímica Básica (PEMEX Gas and Basic Petrochemicals);
- PEMEX Petroquímica (PEMEX Petrochemical).

These four companies are subsidiaries of Corporativo PEMEX (PEMEX Corporate). Since then, the company has been deeply transformed with the objective of maximising the economic value of its operations and planning and executing investment projects which yield higher profits, following the guidelines stated in the “Strategic Plan 2000 – 2010”.
All the previous information in this section has been collected from the website of PEMEX (Petróleos Mexicanos (PEMEX), 2005).

- **Comisión Federal de Electricidad (CFE)**

In 1937, there were 18.3 million inhabitants in Mexico and only seven million (38%) had access to electric power, which was supplied by three privately-run companies. The demand was higher than the supply, the quality of the service was poor, and the charges for the service were excessive. One of the main problems of these companies was that they were focusing on providing electricity to urban areas, which were considered more profitable and avoided expanding their service to rural areas where more than 60% of the population was living at the time.

In trying to solve this last problem, on the 14th of August 1937 the Mexican government created the Comisión Federal de Electricidad (CFE, Federal Commission of Electricity). One of the first tasks of CFE was to build power generating facilities in order to satisfy the demand. CFE had the objective to supply electricity to drive irrigation and mill systems and providing energy for street lighting and housing.

In 1938 the generation capacity of CFE was a mere 64kW and, by 1946, this capacity had grown up to 45,594kW. As the generation capacity of CFE was increasing, the private-run companies stopped investing and they purchased the electricity from CFE and then, re-sold it to their customers at a higher price.

By 1960, Mexico had an installed generation capacity of 2,308MW of which 54% were generated by CFE, 25% by Mexican Light, 12% by American and Foreign Company and 9% generated by the rest of the companies. However, despite the efforts and investment, only 44% of the population of the country had access to electricity and, because of this, on the 27th of September 1960, President Adolfo López Mateos decreed the nationalisation of the power generation industry.

Since then, the National Electricity System was integrated, expanding the coverage of the supply and accelerating the industrialisation of the country. As a result of the nationalisation decree, the Mexican government bought the assets and facilities of the privately-run power generation companies.
One year later, in 1961, the installed generation capacity had grown to 3,250MW, which represented an increase of 40.81% in the capacity of generation in just one year. This expansion continued during the decades of 1960 and 1970, when nearly 50% of the public investment was applied to infrastructure projects and in 1971, the installed generation capacity was 7,874MW.

By the end of the decade of 1970, the installed capacity of the country, managed by CFE was 17,360MW. Despite a deceleration of investment, in 1991 CFE reached an installed generation capacity of 29,797MW.

In 2004, the installed capacity in Mexico was 46,177MW, including 18 facilities owned by privately-run companies (Productores Independientes de Energía, PIE). The generation of this capacity is distributed in the following way:

![Image](image_url)

**Figure 5.1 Generation installed capacity (Comisión Federal de Electricidad (CFE), 2005)**

As Figure 5.1 shows, nearly 20% of the installed capacity of Mexico falls into the PIE category (Productores Independientes de Energía – Independent Energy Producers). It is within this category that the main focus of this research lies, because these producers have to work along with governmental organisations (in this case CFE) and comply with their rules, requirements and objectives, while at the same time following their own. It is important to mention that before the creation of CFE and the National Electricity System, each company had its own isolated system which made interconnection and interoperability practically impossible. Therefore, one of the tasks of the National Electricity System was to define technical characteristics and rules to unify the isolated networks into one national grid. Amongst the characteristics adopted
was the use of the 60Hz frequency for power transmission and this set the start of the National Interconnection System.

The information presented in this section was collected from the website of CFE (Comisión Federal de Electricidad (CFE), 2005).

5.3.2 Current state of the Mexican energy sector

As the Mexican government has branded the oil and power generation sectors of “National Interest”, the projects to be carried out are going to be closely watched and audited. This auditing and watching is likely to happen as it did in the Banking sector. In 1982, all the banks in the country were nationalised; their accounts, assets and capital became the property of the state, and the government was in charge of management (Poder Ejecutivo Federal, 2003).

In 1990, the government headed by President Carlos Salinas de Gortari decided to reprivatise the banking sector. It started with opening the sector to foreign and private investors and it gradually moved towards a total ownership of the banks by privately-run organisations. This was achieved using auctions to offer the banks to the highest bidder. The rules of the auctions stated that only the 49.99% of the capital of the banks could be owned by private organisations but this moved towards a full private-owned schema within 10 years.

According to the BP Statistical Review of World Energy 2003 (BP, 2003), Mexico holds 1.2% of the world reserves of crude oil and 0.2% of the natural gas reserves. Its share of crude oil production is around 5% of the world production. Crude oil production has showed sustained growth in the 10 years from 1992 to 2002 and natural gas extraction was 40% higher in 2002 than 8 years earlier as shown in Figure 5.2.
In the same way, according to the Secretaría de Energía – Ministry of Energy – (Secretaría de Energía (SENER), 2007b), electrical power generation and consumption has grown steadily. From 2000, the participation of private (EPE) generators has grown to reach nearly 70TWh, contributing nearly 30% of the gross Power Generation, as shown in Figure 5.3.

This increase in power generation means that the growth of investment in this sector is likely to attract further investors from within Mexico and abroad.

As the price of crude oil continues at high levels and the production and consumption of electrical power in Mexico increases steadily, both sectors appear worthy of further investment. Also, Mexico is one of the largest oil exporters in the world. The income
generated by selling oil to foreign countries is the primary source of income financing the government.

One of the expected outcomes of the opening of both the Oil and Power Generation sectors is that multinational companies will invest in Mexico, carrying out projects along with the government and at the same time use their expertise to generate better services for the country and incentive competition. This point is an important one, because the main reason for the opening of these sectors to private investments is to add value to the goods and services, using the fewest resources while looking for the best outcomes.

Legal requirements and procedures are key components of public sector organisations, regulating practices and changes, consequently delaying modifications. Public sector organisations worldwide are under pressure to increase the efficient use of resources while delivering improved services. In this respect, the Mexican public sector is no different from those in other Latin American countries where economic reforms within governmental organisations have been implemented (Panizza & Philip, 2005). The government is generating reforms that have changed the way public sector activities are carried out and has led its organisations (Ministries, Regulating Commissions, etc.) towards size-reduction policy making (Arellano Gault, 2000). These new policies are leading the government to work on a market-based framework, implementing the use of private-sector management tools, to downsize and eliminate waste, while revising its procedures and structures to comply with these policies (Arnaboldi et al., 2004).

Public sector and private organisations may have different practices, however, both are looking to reach the best outcome for projects with the most efficient use of resources. Due to these reasons, the government is gradually adopting project-based management and formal project management methodologies (Crawford et al., 2003) to successfully complete its projects. The criteria for “successful” projects vary from one source to another, and the most commonly accepted issues to be addressed are cost, time and high quality (Atkinson, 1999). The fact is that reality shows these criteria change at different stages of the project development and not one of them can be specifically named as the most important and, therefore, there is a need for well-established project management throughout the life cycle of the project.
Both the project manager and the organisational leadership must be committed to the project in order to ensure its success and governmental organisations in Mexico are starting to adopt this approach. Top management commitment helps anticipate problems and drive projects towards completion. However, often in the public sector, commitment and support from top management is not enough because politicians have a strong influence in these organisations (Arnaboldi et al., 2004). As result of the future inclusion of private organisations within the sectors identified earlier, both government and private organisations will have to be committed to the achievement of project objectives. This also means modifying the way projects are carried out, because the political nature of public organisations demands the involvement of team members deemed not to be directly related to the project itself (Arnaboldi et al., 2004). When private companies invest in Mexico, they bring to the projects their organisational culture, as well as the individual culture of each one of their employees who work with the employees of the Mexican governmental organisations. This could create potential conflicts and it could also create “social networks”, valuable for gathering information and establishing future alliances (Kirton & Greene, 2000).

It is certain that neither private organisations nor the government want to lose money or have their projects fail. Private companies do not want projects to fail because it could lead to losing future contracts and possible penalties or cancellation of already agreed contracts. Governments do not want projects to fail because they do not want to be in the public eye and receive the blame for failed projects.

An organisation can discover how structures that are taken for granted can be affected by cultural factors by using “cultural lenses”, which can help the organisation acquire a higher level of achievement in their projects (Egri et al., 2000). This can be done by addressing these cultural issues and by understanding how, in specific situations, project managers may look for strategic objectives other than profitability and project completion (Athanassiou et al., 2002) by relying on a biased personal element which, in this case, is their own culture. These issues are more relevant when they are addressed in the public sector, where changes are more difficult to implement (Arnaboldi et al., 2004) due to tighter constraints derived of laws and regulations governing organisations in the sector. These organisations have to address the issue that the cultural environment enhances their cultural foundation.
5.4 Cultural foundation for project management

Accepting that the cultural environment affects projects is the first step to achieving success when carrying out a project because project managers and team members have to be aware of the cultural elements surrounding their projects. Once this point has been acknowledged and understood, the next task is to develop and follow principles to successfully manage a project leading to delivery excellence. These principles have to be supported by a set of guidelines which allow the project managers using them to manage projects of any size or complexity. They also have to be embedded with common-sense simplicity and non-technical nature appealing to all constituencies in any organisation and, as a result, facilitate their widespread adoption at a single project site, or over multiple sites, onshore and offshore, in a distributed team management environment (Jonsson et al., 2001).

In order to create a project culture in organisations, Schneider et al. (1996) developed six steps to implementing “total organisational change” leading to a proper project management culture. The first step relates to ensuring that the organisation is prepared for a major organisational change. If the management of the organisation is not trusted, any attempt to change will be treated with scepticism if not discarded completely. The management has to ensure that this change is for good and it is not just a passing fad which has to be implemented (Parker & Bradley, 2000).

Parker & Bradley (2000) agree that change is always difficult in an organisation and to help to evaluate the readiness of the organisation for it, asking the following questions can give management a glimpse of what is about to come:

- Is employee morale high?

- Does the leadership have a history of successfully implementing major changes?

- Is management known for tackling tough decisions and doing the “right thing?”

If the answer to these questions is yes, change will be embraced. If the answer is no, management must be consistent and plan for resistance. Constancy of purpose will overcome scepticism in the long run. Despite the answer to these questions, management has to keep in mind that they will face resistance to change (Trader-Leigh, 2002).
The second step requires the organisation to ask itself if the proposed change is consistent with the existing organisational culture. If decision making is centralised, if the organisation is a traditional vertical hierarchy, if communication is primarily up the chain and if conflict is escalated rather than resolved locally, the change will require significantly more time, effort and attention. If, on the other hand, the organisation has already spent a lot of time and effort establishing a team-based culture, the change will be accepted much more readily (Martins & Terblanche, 2003).

Planning the change in as much detail as possible is step three. This is where creation and deployment of a project management methodology, and establishment of a project management office, come into play. Specifying why the change is necessary, what is threatening the current organisation and why there is a proposed change will defeat the threat (Ahmed & Simintras, 1996). Spending time and money developing the methodology, processes and policies and making it clear to people that they will receive training, will be expected to implement the new practices, and will be rewarded for doing so.

Step four incorporates the fact that the organisation has to ensure that the reward system is structured to motivate employees to focus on implementing the project management methodology. People are smart and they figure out how the organisation rewards system works. Management must reward good project behaviour and discourage ad-hoc approaches. For example, if the new project methodology requires risk plans and management never asks to see a risk plan or even asks about the top risks and associated response strategies then people will stop addressing risk (Martins, 2000). They will return to their old ways which have proven to be effective with predictable results. This implies that senior management knows what the methodology is, which is not always a valid assumption (Alpander & Lee, 1995).

As with any system, allocating resources to maintain a project management system is part of the total system life cycle cost and according to Schneider et al. (1996) it counts as the fifth step. During the change to a project culture, a project office should be set up to help implement the change and to actually carry out project duties. The scope of the project office can vary between an informal group of passionate individuals to a well-established, permanent organisation (Kerzner, 2003). Either way, the project office is responsible for updating the methodology, providing expert help to project teams,
tracking and reporting project status, even managing projects for the more formalized project office. This takes resources and it is not really optional if the change is to last.

Monitoring the progress and effectiveness of the change to the organisation and adjusting as necessary is the sixth step according to Schneider et al. (1996). This step is a fundamental project management practice as performance must be monitored and variance eliminated to bring about lasting change (Snyder et al., 1996). Periodically checking to make sure the change is taking effect, and that the desired project results are achieved. If this happens, it can be said that the job has been done. If not, then there is the need to see where the resistance is or where the lack of support exists and take actions to overcome these obstacles. Project management will improve cost, schedule, and technical performance and therefore (Graham, 1993), it will lead to satisfied customers. At the same time, it does fail in some organisations due to the lack of a project management culture (Kerzner, 2003). When talking about changing culture, it is about changing the set of shared beliefs, values and expectations existing within the organisation. To undertake change as basic as this, a methodical approach has to be followed (Hall, 1999). The six-step plan just described can lead to an improvement in the chances of success, as in some organisations, increasing payment, rewards, allowing staff to relocate within the organisation has definitely improved the success of their projects (i.e. Royal Dutch Shell incentive scheme, BP staff rotation) (Ives, 2005).

The complex functions related to the project management culture of an organisation are required to be closely linked to the organisation as a whole and closely associated with all the elements present in the organisation. These elements can be encapsulated in the sentence “the way we do things around here”. Breaking up this sentence provides us with five distinctive elements which can help to measure how the project management culture has permeated all levels of the organisation (Firth & Krut, 1991; Graham, 1993; Wang, 2001).

The first part, referred to by “the way”, is linked to the processes or approach undertaken by the organisation and how these processes are being carried out. It is defined by the integrated processes, the systemic nature of the processes, the phases of the project life cycle, the definition of a start and an end, the speed of delivery, the discipline and control of the processes, the customer or results orientation of the project, the change brought about by the project, and the elements linked to continuous
improvement and learning (Huq, 2005; Andersson et al., 2006; Grant & Pennypacker, 2006). All these elements describe how the project processes are linked to the project life cycle.

Following the break-up of the original sentence, the “we” part refers to the people directly linked to the project: who and for whom, or more accurately, the project team and the stakeholders. Top managers, sponsors, owners, line managers, project leaders, team members, customers and users, suppliers, contractors and regulators play an important role in defining the people in the project. Therefore, their interactions have to be closely monitored in order to maintain the project under control (Boyd, 2001; Bryde & Robinson, 2007). Some of the elements categorising the people in the project are the mindset of the people (if they are results-oriented, disciplined, flexible, team players, willing to learn, change accepting or risk oriented), their competence (regarding the project and its elements), commitment, interdependence, trust and trustworthiness, ethics, ability to create tight interpersonal relations, openness and communication, can manage conflict and if they take calculated risks. The presence of these elements in the people related to the project can provide an advantage that the project manager has to exploit in order to take the project to a successful completion (Singh, 2006).

The methodology followed to carry the project out accounts for the “do things” part of the initial sentence, meaning what the approach will be to do these things. It is composed of two sub-categories, namely the structures and the systems followed to ensure that the project is completed according to the initial specifications and fulfilling the requirements, on time and within budget (Winch, 2006; Jugdev et al., 2007; Müller & Turner, 2007). The elements of these two sub-categories are the project and communications plan, work breakdown structures, role and responsibilities definition, interdependence structures, team approach, leadership, risk management, specifications, deadlines, milestones, measurement and control structures and lesson learnt systems. These elements account for the project management methodology the organisation follows in order to ensure the success of its projects (Hyvärä, 2006; Jugdev, 2006).

The final part of the initial sentence (“around here”) accounts for the environment of the project, or in other words, where the project will be carried out. This category has two sides, the internal, regarding the project team surroundings and the external, involving the whole organisation, peripheral organisations and areas (Lok & Crawford, 2004).
The environmental elements impacting this category are related to the strategic emphasis of the organisation, the support provided by the upper management, the input from the users and customers, the development of the project team, the support given to the team as they work, the information systems supporting the organisation and in general, the support of the organisation as a whole (Hong et al., 2004).

As the cultural foundation of an organisation establishes what its environment is and how projects are carried out, the importance of establishing what the boundaries between cultures becomes paramount as, in the case of culture, these boundaries become blurred.

5.4.1 Cultural boundaries

One implication of the strengthening of economic ties within the North American Free Trade Agreement (NAFTA) region is the increased importance of developing effective working relationships across national and cultural boundaries. In particular, there is a greater need to accommodate behaviours of other cultures when individuals from Anglo and Latin American cultures work together (Kelley et al., 1987; Morris & Pavett, 1992; Stephens & Greer, 1995). This mutual accommodation encompasses a vast array of managerial behaviours. One significant category of these behaviours that is an important part of a manager’s effectiveness is the ability to influence other members of the organisation to obtain desired outcomes (Yukl & Falbe, 1990).

Managers, in the attainment of their work objectives, often need to direct subordinates. Frequently these managers also need to influence their superiors, over whom they possess no formal power (Organ & Bateman, 1990). To exert this type of influence, a manager must develop and utilise a set of informal influence strategies. Research comparing managers from Asian and Western cultures has shown that whereas both types of managers use all the various types of strategies available, national culture appears to play an important role in determining preference for certain influence strategies (Ralston et al., 1995) The successful use of upward influence strategies has been shown to be instrumental in managers attaining desired outcomes (both professional and personal) from their superiors. Therefore, upward influence relates to the effectiveness and success of both the organisation and the individual. Since influence style is a relevant part of the overall superior–subordinate relationship, and since the ability of superiors and subordinates to function together effectively clearly
affects organisational performance, managers can benefit from enhanced understanding of cultural differences in influence styles (Ralston et al., 1995) in order that they may appropriately exercise influence within culturally mixed situations.

As such, NAFTA heightens the need for individuals from different cultures of North America to work together more closely for organisational success because it encourages greater efficiency and competitiveness in an open-market environment (Taylor, 1996). Given the importance of individuals from NAFTA countries being able to work together effectively, and given the relevance of influence style to workplace harmony and productivity, the upward influence styles of managers from the NAFTA countries is recognised. In addition, whereas it can be argued that there may be regional cultural differences within the United States and Mexico, it is believed that the regional difference most likely to have an impact on influence style behaviour (as well as basic values) will be found in Canada (Egri et al., 2000).

In the United States, the predominant culture is Anglo, and in Mexico, Latin; however, in Canada there are two clear-cut geographically based cultural groups. The recent sovereignty association referendum held in Quebec epitomises the substantial cultural differences between French-speaking Francophones (Latin culture) and English-speaking Anglophones (Anglo culture) (Egri et al., 2000).

When managing across cultural boundaries, a key assumption is that cultural differences are likely to happen and therefore they have to be managed (Darling & Fogliasso, 1999). Ideas, expectations, and behaviour can be culturally unique. On certain occasions, discussion and communication can be hindered because each one of the sides involved thinks and behaves differently; therefore, the potential for misunderstandings and disagreements grows bigger. These cultural differences vary from the attention people give to specific details, to language, history and political systems, and awareness of differences, is the main subject when managing intercultural teams (Fisher & Härtel, 2003). Institutionalist theory, cross-cultural management, and diversity management have not been developed in parallel but in sequence with the consequent delay in achieving advances in integrating these subjects. Moreover, none of these subjects have been studied within the boundaries of the Mexican culture and cross-cultural management is one of the elements addressed in this research.
Studies of differences between public and private sector organisations indicate that there are variations amongst these institutions (Snyder et al., 1996; Eskildsen et al., 2004). However, most of these studies have been conducted in countries where the civil service is a well-established institution. In the last decade important changes in the public sector have been achieved worldwide (McHugh & Brennan, 1994; Coram & Burnes, 2001). While public-sector managers and staff previously carried substantial responsibility for policy development and implementation in Latin American countries, policy reforms supported by international organisations and national governments are shifting responsibility for renewed economic and managerial development towards strong private organisations (World Bank, 1983; Moussios & Legge, 1991).

The argument that privatisation will be more efficient is based in part on an assumption that private-sector managers and employees are different, i.e. either inherently or situationally more motivated by efficiency-related factors than public-sector employees (Snyder et al., 1996). However, Eskildsen et al. (2004) stated that while people who have worked in both types of organisations remain the same what changes is the organisational surrounding.

The field of international management owes a great debt to cultural anthropology, a field that has focused on cultural distinctiveness. An example of an anthropologist crossing over to the area of international business is discussed by Edward T. Hall in his article “The silent language in International Business” (Hall, 1960). In this article, Hall states that a person is sensitive to the culture of a foreign counterpart by realising that his or her perception of time, space, material objects, relationships and agreements is different, then it is most likely to be accepted that it is different to his/her own. Therefore, in business or in projects, people have to be aware of the possibility that their counterparts understand things in a different way because their perceptions are different.

It is important to note that international projects have an intercultural dimension due to the links tying the privately-run companies with their employees as well as the culture of the country where the project is being carried out. Most of the employees of these international companies are likely to be from different national and cultural backgrounds than that of the country where the projects are being carried out and these differences could represent a competitive advantage for the companies within which these people are working (Fiol, 2002). A typical competitive advantage could be that the
employees have a good level of understanding of the language where the project is being carried out (Fiol, 2002).

Finally, as Egri et al. (2000), Athanassiou et al. (2002) and Zabludovsky (2001) point out in their research, Mexican culture is like no-other due to its geographical position as a “link” between the industrialised and economically strong North American countries and the Central and South American developing countries. Also, the Mexican cultural syncretism plays an important role when foreign organisations invest in Mexico.

Three hundred years of Spanish domination moulded the Mexican identity. The amalgamation of indigenous customs and traditions with those taken to Mexico by the Spanish conquistadores gave the Mexicans a different background and cultural identity which identifies them. The family continues to be the strongest social unit and even the most powerful and biggest organisations in Mexico remain controlled by families (Athanassiou et al., 2002). So, from these points, even though the oil extraction and power generation are scheduled to open up for foreign investment, it is likely that these sectors will remain closely watched and their objectives, goals and operations to be aligned with the Mexican cultural background (Islas et al., 2003). All these issues (cultural background, family links, investing opening-up) have inspired the researcher to start this particular study.

5.5 Conclusion

The introduction of a project management culture in organisations helps them to achieve project success and to make their projects follow a rather similar approach, despite their initial settings, ongoing needs, customers and areas involved. An organisational project management culture requires the organisation, as a whole, to be involved in the process, its employees to understand how the projects are aligned with the organisational strategy and the top management to support the projects in order to achieve the strategic goals of the organisation as stated before in Sections 5.2, 5.3 and 5.4.

The two main organisations in the energy sector in Mexico, Petróleos Mexicanos (PEMEX) working in the oil extraction industry and Comisión Federal de Electricidad (CFE) working in the power generation industry, have long been regarded as “pillars of the Mexican economy” and their operations have also been regarded as far from
following a project management culture. The signing of the North American Free Trade Agreement (NAFTA), which came into effect on the 1\textsuperscript{st} of January 1994 effectively put these two organisations under pressure to modernise their operations and to streamline their processes in order to gain a competitive advantage in the global markets. Although the PEMEX and CFE operations and markets are protected under Mexican law and their market was regarded as a monopoly, reforms to the Mexican constitution as well as pressure from international organisations and markets have led the Mexican government to open these sectors to foreign investors. Therefore, these two companies have been forced to improve their operations, projects and to maximise the outcome of such projects.

Knowing the elements that compose the project management culture allows organisations to align their project management culture with the organisational strategy while at the same time allowing all members of the organisation to embed themselves within the project management culture. The people, processes, systems, structures and environment surrounding the project, and therefore the organisation, allow the organisation, project managers and senior management to closely control and understand what the status of the project management culture is in the organisation and what areas have to be exploited or improved in order to achieve project success.

After reviewing the literature regarding project management, its trends, culture and project management culture, the following Chapter presents the methodological elements followed during the course of this study.
Chapter 6  Methodology

6.1 Introduction

This Chapter presents the theoretical framework surrounding the rationale for the methodology used in the research. As this study aims to understand several topics within project management and culture, a solid methodological background is required in order to provide the research with the tools for successful completion. One issue which is paramount for this research is the fact that the study was carried out between Mexico and the United Kingdom. As the project management profession has been long established in the United Kingdom, with several project management methodologies being developed by British governmental institutions, academic organisations or private companies, the researcher concluded that this field is mature, along with the availability of literature, data and practitioners. On the other hand, project management in Mexico, although present, does not have similar support, from either the government or academia, therefore making this field suitable for research. It is not the purpose of this Chapter to present the data but to assess the methodological paradigms surrounding the research.

First, in section 6.2, this Chapter presents the research background. This Chapter continues presenting the limitations and shortcomings of previous research in section 6.3. The rationale for the specific techniques followed in this study are presented in section 6.4, along with the research objectives of this study and the description of research questions developed for undertaking the research. The research design is described in section 6.5, presenting the rationale for the philosophical approach followed by this study. Section 6.6 covers the research methods while section 6.7 presents the data gathering techniques used during this study, such as observation, survey, interviews and triangulation. The research process is explained in detail in section 6.8 encompassing the particulars of the study, the material collected and the details of the participants and the sample including design and application of the surveys and the verification of results.

6.2 Research background

The value of research is diminished if all the relevant aspects have not been taken into consideration throughout the research process. To ensure that all the necessary detail was carefully considered and that a clear conceptualisation of the entire process was
achieved. Before going further an important question has to be answered: What is good research? High-quality scientific research generates reliable data, which is derived from professional conduct that can be used for decision-making in an organisation (Cooper & Schindler, 2001). In their study, Kerlinger & Lee (2000) stated that good scientific research has to include good quality theory, which follows public and open procedures, providing precise definitions through a systematic approach; the findings of the research have to be replicable, while the data collection and sampling must be objective; finally, the research problems have to be clearly addressed, followed by an understandable explanation of the phenomenon/phenomena studied.

Thus, good-quality research follows the scientific approach standards, which follows the steps of the scientific method along the project lifecycle, as shown in Table 6.1:

<table>
<thead>
<tr>
<th>Characteristics of good research (Cooper &amp; Schindler, 2001)</th>
<th>Project lifecycle stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly defined purpose</td>
<td>Initiation phase</td>
</tr>
<tr>
<td>Well-planned research design</td>
<td>Planning phase</td>
</tr>
<tr>
<td>Application of high ethical standards</td>
<td>Implementation phase</td>
</tr>
<tr>
<td>Adequate analysis</td>
<td>Implementation phase</td>
</tr>
<tr>
<td>Unambiguously presented results</td>
<td>Implementation phase</td>
</tr>
<tr>
<td>Justified conclusions</td>
<td>Closure phase</td>
</tr>
</tbody>
</table>

Table 6.1 Good scientific research characteristics along the project lifecycle (Cooper & Schindler, 2001)

According to Cooper & Schindler (2001), to reach high standards when conducting scientific research, the first step which has to be taken during the initiation phase is to clearly identify the purpose of the research, providing it with a scope and a well-defined set of objectives acting as guide points helping to keep the research within limits and preventing it from going off track. In order to keep the research within these limits, in the planning phase, the research has to be provided with a thoroughly planned, concise and precise research design. This research design provides the basis for a more systematic assessment of the methodological components that the research will follow to achieve its final outcomes. Taking into account that the research has to contribute to general knowledge, Randall & Gibson (1990) state that this contribution has to be achieved by applying the highest ethical standards at the implementation phase to ensure that the research does not fall into any ethical controversies and that its results and outcomes are not in contravention of the scientific ethos. If this scientific ethos is thoroughly followed and the research attaches itself to it, the analysis of the data will be performed adequately, following carefully described techniques, methodologies and
tools which will generate results which could prove useful to achieve the objectives stated on the planning phase (Morgan & Smircich, 1980). A very important part of any scientific research is to present the results of the analysis in an unambiguous manner so the people wishing to understand those results or those who want to replicate the research could easily understand their methodology (Morgan, 1980). This is one of the most challenging parts of any research as on a great number of occasions researchers present their results in a rather complicated format (Machamer et al., 2000). Finally, in the closure phase, the conclusions of the research have to be presented in a justified way, linking them to the previous five characteristics and maintaining them within the boundaries set by the objectives established at the beginning of the research (Hopf, 1983).

This research followed the scientific approach described above while, at the same time, complying with the research criteria described below.

If the two conventional scientific approaches are quantitative and qualitative, and the two main paradigms are modernism and post-modernism, then most of the earlier research efforts in the field of project management could be described as being tackled using a quantitative approach in a modernistic paradigm. This is due to the pressure of scientists to ensure that research is testable. Nevertheless, since the early 1990s the post-modernist paradigm has evolved and approaches to science have become more qualitative. The methodology used for the theory building process in this research comes from both paradigms, as shown in Figure 6.1.

![Figure 6.1 Theory building and testing process](Image)

The two general approaches to reasoning which may result in the acquisition of new knowledge are inductive reasoning, which starts with the observation of specific instances and seeks to establish generalisations (also known as the scientific approach
or theory building) and deductive reasoning, which starts with generalisations and seeks to see if these generalisations apply to specific instances (also referred to as theory testing) (Gay & Diehl, 1992; McShane & Von Glinow, 2005).

The researcher observes the phenomena and gathers information from several sources which led to developing a preliminary theory. From this preliminary theory, research questions are developed with the finality of breaking down the main phenomena into smaller and easier to handle sections. These research questions must include the definition of measuring theories in order to validate the answers to the questions. Finally, the research questions are tested against the information gathered in order to answer them. It is important to mention that this is an iterative process because if the answers to the research questions do not fulfil the requirements of the preliminary theory, the process has to be carried out again until the research questions prove their validity for the research (McShane & Von Glinow, 2005).

It has to be emphasised that it is not a case of following an either/or methodology as the two approaches can be combined. This is also referred to as a multiple approach or triangulation (use of several frames of reference to analyse the same set of data (Leedy, 1993)). This theoretical framework provides the background to the research decisions applicable in the present study.

6.3 Limitations and shortcomings of previous research

There have been several weaknesses in previous research and discussions on project management, project management methodologies and project management culture. These discussions lack an explicit theoretical framework which takes into account the complexity of the interdisciplinary and systemic nature of a project management culture, as well as the intricacies of joint projects between privately-run companies and Latin American governmental organisations.

The research of Zabludovsky (2001), Egri et al. (2000) and Stephens & Greer (1995) even though specifically addressed to Mexico, do not provide the opportunity to link it with foreign privately-run organisations. When talking about project management methodologies and their application to the public sector, the research of Arnaboldi et al. (2004) shows what the obstacles are that a project manager has to overcome in order to use project management methodologies in the public sector. However, their research is
not specifically addressed to Latin America but Italy, even though Italy and Latin
America share similarities when talking about behaviour and bureaucracy. Pagell et al.
(2005) show the importance of national culture, and again, it is not particularly focused
on Latin American governmental organisations.

Apart from Wang (2001), who provides a systematic approach to researching project
management culture, there is no other literature on how to deal with this issue in
multicultural private/governmental organisations environment. Wang (2001) states that
project managers are committed to the pursuit of project success, despite their
organisational background and that a systematic approach, composed of commitment,
integration, flexibility and performance form a strong background supporting project
management culture. Also, Swift & Lawrence (2003) explain how the business culture
of the United Kingdom could be extrapolated to make it work in Mexico, thus opening
the door to the use of methodologies developed in the United Kingdom in Latin
American countries.

De Witte & Van Muijen (1999) have mentioned their concern about organisational
culture researchers failing to address a significant number of aspects when conducting
their research. They have developed a set of questions which they suggest should be
answered by the researcher in order to conduct fruitful research and gather valuable
results. These questions are:

- What are the dimensions or domains of organisational culture?
- Which culture(s) does the researcher intend to study?
- What is the appropriate research method?
- At which level should the data gathered be analysed?

This present study has attempted to take into account these questions throughout the
research design process.

6.3.1 Lack of integrating theory

In his research, Wells (1993) is critical of researchers overly relying on quantitative
methods and therefore lack theorising and testing in natural settings. Wells (1993) also
notes that a significant number of researchers use sophisticated co-relational methods in order to imply causality. Deshpande (1983) also criticises scholars for their lack of involvement in theory generation; the methods social sciences have historically developed are those best at confirming theories rather than discovering them.

- **Methodological problems**

Research in the social sciences has historically emphasised deductive processes. In many cases, these processes have been applied prematurely, before an adequate understanding of the fundamental concepts has been developed (Deshpande, 1983; Weisberg et al., 1996; Patton, 2002; Ritchie & Lewis, 2003).

There are too many variables in project management for the research to be other than the exercise of contextual judgement in situations. However, the research community has encouraged an approach more suitable to “hard science” than a multivariate social science approach (Pearson, 1995).

Researchers tend to value what they can measure and when doing research they need to learn to measure what they value (Adler, 1983). Deriving from this, the main problem is how to symbolise the relationship between what is represented and the object that represents it. An example of this statement would be the difference between what the responses are to a question in a questionnaire, what those questions actually say and what the respondents mean to say.

**6.4 Rationale for specific techniques**

Locatelli & West (1996) describe researchers working in the organisational culture field as “blind researchers amongst elephants”. According to their research, the methods used to approach culture within organisations have to be carefully devised and considered since there are variations on the amount and quality of data gathered using different methodologies.

Zamanou & Glaser (1994) note that there is inconsistency in the conceptualisation of organisational culture and project management culture. As each organisational culture is unique in its own environment (and the same statement is applicable to project management culture) researchers working in these fields have been employing a variety
of qualitative measures. Rousseau (1990) proposed that the appropriate method to assess culture depended solely on the elements the researcher chooses to examine.

Gummesson (1999) states that qualitative methodology and case studies provide powerful tools for research in the fields of management and it can be argued that qualitative research is useful in an interdisciplinary field such as the one this particular research addresses.

### 6.4.1 Research objectives

The aim of this study is to determine and assess the factors of Mexican culture impacting projects carried out by multi-national companies working along with governmental entities in Mexico by comparing them to those in the United Kingdom.

In attempting to meet the aim of the study, the author devised the following research objectives:

a) To examine the role of Mexican culture as a key factor when managing projects. This is to achieve a better understanding of how national, regional and organisational culture impact project management and team working.

b) To identify the extent to which the cultural factor could prove to be a competitive advantage for a multi-national organisation working along with any Mexican Governmental entity. This will aid the understanding of how a team in such a multicultural-background project can give an organisation a competitive advantage and help a project to be completed within schedule and within budget.

c) To identify the nature of the best practices when managing multi-cultural teams/projects. If successful, the objective is to create an “achievement list” that will help organisations to verify if they are managing their projects/teams using the best practices available.

### 6.4.2 Research questions

In order to develop valid questions, a clear link needs to be made between concepts and data. Research may set out to develop or test concepts, that is either theory-building or theory testing research (Croom, 1999).
The literature search is intended to help address issues of relevance and contribution to knowledge (Rowley, 1999) and to specify the contribution, the research has to answer relevant questions. As Brown & McIntyre (1981) specify, “the research questions arise from analysis of the problems of the practitioners in the situation and the immediate aim then becomes that of understanding those problems.” Before starting to develop the research, it is vital to understand the problems faced by the researchers, which can be addressed by answering the following questions (Croom, 1999):

a) What research already exists in that topic?

b) Is the theory of this topic well developed?

c) Are there gaps in current research?

d) Is this topic of current concern to managers, researchers, policy makers and funding bodies?

What research already exists in the topic of project management culture? There is previously published work in project management, such as that of Cleland & King (1988), Kliem et al. (1997), Crawford & Bryce (2003) and Bryde (1997; 2003b; 2003a). Also examples of published work about culture as a key factor on management includes Evans et al. (1989), Granell (2000), Swift (2002) and Ogbor & Williams (2003). Furthermore, the research of Hofstede (1980a; 1980b; 1990), House et al. (1997), Inglehart (1997), Trompenaars & Hampden-Turner (1997) addresses the issue of culture in the workplace while other authors address cultural elements in projects (Bátiz-Lazo & Wood, 2001; Khera, 2001; Pressey & Selassie, 2003; Swift & Lawrence, 2003; Whalley, 2004).

Are theories on project management and culture well developed? The research of Swift & Lawrence (2003) shows how small to medium enterprises from the UK have to deal with the language barrier when working in Mexico and how understanding Mexican culture is an important factor of success. Debrah & Smith (2000) address the impact that globalisation has on the management of a project in Mexico and how new challenges, such as dealing with the Mexican business culture (Trebilcock, 1996), have to be sorted out. Also, the research of Batiz-Lazo & Wood (2001; 2003) covers the issues addressed by the banking sector when the deregulation started in Mexico. So far, there is no
evidence of specific research covering the Mexican culture and project management in Mexico or the intertwining of the project management and foreign organisations working along with Mexican governmental entities.

Are there gaps in current research? After reviewing the literature, gaps in the research are evident, as there is a lack of research involving public and private organisations in Latin American countries, specifically in Mexico. Although Zabludovsky (2001), Lenartowicz & Johnson (2003) and others (Morris, 1991; Bauer & Quintanilla, 1995; Kessler, 1999; Egri et al., 2000; Breda-Lapeyre, 2002; Husted & Serrano, 2002; Romero, 2004; Crandall et al., 2005) address issues of project management, culture and public and private organisations in Mexico, there is no research integrating these issues. Since the signing of the North America Free Trade Agreement (NAFTA) in 1992 two of the most important sectors in Mexico (power generation industry and the oil industry) are starting to open up to co-investment, allowing private-run companies to participate along with the government in projects to be carried out in these sectors.

Is this topic of current concern to managers, researchers, policy makers and funding bodies? Ettlie (1997) and Egri et al. (2000) suggest that Mexico represents a different scenario, worthy of consideration due to its importance as a link to the North American market, its position as an oil producer and finally, the size of its economy.

External international organisations, such as the International Monetary Fund (IMF), the World Bank, the World Trade Organisation (WTO) and the Organisation for Economic Co-Operation and Development (OECD) are interested in the opening up of the above-mentioned sectors in Mexico and the opportunities such opening up presents to multinational companies.

The Mexican government is also likely to be interested in the outputs of this research. Understanding the implications of foreign companies investing in these sectors could help the government in selecting the best participants and practices for these sectors to achieve the best outcome for the agreements with privately-run companies. Also, foreign companies will be more interested in investing in the country if the legal environment is well established and regulated and all the rules, roles and responsibilities are clearly defined before starting projects.
Now that these four questions have been answered, the research questions for this research study can be stated as:

1) How do cultural issues impact projects, specifically how does the Mexican culture impact projects being carried out between multinational organisations (i.e. BP, Royal Dutch Shell, Repsol-YPF, etc.) and Mexican governmental entities such as Petróleos Mexicanos (PEMEX) and the Comisión Federal de Electricidad (CFE)?

2) How can a multi-cultural team provide a competitive advantage for a project with a multi-cultural context which is being carried out within a public/private framework in Mexico?

3) What are the key success factors for a project which is being carried out in a multi-cultural environment in Mexico?

6.5 Research design

The main purpose of research is to contribute to knowledge and create or discover useful information, which once analysed and interpreted could lead to the development of new theories and concepts. In order to achieve this, the research has to be designed and has to be linked to a methodology.

“...the research process is not a clear cut sequence of procedures following a neat pattern but a messy interaction between the conceptual and empirical world, deduction and induction occurring at the same time.” (Bechhofer, 1974)

Authors discuss that the critical approach as well as the type of research methodology to follow depend on the field where the research will be carried out: i.e. operations, project management or business (Meredith et al., 1989; Gill & Johnson, 2002). Several authors such as Hunt (1991), Johnson & Duberley (2000) and Riege (2003) argue that research in the field of management is now assuming a more “realistic” perspective, trying to understand how human relationships develop and how human processes can be applied into a practical approach to problem solving. The philosophical approach reflecting this perspective is known as “critical realism”.

As a basic premise, critical realists accept that the social world does not behave in the same way as the natural world does, therefore it cannot be studied following the
methods used for predicting events in the world of natural objects (Byrne, 2002). Critical realists argue that our knowledge of reality is a result of social conditioning and, thus, cannot be understood independently of the social actors involved in the knowledge derivation process (Bhaskar, 1978). However, it takes issue with the belief that the reality itself is a product of this knowledge derivation process. The critical realist asserts that "real objects are subject to value laden observation"; the reality and the value-laden observation of reality operate in two different dimensions, one intransitive and relatively enduring; the other transitive and changing. Johnson & Duberley (2000) state that critical realists believe that social sciences can provide certainty about the reality of a phenomenon. Moreover, Schostak (2002) argues that critical realism explains the causes and ethical principles which draw values from facts. To achieve this, critical realists construct several views of one reality, aiming to understand the specified phenomenon according to each relative moment in time and space (Riege, 2003). Bhaskar (1978) states that critical realism gives priority to causal powers over event regularities, emphasising procedures to formulate knowledge and therefore, creating a bridge between the theories and the procedures. Figure 6.2 shows the philosophical distinctions between various schools of thought. This research takes a critical realism approach, based on the work of Bhaskar (1978), Archer (1995) and Sayer (2000).

Figure 6.2 Philosophical approaches in management research (Johnson & Duberley, 2000)

Figure 6.2 indicates that the certainty of realists is tempered by the knowledge that there will be differences between the real world and their particular view of it (Johnson & Duberley, 2000; Riege, 2003) and to increase certainty realists create various views of reality. In order to reach the above mentioned levels of reality, critical realists identify
three different levels or ontological domains of reality: the empirical, the actual and the real (Bhaskar, 1978) and each one of these three levels (or strata) allow the researcher to view the phenomena from a different perspective (the real domain are generative structures or causal mechanisms, the actual involves events resulting from various real tendencies and counter-tendencies in specific initial conditions and the empirical domain involves observations or measurements of actual events and, in some circumstances, underlying structures or mechanisms). Following the placement of Critical Realism in the lower left quarter of Figure 6.2, this particular research could be placed exactly here, as this is the philosophical approach followed during its development (highlighted as a dark-filled rectangle).

According to Patton (2002) critical realism makes use of research methods that have an inductive nature for discovering and building theory, rather than testing theories following analytical generalisations therefore allowing important dimensions and unexpected themes and patterns to be identified from the information gathered. When phenomena are not fully understood and they still remain to be discovered, critical realism is a suitable approach for gaining an insight into the experiences of the participants that are experiencing the phenomena (Riege, 2003).

Mingers (2004) states that critical realists attempt to construct more robust explanations about phenomena occurring within an organisation by searching for theoretical and methodological constructs which can explain the world in a much more reliable way than others. Therefore, this involves creating several explanations for such phenomena and debating them with a critical view. Archer (1995) and Mingers (2004) argue that critical realism attempts to go underneath the events that can be seen or empirically observed and taking them to a deeper level of reality where previously unobservable entities or mechanisms are now visible and can be identified as responsible for triggering the observed events.

In contrast to those approaches that adopt philosophical reflection after the event (such as constructivism and positivism) Bhaskar (1978) argues that critical realism sees philosophy as operating at the same level as methodological issues. Philosophical considerations are an essential part of the research process and the continued success of a philosophy is considered to be conditional on its success as an under-labourer to the research process (Bhaskar, 1978; Sayer, 2000). Philosophy is seen to be a social
institutions that have an important role to play in research, not as a permanent statement of position but as conditional and intimately related to the outcomes and practice of research. This view of philosophy encourages a coherency in research, in that it sees philosophical suppositions concerning the nature of the world under study as an integral and important part of the research process (Archer, 1995).

Archer argues, from a critical realist perspective, that “...the nature of what exists cannot be unrelated to how it is studied...the social ontology endorsed does play a powerful regulatory role vis-à-vis the explanatory methodology for the basic reason that it conceptualises social reality in certain terms, thus identifying what there is to be explained and also ruling out explanations in terms of entities or properties which are deemed non-existent.” (Archer, 1995: 16-17)

Archer (1995) states that ontology without a methodology is incomplete and that a methodology without ontology is also incomplete. Only if the two go hand in hand can we avoid a discipline in which the deaf and the blind lead in different directions, both of which end in cul-de-sacs (Archer, 1995, p.28).

According to critical realists, scientific research should take place on the “real” domain level because here is where mechanisms are transformed into organisational events, which means that actions have an effect on the organisation. Bhaskar (1978) and Mingers (2004) state that these mechanisms represent the interaction of structures that could explain certain tendencies, powers, patterns and behaviours. Critical realists explain why things happened by deeply exploring the organisational events and relationships and then devise structures and methods that could shape such events. Therefore, for a critical realist, the description of a phenomenon is not enough, regardless of how sophisticated the analysis of the process was or how detailed such the analysis is (Manicas, 1987).

In the case of this study, the importance of following a critical realist approach resides in the fact that critical realists want to investigate extendedly into the organisational event and explain why things occurred, and then, create explanations which could shape the observed. Therefore, undertaking some sort of causal analysis to explain why events have happened is an important element of critical realist research (Manicas, 1987). In the case of cultural and organisational research, understanding the cause of particular events allows practitioners and researchers to modify the introduction of new practices
or the implementation of policies so they align better with the strategic plan of an organisation.

The absence of an integrated theory of management can be observed in its multidisciplinary nature and the way it draws upon a range of social (and natural) sciences. According to Smyth & Morris (2007), the diversity of theoretical bases leads to an eclectic mix of concepts being required for understanding projects or aspects of them, only exacerbated by several project management associations creating different conceptual underpinnings and confusing practitioners. This confusion makes it difficult for project managers to understand the diversity of approaches and thus, its application and interpretation varies according to context, circumstance, competence and impulses (Smyth & Morris, 2007).

A particular problem in this study is the assumption that general patterns concerning the management of projects can be identified, which have explanatory power. Even if this was the case, the recommendations based on these insights cannot be applied mechanically with the expectation of automatic outcomes: applicability is based upon context. While the importance of context is widely acknowledged, epistemologically context is frequently overlooked in the selection of research methodology.

The absence of a received theoretical framework for project management, and the importance of context, puts a special burden on ensuring that attention is focused on epistemology and hence methodological issues.

Authors such as Van der Zwaan (2000) make the distinction of research between exploration, description, explanation and testing. Exploration is undertaken when knowledge found in the literature lacks accuracy or where some variables are missing. Descriptive research points towards the relevance of certain variables while explanatory research tries to identify the links causing relationships between the variables and the phenomena which the research is trying to clarify. Finally, the testing type aims to prove the hypothesis derived from the links causing the relationships.

Following the above-mentioned sub-divisions, this research falls into the descriptive and explanatory areas, because it attempts to examine the importance of culture as a key factor of success when managing projects carried out by privately-run organisations
working along with governmental entities and it also tries to examine the relationship between the culture and the successful completion of projects.

6.6 Research methods

Different research methodologies rest on different assumptions about the social world and the way it should be represented. In contemporary social scientific texts (Bryman, 1988a; Bryman, 1988b; Hamilton, 1994; Silverman, 1994; Hammersley & Atkinson, 1995; Seale, 2000; Bryman & Bell, 2003; Bryman, 2004), ways of representing the social world are frequently classified into 2 competing methodological areas resting on fundamentally different assumptions: positivism and interpretativism. These areas overlap each other and cover the subjects of positivism and quantity on the one hand and interpretativism, naturalism and quality on the other. It is important to note that the term “naturalism” can be applied to both methods of research and this term refers to the application of natural sciences principles to social science. In other words, to understand the social world it can only be researched in its naturally occurring situations.

When researching culture, the only way to explore the whole context of it is by experiencing it firsthand (Tayeb, 1988). There is no other way than direct contact to learn about culture because understanding culture is not symmetrical. Shenkar (2001) argues that one individual (observer) perceives one culture is not the same as the individuals in that particular culture perceive the one of the observer. If this “symmetry” is not valid, even though someone else can speak about their own culture and give their own feelings and opinions about it, the only possible way to understand it is experiencing it ourselves. This is important because when using questionnaires to gather data about culture and cultural differences as the questions are constrained by the personal point of view of the researcher. In order to avoid this bias, if a questionnaire is developed it should consider feedback provided by a pilot test group, which, if it has a multicultural composition, would be able to identify any cultural bias included by the researcher (Biemer, 1991; Pinsonneault & Kraemer, 1993).

The combination of research methods for this study depended, in the first instance, on the data needs and also on the context of the framework of the whole research. Due to the different data requirements of the research, which included gathering data from secondary questionnaires and also information from published sources, a combination of research methods was required. As this research was concerned with culture and its
impact on project management, one way of studying this area is by using a qualitative approach. According to Silverman (1994) there are four main techniques used in qualitative oriented research: observation, transcription, interviewing and collection of documents and other materials. In this study, interviews were used as the main qualitative technique.

Haas (2000) defines the research of theoretical problems as the process composed of observation, induction, deduction, testing and finally evaluating the results. In the observation phase, the researcher starts collecting data. This data serves as basis for developing hypotheses throughout the induction stage (Forza, 2002). Westbrook (1995) mentions that once the hypotheses have been developed they are used to tackle or to explain the theoretical problems which originated the process by testing the theories and verifying their truthfulness in the testing stage. Finally, once the hypotheses have been proved true they are added to general knowledge. In the case of the theories proved to be wrong, the iteration process can go back to the observation process, if the data gathered was insufficient or biased or to the induction stage to develop new theories (Hyde, 2000).

According to Haas (2000), to tackle practical problems the researcher observes the facts and also analyses data gathered using data-gathering techniques. Once the data has been analysed and synthesised a provisional design is developed, which helps the researcher to understand clearly the observed/analysed facts and predict behaviours. Finally, the effectiveness of these predictions and expected outcomes is evaluated and then a decision is made to either undertake a further iteration of the process or, in case of the process being complete, mark its outcomes as specific knowledge.

Before discussing research methods in greater detail, the design and the empirical cycles of the research need to be explained. Authors such as Sekaran (1983) and Adler (1983) describe the design methodology cycle in terms of analysis, synthesis, application (or simulation depending on the case), evaluation and decision. In the analysis phase the problems are analysed in the context of the research and then during the synthesis phase a provisional design is created. This design is tested before being put into practice. Cavusgil & Das (1997) take this approach one step further, adding three distinct ways to the methodological cycle by introducing the concepts of sequence and structure,
simplification and incorporation of relevant sub-issues and then, the prioritisation of the key steps in the research process.

Authors such as Vosselman & Meer-Kooistra (1999) argue that the properties of the design can only be evaluated after being applied in practice. Once the design has been applied an evaluation is made comparing the outcome with the expected properties. In other words, the real outcome is compared with the forecasts to measure the matches and the deviations.

The choice of the most appropriate strategy for the research determines the method of data collection used. Different methods of collecting data and analysing it present its own advantages and disadvantages. Yin (2003) discusses three conditions needed to be met in order to decide what type of research strategy is most appropriate. First, the type of research question has to be known. Second, the degree of control the researcher has over actual behavioural events has to be understood and measured and third, the degree of focus on current as opposed to historical events has to be determined.

This research aims at identifying indicators before a problem happens, which needs a research method that investigates a contemporary phenomenon within its real-life context where the boundaries between phenomenon and context are not clearly evident (Körvers, 2004).

One way to depict the specific research design and methods used for the different research questions is shown in Table 6.2 using the theoretical framework provided above.
<table>
<thead>
<tr>
<th>Research question</th>
<th>Approach and method</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do cultural issues impact projects, specifically how does the Mexican culture impact projects being carried out between multinational organisations (i.e. BP, Royal Dutch Shell, Repsol-YPF, etc.) and Mexican governmental entities such as Petróleos Mexicanos (PEMEX) and the Comisión Federal de Electricidad (CFE)?</td>
<td>Literature review In-situ research Questionnaire</td>
<td>Inductive</td>
</tr>
<tr>
<td></td>
<td>Quantification of project management dimensions and elements.</td>
<td>Deductive</td>
</tr>
<tr>
<td>How can a multi-cultural team provide a competitive advantage for a project with a multi-cultural context which is being carried out within a public / private framework in Mexico?</td>
<td>Literature review Questionnaire</td>
<td>Inductive</td>
</tr>
<tr>
<td></td>
<td>Quantification of project management dimensions and elements.</td>
<td>Deductive</td>
</tr>
<tr>
<td>What are the key success factors for a project which is being carried out in a multi-cultural environment in Mexico?</td>
<td>Literature review Descriptive method Questionnaire analysis</td>
<td>Inductive</td>
</tr>
</tbody>
</table>

Table 6.2 Methodological approach

The theoretical bases of this research are based on a literature review, supported by a combination of qualitative and quantitative methods which were used in the research. Both inductive and deductive processes were used to ensure that the study fulfils the criteria of good quality scientific research.

The complexity of the construct and research questions in this particular research triggered the need to use multiple processes. Therefore, this research was designed to follow the five steps described below:

First, a literature study, which is required to fully understand the context of all the disciplines involved in the research and clearly define a theoretical framework as the basis upon where the answers for the research questions can be developed.

Second, verification of the elements and dimensions of project culture are addressed by interviewing experts and applying preliminary and pilot questionnaires (See Appendix D and Appendix E respectively). The main purpose of the preliminary questionnaire was to test how the respondents perceived the elements of projects and to clarify the sampling process. The purpose of the pilot questionnaire was to test the arrangement of the questions as well as elicit feedback on the length of the questionnaire and the validity of the answering scale. The main differences between the preliminary and pilot questionnaires were the number of questions, the order of the questions and the grammar used to deliver the survey. Also, the researcher received feedback from the
respondents of the preliminary questionnaire with respect to the understanding of the questions. These questions were developed following the information found during the literature review, marking what the elements of a project were and how these elements could be measured. The purpose of the pilot questionnaire, which was distributed to 12 people in the Heriot Watt University Institute of Petroleum Engineering, was to test the clarity of the questions and to test the type of questionnaire to be used in the main questionnaire. The preliminary questionnaire provided the researcher with valuable feedback, especially in the area of the questionnaire design, the content of the questions and the importance of using a measurement scale instead of open-ended questions.

Third, development of a questionnaire to gather data (main questionnaire, Appendix F), using the feedback provided by the experts and following the rationale previously described in this Chapter.

Fourth, the application of the main questionnaire to gather data from the two public organisations in Mexico and from four organisations in the United Kingdom. The employees working in the Mexican companies are trained on and actively use project management tools and it was understood that their organisations have a project management culture. These companies are carrying out projects along with multinational organisations. The control group in the United Kingdom is also trained in the use of project management tools and the companies where they work are also known to have a project management culture.

Finally, fifth, interviewing key project managers. After analysing the data gathered by the main questionnaire, the findings were corroborated throughout interviews with experienced project managers in the public-sector companies in Mexico.

The research design can be branded as exploratory and confirmatory. The research started by exploring existing published literature. A questionnaire (Appendix F) was then created to verify and gather data on the dimensions of culture and elements of project management. This questionnaire consisted of a quantitative study using an online survey and the analysis of the factors present in the above questionnaire.

6.7 Data gathering techniques
As the study involves organisations in widely dispersed locations, the use of surveys was necessary. Also, the focus of the study required the researcher to interview key
project managers and teams. The data gathering techniques applied during this research are explained below.

6.7.1 Observation

Observation is a powerful tool for gathering data. It is derived directly from anthropological research where it is used to gather data “first hand” (Hammersley & Atkinson, 1995). Anthropologists have used it since the late 19th century when researching social links and everyday events to produce descriptions of a particular group of people. According to Silverman (1994), sociological studies of this type originated from the work of the “Chicago School” which was concerned with sociological aspects of urban life. According to Becker (1977) the participant observer gathers the data while participating in the life of the organisation being researched. The individuals in that organisation are carefully watched and the researcher has the opportunity to ask them about their interpretation of the events observed.

The result of these observations is a description of the actions of the people in the organisation as viewed by the researcher. The most important point of using observation is as a method of collecting data while being immersed in the organisation. The researcher has the opportunity to have access to the links and relationships established in the organisation. As Geertz (1993) suggests, cultural knowledge cannot be separated from the context where it was created.

Observation can provide the researcher with the flexibility to understand and to deal with issues which were not foreseen at the beginning of the study but which are important overall (Bryman, 1988b; Bryman & Bell, 2003). Also, the researcher becomes part of the environment and Walsh (2000) argues that throughout observation, inquiry and data collection, the researcher tries to establish relationships with the people within the organisation. These relationships have to be able to provide the researcher with the data required to conduct the research and this access to the data is only determined by the role played by the researcher while immersed in the organisation (Bryman, 2004).

The relevance of observation as data gathering tool for this research is because the researcher had the opportunity to work within a governmental entity in Mexico, hence the use of the “observer as participant” approach. The researcher spent three years
working within a governmental regulatory organisation in Mexico, namely the National Banking and Securities Commission, which allowed the researcher to acquire insights about how projects were being carried out within that particular organisation. However, as the research focuses on the interaction between privately-run organisations with governmental entities carrying out projects together, observation of the way some privately-run organisations carry out projects gave the researcher the opportunity to compare and establish points of similarity or difference thus applying the “participant as observer” role.

- **Reconstruction of notes**

Due to the confidential nature of the observation part of the study, the researcher was unable to take notes or tape record the conversations held during this part of the study. To address this issue, the technique of reconstruction of notes was followed. This technique consists of creating notes solely from the memory recalls of the researcher. Although the researcher was not able to take notes, this technique allowed him to gather information from the observation part of the research, valuable for the study. The researcher was able to make brief notes regarding the most important events of the day at the end of the day.

In this technique, participants systematically reconstruct their activities and experiences of the preceding day with procedures designed to reduce recall biases. The goal is to provide an accurate picture of the experience associated with activities (e.g., commuting) and circumstances (e.g., a job with time pressure). Evoking the context of the previous day is intended to elicit specific and recent memories, thereby reducing errors and biases of recall (Kahneman et al., 2004). In this study, the researcher reconstructed notes associating the activities undertaken with the specific areas of the research, linking each one of the areas of the research with the activities, comments and experiences of the people observed while at the same time, understanding the possibility of bias in this recall. Time pressure is always relevant during research and addressing this problem before it arises helps the researcher to reconstruct the notes more accurately (Kahneman et al., 2004).

**6.7.2 Surveys**

In any organisation, research can be undertaken to try to solve an existing problem or to try to find the causes of a phenomenon. One of the techniques used to elicit data from
individuals are surveys. In general, a survey involves the collection of data from individuals, (through questionnaires, telephone calls, etc.) about themselves and the social environment they belong to (Rossi et al., 1983). The use of sampling surveys reveals information about large populations with a known level of precision (Rea & Parker, 1992).

The use of questionnaires is based in a set of issues that allow the researcher to collect data in a standardised way and enables the researcher to gather facts about social realities (Biemer & Lyberg, 2003). Similarities and differences between populations and samples are determined by the measurement of concepts. The important point when using questionnaires is to operationalise the concepts which the research wants to bring out. The researcher creates the questions and the subjects answering the questionnaire cannot alter these questions and are limited to only answering the questions asked.

Researchers have separated surveys into three different types: exploratory, confirmatory and descriptive (Pinsonneault & Kraemer, 1993; Filippini, 1997; Malhotra & Grover, 1998).

Exploratory survey: it is mainly used to gain basic knowledge about a topic and it serves as a first-step to more in-depth research. Usually, there is no model and the concepts of interest need to be understood and measured in a better way (Forza, 2002). This type of survey can help with understanding how specific concepts could be related to specific issues. It could also help to establish borders to theory. Exploratory surveys can be conducted using data from previous studies (Pinsonneault & Kraemer, 1993).

Confirmatory (or theory testing or explanatory) survey: it takes place when the concepts surrounding a specific issue are well-articulated and the researcher has a certain level of knowledge about them, as well as models and propositions. This particular type of survey allows the researcher to test the capability of the concepts developed to confirm a hypothesis (Pinsonneault & Kraemer, 1993).

Descriptive survey: this is aimed at understanding the relevance of a certain phenomenon by trying to describe its distribution amongst the population (Biemer & Lyberg, 2003). Malhotra & Grover (1998) note that even though this type of survey is not pointed to theory development, the survey can help because the facts described provide clues for theory building or theory improvement.
This research used two of the survey types described above. First, an exploratory survey (pilot questionnaire) was conducted in order to understand the nature of project management culture in Mexican organisations better. Second, a descriptive survey was conducted. This survey based on the literature review and the pilot questionnaire allowed the researcher to explore issues in greater breadth and depth.

According to Forza (2002), before any type of survey starts, certain tasks need to be accomplished. These tasks include translating the theoretical domain into an empirical domain, throughout the design and testing of theories using data collected by using pilot tests and then interpreting the analysed results, concluding with the writing of the report (Biemer, 1991; Forza, 2002). Figure 6.3 shows this process.

![Diagram showing the theory-testing survey research process](image)

**Figure 6.3 Theory-testing survey research process.**

(Forza, 2002)

Following the process shown in Figure 6.3, after the link to the theoretical level was completed, the researcher started considering the design of the research. The constraints which seem to affect the research were taken into account, especially the need to collect data from sources located in two different continents i.e. North America and Europe. It was recognised by the researcher that there was not the flexibility to interact face to face with all the potential respondents/interviewees. Also, the researcher faced the challenge of collecting information from two countries with different languages (i.e. English and Spanish) even though the researcher speaks fluent Spanish.

The focal organisations for the research were involved with oil extraction and energy generation in Mexico. Both Mexican governmental organisations in the oil extraction and power generation sectors (PEMEX and CFE) were featured in the study. The sample was specified and its geographical distribution and composition decided upon. The use of surveys is justified because they provide an standardised platform with a set of previously defined questions with a very specific measurement scale (Topp &
Pawloski, 2002). Therefore, the only difference between respondents is their interpretation of the questions in the survey.

As the research covers a variety of organisations, the use of surveys is a powerful tool that can provide the researcher with the ability to gather valuable data from multiple sources in short periods of time. It also provides the researcher with the means to pilot-test and obtain findings which can be fully explored later. The use of electronic-based surveys is also important because it allows collecting data from a sample scattered all over the world without having to travel and with the freedom of using analysis tools to reach conclusions and discover data clusters relatively quickly (Shannon et al., 2002). The importance of the analysis tools resides in the opportunity provided by some online-based survey sites to analyse the data gathered as it is being input. Also, if the researcher requires it, the online-based survey tools can export the results in a file which can then be analysed using tools such as SPSS. This eliminates the need to capture the data from paper-based surveys thus minimising mistakes (Shannon et al., 2002; Topp & Pawloski, 2002).

- **Online Surveys**

  Academics and practitioners from different disciplines have become increasingly interested in taking advantage of the implementation of online data collection methods (Ilieva et al., 2002). These advantages include the lower cost of setting up an online survey compared to the cost of a paper-based one; they generate faster response rates; they are easier to deliver to participants, especially if they are located in geographically disperse locations; as data collection is automated its analysis and processing can be performed faster as the data can be downloaded to data analysis software packages; and, if required, the researcher can provide further online help, instructions, and boxes with previously selected answers (Mehta & Sivadas, 1995; Sheelman & McMillan, 1999; Cook et al., 2000).

  Taking into account the previously mentioned advantages, for this particular study two advantages were more relevant. The first is related to the ability of online surveys to reach a wide audience regardless of their geographical location, as participants in this research were located in two different countries (Mexico and the United Kingdom) and in geographically disperse locations within each of these countries. The use of online surveys eliminates the need for the researcher to be present in both countries to
distribute and collect the surveys as the URL of the survey was distributed via email and therefore not disadvantaging any group.

The second benefit relates to the time saved on data entry and analysis. The online application used to create the survey generated automated reports and created response files ready to be exported to data analysis software applications (such as Excel or SPSS) thereby sparing the researcher from entering data into spreadsheets. A side-effect of the use of this online application was the ability to create constraints to ensure the quality of the data as the responses could not be sent if any question was left unanswered. Choosing an online survey for the main questionnaire over an email survey method is supported by several reasons. Dommeyer & Moriarty (2000), Ranchhod & Zhou (2001) and McDonald & Adam (2003) state that email surveys have the potential to infringe personal privacy and security policies as their responses can easily be traced back to the senders and in the case of online or web-based surveys, the responses cannot be linked to individual respondents therefore creating and ensuring total anonymity. Also, Dommeyer & Moriarty (2000) argue that online-based surveys have the potential of generate more interest as they can include more animated elements.

Wright (2005) argues that online-based surveys, although useful, are not free of disadvantages. One of the disadvantages mentioned by Wright (2005) is the sizing of the sample. Many organisations do not allow their employees to provide their email addresses to researchers, therefore listing the survey online and just counting the number of responses is not an accurate method of sizing the sample. In the case of this study, the researcher had access to the email address of several project managers, who then cascaded down the web address of the survey and to quantify the size of the sample, the researcher asked the project managers about the number of people working in the areas where the emails were sent.

Another disadvantage of online-based surveys is related to the access to the online-based survey (Ilieva et al., 2002; Topp & Pawloski, 2002). In some organisations, access to the Internet is banned altogether or in the best cases, heavily restricted. Wright (2005) also argues that people receiving the invitation to answer the survey might feel annoyed or might delete the invitation email straightaway. In this case, Wright (2005) suggests that the researcher might consider sharing the results of the survey with the participants in order to create a good-will link between them. For this study, the
researcher relied on the access organisations in Mexico give to researchers under the CONACTY scheme and in the case of the UK, the technique specified by Wright (2005) about sharing the results of the survey was used.

- **Question type**

Authors such as Gaddis (1998) and Zikmund (2000) argue that open-ended questions are more challenging and problematic than closed questions as they often lack reliability and validity, yield irrelevant responses, fail to produce responses indicating the intensity of an attitude and researchers find them far more difficult to code their responses, therefore making more errors (De Vaus, 1995; Schuman & Presser, 1996; Neuman, 2000). Due to these reasons, open-ended questions are rarely used compared to closed questions in online surveys (Zimmer & Golden, 1988; Chowdhury et al., 1998).

Even though the use of closed questions has its clear shortcomings, there are advantages of using closed questions over open-ended questions. Closed questions are easier and quicker for the respondents to answer, therefore making the surveys more bearable for the respondents (De Vaus, 1995). According to Malhotra & Glove (1998), Fowler (2002) and Malhotra et al. (2002), individuals responding to surveys with closed questions are known to answer more reliably when response alternatives are provided and, as the nature of the closed questions is predetermined, they are easier to compare against each other (Schuman & Presser, 1996; Saunders et al., 2003). Finally, Fowler (2002) argues that a constrained number of categories makes any particular answer analytically interesting as there are enough individuals giving their answer for that particular question as closed questions do not discriminate against the less expressive or inarticulate individual answering the survey.

While closed questions provide more advantages than open-ended questions, open ended-questions were used to gather feedback regarding the first stages of the development of the online survey as they were used as means of generating new ideas from participants and to provide the researcher with feedback regarding the structure and validity of the questions in the survey.
Likert scales

Likert scales were primarily used so that respondents could indicate the strength of their responses to questions about their perceptions of internal project management practices. Likert scales are the most widely used ordinal scales amongst survey researchers (Cooper & Emory, 1995; Heine et al., 2002; Harzing, 2006) because Likert scales produce responses that exhibit reliability and validity and are mutually beneficial for both the respondent and the researcher because apart from being easy to administer, they are easy to complete (Foddy, 1993; Bátitz-Lazo & Wood, 2001; Roulson, 2001).

It is logical to assume that scales used in previous studies help to produce results with higher validity and reliability therefore raising the question of whether to use original Likert scale labels (important/very important, etc.). Churchill & Peter (1984; 1986) argue that this validity and reliability cannot always be assumed and that the advantage of using existing scales is that they save time and effort to the researcher as opposed to using original ones. Cooper & Emory (1995) and Cooper & Schindler (2001) state that the use of such scales should be taken cautiously as the tools of data collection need to be adapted to the problem and not vice-versa, therefore applying the scales under the right context and then developing an original set of scales only when an existing one does not fit the set of questions being asked. After a review of questionnaire design texts (Frazer & Lawley, 2000; Gillham, 2000; Bradburn & Sudman, 2004; Hoogendoorn, 2004) it was found that existing scales could be appropriately incorporated into the survey without compromising its design.

Researchers such as Andrews (1984), Nunnally & Bernstein (1994), Weisberg et al. (1996) and Krosnick (1999) argue that the validity and reliability of the data gathered increases as the number of scale points increases and that the reliability reaches its optimum level between the fifth and seventh point (Nunnally & Bernstein, 1994). Cox (1980), Givon & Shapira (1984) and Tang et al. (1999) have found that the ideal number of scale points is between five and nine. However, they stated that the number of scale points depends on the characteristics of the survey. Albaum (1997) and Lalla et al. (2005) determined that a five point scale is as reliable as a nine point scale and that it will deliver retest reliability and concurrent and predictive validity.

Taking into account the arguments presented above, there are several contradictory points of view with regard to the number of scale points needed when using Likert
scales in order to create a robust survey design. While some experts strongly agree that seven point scales are the best, others claim that five point scales achieve the same reliability and validity and as a result, for this study, the researcher decided to apply a five-point scale: “Never”, “Seldom”, “Quite often”, “Usually” and “Always”.

6.7.3 Interviews

Interviewing is the most widely used method in qualitative research (King, 1998). This method is highly flexible and it is known for being capable of generating detailed data (King, 1998). The people being interviewed generally feel comfortable with this method and they know roughly what is expected from them in terms of response. As the interviewee can talk about a wide range of his/her experiences and in some situations interviewing is more economical than observation in terms of time and resources because the interviewee acts as the “eyes and ears” of the researcher and this can be multiplied by the number of interviewees (Seale, 2000).

Interviews allow the researcher to gather specific insights about issues that the interviewees believe are crucial to their work and at the same time, interviews also give the researcher the opportunity to focus on specific subjects or ideas which he thinks are in need of further explanation (King, 1998). The use of interviews also allows the researcher to develop better surveys to explore trends or unclear areas which showed up at the interviews (Forza, 2002).

According to the type of study, there are different types of interviews. The main types are: structured, semi-structured and unstructured. As their names suggest, the level of structure given to the interview defines their difference (White, 1998). Structured interviews are typically based on a detailed schedule with a specific order of questions with pre-defined questions for the interviewee. This sounds quite similar to the questionnaire survey where the participant is required to make a single response from a given set of answers previously standardised (Dey, 1993). The researcher has to make the effort to control the questions in order to avoid bias in the answers given by the interviewees. This control is mostly shown by the researcher using a set of closed questions with numerical scales or boxes with the intention of ensure the certainty of the meaning (Mathers et al., 1998).
Semi-structured interviews combine or try to mix closed questions with open-ended questions. The researcher is allowed to use a schedule with ordered questions, and there is more flexibility to allow the interviewee to answer the questions in a more open way in terms of order (Dey, 1993).

Finally, unstructured interviews are composed mainly of open-ended or unstructured questions. This type of interview is considered to be more personal and allows the interviewee to go into more depth about the subject. To gather valuable data, the researcher has to be seen as something more than a “data-collecting machine”. The researcher has to establish a social interaction with the interviewee (Silverman, 1994), where the researcher is considered as an active part of the process rather than a distraction. Seale (2000) notes that the interviewer/researcher has the task of guiding and monitoring the interview, guiding the interviewee into the topics the researcher believes are key for the research and asking the interviewee to clarify and reassure certain points that are unclear or uncertain. The key role of the researcher is to allow the subject to talk openly about the way he/she sees the things, in his/her own words and in his/her own time, rather than following the agenda of the researcher.

One of the most important points to mention is that in order to elicit the most information possible from the interviewee, he/she has to feel comfortable with the researcher, feel that the environment is pleasant and that the researcher/interviewer is not forcing the interview (Hiller & DiLuzio, 2004). To fulfil these points, King (1998) suggests that interviews should be flexible. Although the researcher needs data, this necessity must not be seen as following an inflexible path where the interviewee is stuck with no other possible exit than giving the right answer to any given question. Instead, when collecting qualitative data, the interviewer should allow the interviewee to express her/his ideas in the way that suits her/him the most and this will give an extra advantage to the researcher: when the interviewees are explaining the answers in their own way, the researcher can also elicit data about experiences and the environment surrounding the interviewees, something unlikely to happen if using inflexible interview techniques (Mathers et al., 1998).

In the case of qualitative research, when dealing with issues such as culture and perception of environments, interviews are not the most useful tool per se. Their importance is that they allow the researcher to capture the “talk” inside of each meeting.
(King, 1998). This talk can reveal several layers within the interviewees and the researcher must be aware of the possibility of discovering (and interpreting) these layers, as well as have the ability to lead the interviewees to open themselves up and expose such layers (Barnes, 1992). As Pagell et al. (2005) suggest, investigating the extent of how the cultural dimension influences managerial practices opens up an interesting field, which allows research to focus on whether culture matters and how it matters.

While the survey research allows the researcher to gather data from a widespread sample by asking pre-determined questions with a closed choice of answers, interviews give the researcher the ability to acquire more in-depth knowledge from fewer sources, giving the interviewees the freedom to explain their answers in a way which is not possible in a survey research. Trends which came up from the survey research can be tested and analysed thoroughly and some of the blank spaces on the previously gathered data can be filled in with information provided by the interviewees. In the best possible scenario, the researcher leaves the interview with an “informed” opinion from a reliable source.

In this research, the semi-structured and unstructured interviews were used. The reason for this resides in the need of the researcher to allow the interviewees to give their opinion about the issues which were discussed. Even though there was a list of questions to be answered, the finality of the interviews was to have an insight of the thoughts of the interviewees in their own words as suggested by Pagell et al. (2005) rather than just encasing these thoughts in a previously given scale. Also, as the interviews were not structured, it allowed both the researcher and the interviewee to relax and establish a common ground as individuals, rather than just the link between interviewer / interviewee.

### 6.7.4 Triangulation

The term triangulation was developed by land surveyors who tried to increase the accuracy and validity of their maps by measuring the distances from different angles. These diverse perspectives and variety of angles enhanced the vantage points of the cartographers. In the case of research, triangulation describes the use of multiple data sources or research methods in a study (Jick, 1979). With this apparent overlap, researchers address threats to the validity such as their influence on the setting or
individuals studied or the bias researchers carry within (Maxwell, 2005) and triangulation allows the use of additional research perspectives which help to minimise the appearance of such threats by incorporating multiple sources of data, researchers or methods of analysis (Janesick, 1998).

Denzin & Lincoln (1998; 2002) reviewed four different types of triangulation depending on the element used to perform it. The first one, data triangulation, refers to the use of several different data sources in a study in order to verify the validity of the data. Investigator/researcher triangulation is the second type of triangulation identified by Denzin & Lincoln (1998; 2002) and it is related to the use of several different researchers or evaluators to ensure that the study is not impacted by researcher bias. The third type of triangulation refers to the use of multiple different perspectives to interpret a single set of data and it is called theory triangulation. Finally, methodological triangulation is the fourth type described by Denzin & Lincoln (1998; 2002) and it refers to the use of several methods to study a single problem. Janesick (1998) identified a fifth type of triangulation, called interdisciplinary triangulation and it relates to the use of several different disciplines, such as art, sociology, history, architecture and anthropology to enhance the research process and therefore broaden the understanding of the methods and data used in the research.

Howe & Eisenhart (1990) argue that data triangulation helps it to be consistent and therefore conclusions can be drawn with the enhanced understanding provided by new perspectives which strengthen conclusions and lead to refined theories. Triangulation is a valuable tool in research because it compensates for missing information which was not gathered in surveys during a single round of questioning and, therefore, it leads to gathering more information from different sources to ground theories and reach stronger conclusions while considering the characteristics of the sample regarding its composition and validity (Malterud, 2001). As Harlos et al. (2003) state, it occurs between observation, views of reality and reports from several different informants.

In this study data triangulation was used to verify the validity and trustworthiness of the data gathered through the application of questionnaires versus information gathered through interviews. Interviews were conducted with at least one senior project manager from the targeted areas in each one of the organisations where the questionnaires were distributed in order to allow the researcher to verify to what extent the responses
provided by the individuals who answered the questionnaire were aligned with the responses and ideas of the senior project managers overseeing the projects. Although it is possible that the responses provided by the interviewees were completely different to those provided by the respondents of the survey, it was necessary to carry out the interviews to validate the results. Also, it was expected that the data analysis will reveal critical issues related to project management success and failure factors, the influence of culture on these factors and the similarities between the oil extraction and power generation industries in Mexico and the United Kingdom regarding project management.

6.8 Research process

The research process for this study included three distinct phases, each one involving a series of subcomponents which facilitate the gathering of information required to answer the research questions specified above. Figure 6.4 shows these three phases and their subcomponent elements.

As Figure 6.4 shows, the research process designed for this study consisted of six elements aimed towards fulfilling the objective of the research. The first step, shown in Figure 6.4 (a), consisted of a thorough review of the literature related to project management, culture and trends in the research in project management. After analysing the literature and finding what gaps were present and what potential lines of research were worth exploring (Figure 6.4 b), an iterative process was followed to design and create a research tool, in the form of a questionnaire. To reach the final version of the questionnaire, shown in Figure 6.4 (c) as Research Tool, two earlier versions had to be developed, tested and analysed. Once the final version of the questionnaire was developed, it was applied in six organisations in two industrial sectors in Mexico and the United Kingdom (Figure 6.4 d). The information gathered was then analysed with
the purpose of answering the research questions (Figure 6.4 e). Finally, this research tool is part of the contribution of this study, as it can be applied to gather information related to how culture impacts projects (Figure 6.4 f). The iterative process of developing and applying the questionnaires is shown in Figure 6.5.
Figure 6.5 shows the research process followed to create and apply the questionnaires as well as the analysis of the data gathered, separated in three phases. This process was devised by following the methodological approach explained in this Chapter and it highlights the importance of the questionnaires in this study. First, in Phase 1 the literature review was undertaken in order to find lines of research (Figure 6.5 a). After the literature was reviewed, a questionnaire was developed (Figure 6.5 b), which led to a first set of questions (denominated “preliminary questionnaire” and shown in Appendix D) aimed to cover the research objectives was created and administered to a set of project managers (Figure 6.5 c). The answers provided by the project managers, along with the observation study undertaken by the researcher (Figure 6.5 d), led to another iteration of the process (Figure 6.5 b), which resulted in the creation of a second questionnaire (Figure 6.5 e), named “pilot questionnaire” and shown in Appendix E.

In phase 2, the information gathered and the feedback provided by the respondents of the pilot questionnaire were then analysed and after a second iteration, a third questionnaire was developed (Figure 6.5 f). This questionnaire, the final tool developed for the effects of the research (named “main questionnaire” and shown in Appendix F) provided the research with the main dataset required for the analysis (Figure 6.5 g). As the literature shows, there are several areas of a project which can be impacted by culture and the main questionnaire was divided into 5 sections, each one of them focused on one specific area of projects: Processes, People, Systems, Structures and Environment.

Finally, in the phase 3 of the research process shown in Figure 6.5, interviews were conducted (Figure 6.5 h) to verify the findings from the main questionnaire with expert project managers. The information gathered after the interviews was analysed and interpreted (Figure 6.5 i) and finally, the discussion presented (Figure 6.5 j).

According to Robson (2002) the research process of a study involves making decisions about four important questions:

Who: Regarding which persons are observed or interviewed.

Where: Related to the settings where the data will be collected.
When: Involving the times when the data will be collected.

What: Considering the events, activities or processes which will be observed or analysed.

The data gathering and preliminary analysis for the research were completed between January 2004 and April 2006. Certain parts of the research are based upon the personal working experience of the researcher, due to his contact with governmental and multinational organisations in Mexico, as well as those of the people working with the researcher prior to the formal start of the research.

In this study two sets of interviews were carried out. A set of preliminary interviews took place in January 2005 in Mexico in order to gather information about projects and cultural issues in Mexico, followed by a structured set of questions developed by the researcher as shown in Appendix F. Ten Mexican individuals working in different industrial sectors were interviewed. Of the ten interviewees, two worked in the Mexican oil extraction industry, two in the Mexican electricity generation, four in multinational companies providing services for the oil and electricity industries and two in Mexican companies providing services for the oil and electricity industries. The average length of the interviews was 1.5 hours. The interviews took place in Mexico City and as the interviewees were located there, the interviews were carried out in Spanish, as this was the language of both the interviewees and the researcher. The information obtained was analysed to identify issues about projects undertaken by Mexican companies and organisations. The resulting data was then compared with the information obtained from the literature review (Figure 6.5 a) by referring back to the literature to validate the results of the interviews.

At the beginning of 2006 the researcher gathered further data while working for three weeks in a private organisation in Mexico as a contractor and manager of a gas extraction site (Figure 6.5 d). The researcher was able to make observations about a multicultural working environment in Mexico. Valuable insights were gathered which influenced the design of the main questionnaire (Figure 6.5 f). As the main language of the persons working in that organisation was Spanish, the researcher, who speaks fluent Spanish, had no problem understanding what was said, even although some of the individuals came from various countries in Latin America, such as Venezuela, Colombia and Argentina as well as from Spain. As mentioned before, Latin American
countries share some cultural traits (up to a certain level), which prevents the skew in the results of the data. Also, it is important to note that due to a confidentiality agreement, the researcher was unable to take notes or make recordings during this part of the research. As the organisation was performing strategic projects, the researcher consented to sign a non-disclosure agreement.

The second set of interviews involved telephone conversations with seven senior-level project managers who worked within the organisations which formed the sample of the main questionnaire (Figure 6.5 h). Of these interviewees, five were Mexicans (three from PEMEX, two from CFE) and two British (one from the oil sector and the other one from the power generation sector). These interviews took place in November 2006 with the intention of clarifying issues arising from data analysed from the main questionnaire (Figure 6.5 g). The average duration of each interview was about an hour. The languages used were English and Spanish as the interviewees who were based in the United Kingdom were English speakers and the interviewees located in Mexico were Spanish speakers. The interviewees were asked to give their opinions regarding their answers to the main questionnaire and how these answers related to their experiences in the workplace. Moreover, the interviewees were able to give their point of view while addressing some of the more specific points with examples from their day-to-day projects.

### 6.8.1 Material collected

There are two important aspects to consider regarding the data collected in this study. First, the data gathered through interviews had to be accurately recorded. Even though mannerisms and attitudes cannot be easily measured or recorded during the interviews, the experience the researcher has gained during the years he spent working gave him the ability to understand (up to a certain level) what the interviewees were trying to say and, most importantly, what they wanted to say and was only expressed through body language, something which is not uncommon in Latin American countries. Goffman (1959) argues that when interviewees know that their ideas are being recorded they tend to behave in a different way. When participants feel less exposed they are more comfortable and therefore, their answers and behaviours are closer to what they would be in real life. This study included material collected from three different sources, namely literature review, surveys and interviews, the last two required interaction with other people. As shown in Appendix I, the interviewees gave their responses to
questions asked by the researcher, and even though their level of interaction was deeper than if they were responding to a survey, the advantage of knowing that it was part of a research project gave them certain degree of liberty. The people who responded to the main questionnaire had a greater degree of liberty when answering the questions in the survey, albeit constrained by the scale.

6.8.2 Participants and sampling

The empirical work of this research had three different parts and therefore the need of three different sampling groups:

The design part, where the project management factors impacting a project were explored leading to the design and development of a suitable tool to measure and compare these factors (Figure 6.5 Phase 1). The application part, where the main questionnaire was applied in order to gather data to specify the impact of the above mentioned factors on a project (Figure 6.5 Phase 2); and the verification part, where the data analysed was compared with leading project managers through telephone interviews (Figure 6.5 Phase 3).

- **Design**

Following the approach developed by Robson (2002), regarding the “Who” question, in the design part of this research (Figure 6.5), the study used a pool of 30 practicing project managers and team members in two different organisations (a multinational company with operations in Mexico and project managers/researchers in a British university). The reason for this sample is to establish if there were basic differences or common points between the answers provided by the individuals who responded to the questionnaire. It is important to mention that the respondents carry out projects in diverse areas of expertise, such as IT and R&D and not only from a technical area as it usually happens in “traditional” project management environments, such as engineering or construction firms. The individuals composing the sample provided technical, processes and research points of views regarding the elements composing a project.

The participants were chosen non-randomly, based on the criterion that all the participants had to be involved in project management, either as a project manager or project team member. The questionnaire, written in English (see Appendix E), was sent to the participants located in Mexico, as an Excel spreadsheet, whereas the participants
located in the UK received a printed version. From the total sample of 30 participants, 22 questionnaires were returned with all the items answered as well as feedback. The number of responses (n=22) represents a response rate of 73.33%. Table 6.3 shows the distribution of the respondents according to their geographical location and work position:

<table>
<thead>
<tr>
<th>Geographical Location</th>
<th>Project managers</th>
<th>Project team members</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>10</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>UK</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td><strong>13</strong></td>
<td><strong>9</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

Table 6.3 Distribution of respondents (pilot questionnaire)

- **Application**

The application part of the research (Figure 6.5) used a pool of 515 practising project managers and experienced project team members in Mexico and the United Kingdom. These individuals were chosen non-randomly from two organisations in Mexico and four organisations in the UK. The organisations in Mexico were the Mexican state oil company (PEMEX) and the Mexican national power generator (CFE).

The organisations in the United Kingdom included two companies in the oil extraction industry and two in the power generation sector, all of them privately run. The individuals who responded to the questionnaire were selected on the basis of their work within a project management environment. The sample and number of respondents are shown in Table 6.4 below.

<table>
<thead>
<tr>
<th>Geographical Location</th>
<th>Sample</th>
<th>Number of respondents</th>
<th>Response ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>428</td>
<td>244</td>
<td>57%</td>
</tr>
<tr>
<td>PEMEX</td>
<td>263</td>
<td>137</td>
<td>52%</td>
</tr>
<tr>
<td>CFE</td>
<td>165</td>
<td>107</td>
<td>65%</td>
</tr>
<tr>
<td>UK</td>
<td>87</td>
<td>24</td>
<td>28%</td>
</tr>
<tr>
<td>Oil</td>
<td>47</td>
<td>12</td>
<td>26%</td>
</tr>
<tr>
<td>Power generation</td>
<td>40</td>
<td>12</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td><strong>515</strong></td>
<td><strong>268</strong></td>
<td><strong>52%</strong></td>
</tr>
</tbody>
</table>

Table 6.4 Sample and number of respondents (main questionnaire)

It is important to mention that even though the original population size in the United Kingdom was larger than the final number of respondents, the fact that the researcher relied on the goodwill of the employees of these organisations to complete the online
survey impacted the number of responses, unlike the Mexican organisations where with the support of CONACYT a much larger number of respondents was achieved.

For a factor analysis to be developed, it is necessary that the number of responses have to be much larger than the number of items composing the tool. According to Gorsuch (1983), there is no safe ratio between the number of subjects responding the questionnaire and the number of variables composing it. When it comes to scale development, the “rule of thumb” says that 300 responses are needed in order to factorise items successfully (DeVellis 1991). Due to the division of the items in the questionnaire into 5 sub-categories, the number of responses could be lower than 300, as the commonly used rule says that it can be five responses per item in the tool/questionnaire. Taking into account this last statement, as the maximum number of items in the sub-categories of the questionnaire was 26, then the minimum number of responses needed to give statistical validity to the data gathered with this particular tool was 130 (26x5). Of the 515 possible respondents, 268 responses were obtained (n=268), which represents a response rate of 52%, as shown in Table 6.4 and, according to DeVellis (1991), this proportion was adequate and provided the data gathered with statistical validity.

However, although the responses of the questionnaire have statistical validity, the non-response problem of the sample in the United Kingdom has to be taken into account as according to Groves & Peytcheva (2008), non-response bias can account for up to 11% of variation. Non-response bias varies over different estimates within a survey, as a function of whether the likelihood of survey participation is related to the variable underlying the estimate. In the same survey, some estimates can be subject to large non-response biases; others, to negligible biases. The scientific question associated with this expression is “what causes a correlation between y and p” or “what causes a survey variable to be correlated to the likelihood to respond? (Groves & Peytcheva, 2008)”.

The non-response bias is also influenced by several factors, such as the type of survey (self-administered, mailed, electronic), the subject of the survey (politics, health, business) and the type of respondents (professionals, students, homemakers, mixed).

However, the non-response bias can be addressed by linking the causes of the non-responses to the survey variables and, in the case of this study, the non-response can be linked to the confidentiality of the work carried out by some of the respondents and the
competitive advantage that can be hindered if such information were to be disclosed freely. Furthermore, it has been suggested by Goves & Peytcheva (2008) and Sala & Lynn (2009) that although the non-respondent bias impacts any survey, there is a strong correlation between the data gathered with what could possibly have been gathered should the non-respondents have answered the survey, therefore, there is statistical validity in the data gathered.

• Verification

In the verification part of the research (Figure 6.5), the results and the findings from the data analysed were discussed with 7 senior-level project managers.

Two of the project managers selected were Mexicans and worked for the Mexican organisations PEMEX and CFE while the three other Mexican managers worked for multinational organisations that were involved in projects with PEMEX and CFE. The final two project managers worked in the UK, one for a power generating company and the other an oil company. These individuals were selected on the basis of their experience as project managers and their senior level in their respective organisations.

The average duration of the discussion was an hour. All seven interviewees showed a keen interest in providing their insights and comments and also in receiving feedback from the researcher regarding the responses from other interviewees.

6.9 Conclusion

This Chapter identifies the methods and procedures used to conduct the research, and approaches used to collect and analyse the study data. The Chapter begins with a justification of the study methodology. Following this, the section on the sampling design contains information about the units of analysis, study population and sample size. Finally, the instruments and their administration section guide future researchers in developing and issuing surveys.

Overall, project management research continues to move towards maturity, and in doing so it continues to build up its theoretical foundation. This Chapter explained the techniques followed in this study to approximate theory. The literature review demonstrates that project management does not have its own formal theories, at least as defined in an academic sense, therefore showing that there is a lack of integrating
theory. Theory approximation methods include collection of data, design of models and frameworks as initial steps for building a strong foundation from which to conduct further research. Although none of these methods alone develop theory, each contributes to a greater understanding of the phenomena of virtual projects, success and communication.

The results of the study are presented in the following Chapter and Chapter 8 follows with data analysis of the results and findings.
Chapter 7 Results

7.1 Introduction

Cultural and social circumstances form a web interconnecting the daily activities of people and as they try to make sense of other activities, people carry out within an organisational context, adding a different understanding to their work commitments, workgroup relationships and personal fulfilment (Orlikowski, 1995; Orlikowski, 2000). These aspects show the mental framework of the actors which are moulded and structured by their organisational and personal values, presents differences in their perception of organisational processes, relationships, structures, systems and environments while, at the same time, the cultural setting of the actors acts as lenses, constraints and scales, providing values to shape their actions and decisions within the organisational culture (Tabellini, 2005; Javidan et al., 2006b).

The statistical analyses in this Chapter present results that aim to determine whether or not the Mexican and British cultures affect the perception of projects and their components and whether the differences in the perceptions can be attributed to the inherent differences between projects in the two countries addressed in this study and therefore, establishing what the project success factors are according to the perceptions of the actors who answered the questionnaire.

As described in Chapter 6 and shown in Figure 6.5 (f), the process of creating the main questionnaire (shown in Appendix F) aimed to gather information valuable for achieving the objectives of this study. The information gained was converted into numerical data and recorded and analysed using the SPSS statistical application, in order to establish the demographic characteristics of the respondents as well for a detailed statistical analysis of the information gathered, which, referring back to Chapter 6, is shown in Figure 6.5 (g).

This Chapter aims at providing information which can be used to reach the primary research objective previously described in Chapter 6: “to examine the role of Mexican Culture as a key factor when managing projects” and “to identify the nature of the best practices when managing multi-cultural teams/projects”.

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This Chapter is divided into three sections: project management questionnaire elements (section 7.2), application of the project management questionnaire (section 7.3) and analysis (section 7.4).

First, in section 7.2, this Chapter describes the statistical indicators validating the elements composing the questionnaire and therefore, the data gathered through its use and it continues with the description of the biographical data of the respondents of the questionnaire.

Later on, in section 7.3 this Chapter shows the data analysis process starting with the pilot test of the elements composing a project by using a questionnaire applied to a group in the United Kingdom. The purpose of this test was to validate the questionnaire and therefore enlist in an ordered manner the factors impacting projects. This Chapter then continues with a description of the data gathered with the main questionnaire, subdivided on each one of the five elements composing the questionnaire, compared according to the country of residence of the respondents.

Section 7.4 presents the statistical description of the data gathered in the main questionnaire, comparing the values from the responses provided by individuals in Mexico with those of the group located in the United Kingdom, aggregated into each one of the five sections of the questionnaire (processes in the project, people in the project, project structures, project systems and project environment) with the purpose of answering the following research questions: “To examine the roles of Mexican culture as a key factor when managing projects” and “to identify the nature of the best practices when managing multi-cultural teams and projects.”

The objective “to identify the extent to which the cultural factor could prove to be a competitive advantage for a multi-national organisation working along with any Mexican governmental entity” will be addressed in subsequent Chapters.

7.2 Findings

According to the research process described in Chapter 6, the empirical part of this study with the statistical results and findings are described in three parts. These parts match the research process as set out in Chapter 6:
First, development of the project management elements questionnaire; Second, verification of the project management model and descriptive elements, linking them to the data previously gathered and then gathering information from project management experts and, finally, testing the project management questionnaire in public and privately-run organisations in Mexico and the United Kingdom.

These three elements of the research process were applied to the questionnaires developed to gather the data used for this research. In the first place, the questionnaire was developed, based on the information gathered during the literature review and the personal experience of the researcher, linking them with the objectives of the research. The next step was the verification of the questionnaire to validate its accuracy and data gathering capabilities and the extent to which the data gathered proved useful within the context of this particular research. Finally, testing the questionnaire with the samples described in Chapter 6.

7.3 Project management questionnaire
The valid descriptive questions derived from the application of the above mentioned process were used to compile a list of 92 items (variables) plus 16 statistical grouping variables (such as age, gender, nationality, country of residence, language, years of working experience), which were included in a survey questionnaire (see Appendix F) which was set online and the link to the webpage was sent out to project managers and team members (as described in Chapter 6). In order to provide a clearer picture to the respondents, as well as to frame the questions within a previously defined set of information, the questionnaire was divided into 5 main sections. These sections were defined taking into account the information gathered during the literature review, which provided the researcher with the basis to create the questions which form the questionnaire while at the same time, its division into 5 main sections proved useful as the respondents felt less overwhelmed by the number of questions. These sections are derived from the literature regarding the elements of project management culture described in Chapter 5, namely: 7.5.1 - Project processes (de Souza Kienbaum & Neto, 2002; Charvat, 2003), 7.5.2 - People in projects (Atkinson, 1999; Cockburn, 2003), 7.5.3 - Project structures (Laing et al., 1997; Arnaboldi et al., 2004; Vinsen et al., 2004; Aubry et al., 2007), 7.5.4 - Project systems (Montalegre & Keil, 2000; Shenhar, 2001b; Beise, 2004; Shore & Cross, 2005) and 7.5.5 - Project environment (Deane & Clark, 1997; Graham & Englund, 1997; Crawford, 2000b; Ives, 2005).
The elements of the questionnaire linked to key findings are explained by graphs as examples of the issues that have been found during this study. Also, it is important to mention that in order to present a more consistent view of the data, the intervals with zero responses are not displayed in any of the tables.

### 7.3.1 Biographical data

The dataset was initially divided into two samples using the statistical field “Residence” as pivot. Once these subsets were created, they were grouped again using the “Sector” statistical field, effectively creating 4 subsets of data: Oil sector in Mexico, power generation in Mexico, oil sector in the United Kingdom and power generation in the United Kingdom.

The biographical information on the sample group is shown in Table 7.1 to Table 7.8. From this, it is clear that the sample group education and experience in the field of project management is an elevated one and covers a broad spectrum of industrial sectors, focusing on the oil and gas extraction and electric energy generation. Moreover, the composition of the sample group also shows that the perception represents the perspective across various cultural groupings in the industry.

The results and findings on the development of the project management questionnaire are reported sequentially (as the scale was developed), using the stages described by Clark & Watson (1995) in Chapters 2, 3, 4 and 5 (Literature study) and Chapter 6 (Research methodology). Tables 7.1 to 7.8 and Figures 7.1 to 7.4 show the biographical information of the 268 respondents to the main questionnaire.

<table>
<thead>
<tr>
<th>Age</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power generation</td>
<td>Oil</td>
</tr>
<tr>
<td>25 years or less</td>
<td>26</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>26 – 30 years</td>
<td>35</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>31 – 35 years</td>
<td>40</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>36 – 40 years</td>
<td>19</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>41 – 45 years</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>46 – 50 years</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>51 – 55 years</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>More than 55 years</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137</strong></td>
<td><strong>107</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Table 7.1 Age of the respondents
Table 7.1 shows that nearly one third of the respondents of the questionnaire are aged between 31 and 35 years and that nearly 90% of the respondents are younger than 41 years. In the case of the age of the respondents in Mexico, nearly one in three is aged between 31 and 35 years (31%), approximately one in four is aged between 26 and 30 years (25%) and one in eight is aged between 36 and 40 years. Over all, nearly 87% of the respondents in Mexico are younger than 41 years. In the case of the respondents in the United Kingdom, almost 3 out of 4 are aged between 26 and 30 years, 16% (4 individuals) are in the range between 31 and 35 years and three individuals (12%) are in the range between 36 and 40 years.

In the case of the gender of the respondents, eighty-eight of the individuals who answered the questionnaire were women, accounting for nearly 30% of the total and 188 were males as shown in Table 7.2 below.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power generation</td>
<td>Oil</td>
</tr>
<tr>
<td>Female</td>
<td>45</td>
<td>34</td>
<td>4</td>
</tr>
<tr>
<td>Male</td>
<td>92</td>
<td>73</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>107</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 7.2 Gender

Of the respondents of the questionnaire, one in three is female, as Table 7.2 shows. In the case of the oil and power generation sectors in Mexico, nearly one third of the respondents are women, which is in line with the arguments presented by Gale & Cartwright (1995) and Zabludovsky (2001). This trend is the same in the case of the United Kingdom, as almost two out of each three respondents were male, as shown in Table 7.2.
Table 7.3 Nationality

Table 7.3 shows that the vast majority of the respondents of the questionnaire are Mexicans, with nearly 80% of the respondents being from Mexico and nearly 90% of the respondents come from countries which are regarded as Latin. Moreover, almost one in ten of the respondents of the questionnaire are located in the United Kingdom and use English as their language at work and, for those located in Mexico, the language they use at work is Spanish even if their mother tongue is not Spanish.

Table 7.4 Education

With respect to the education qualification of the respondents composing the groups, in the case of Mexico (Group 1), 60% (147) answered that their highest education degree is a bachelor diploma or equivalent, 33% (80) answered that their highest education degree is a master’s degree or equivalent and 7% (17) acknowledged that their highest degree is a doctorate or equivalent. In the case of the individuals from the United Kingdom, the figures are different, as 12% (2) acknowledged that their highest degree is a bachelor diploma or equivalent, 60% (15) answered that their highest education degree is a master’s degree and 28% (7) replied that their highest degree is a doctorate or equivalent as shown in Table 7.4.
In the split by industry sector, Table 7.4 shows that 60% of the respondents working the oil industry in Mexico admitted that their highest education degree is a bachelor degree or equivalent. Consistently, 60% of the respondents from the power generation industry also admitted that their highest education degree is a bachelor degree or equivalent. Overall, the figures of the education degrees in both sectors in Mexico are similar. In comparison, 25% of the respondents in the oil sector and 33% of the respondents in the power generation sector in the United Kingdom hold doctorate degrees or equivalent whereas these numbers go down to a 6% and 7% for the Mexican oil and power generation sectors respectively, trend with is aligned with the research of Castaños-Lomnitz (2003).

<table>
<thead>
<tr>
<th>Work experience</th>
<th>Group 1 Mexico Oil</th>
<th>Group 1 Mexico Power generation</th>
<th>Group 2 UK Oil</th>
<th>Group 2 UK Power generation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months to 2 years</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 to 5 years</td>
<td>34</td>
<td>24</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>59</td>
<td>48</td>
<td>107</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 to 15 years</td>
<td>18</td>
<td>14</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 20 years</td>
<td>18</td>
<td>13</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 to 25 years</td>
<td>6</td>
<td>8</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 25 years</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137</strong></td>
<td><strong>107</strong></td>
<td><strong>12</strong></td>
<td><strong>12</strong></td>
<td><strong>268</strong></td>
</tr>
</tbody>
</table>

Table 7.5 Work experience

The distribution of responses regarding the work experience of the respondents shows that in the case of Mexico, the modal value is 5 to 10 years, with 107 (44%) of the responses falling into this category and, in the case of the United Kingdom, the modal value is 6 months to 2 years, with 12 (48%) responses falling into this category. Nearly two in each three of the respondents in Mexico have between 3 and 10 years of work experience and approximately 75% of the respondents from the United Kingdom have between 6 months and 5 years of working experience, as shown in Table 7.5 above.

In the case of the experience of the respondents as team members, only 9% of the respondents acknowledged having more than 10 years of experience as a team member, and 60% of the individuals answered that they have between 3 and 6 years of experience as team members, as shown in Table 7.6. Moreover, only 9% of the respondents have more than 10 years of experience as team members.
Table 7.6 Experience as Team Member

<table>
<thead>
<tr>
<th>Experience as Team Member</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil Power Generation</td>
<td>Oil Power Generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>8 6</td>
<td>0 1</td>
<td>15</td>
<td>5.6%</td>
</tr>
<tr>
<td>1 year</td>
<td>26 19</td>
<td>2 1</td>
<td>47</td>
<td>17.5%</td>
</tr>
<tr>
<td>2 years</td>
<td>8 6</td>
<td>3 2</td>
<td>21</td>
<td>7.8%</td>
</tr>
<tr>
<td>3 years</td>
<td>27 21</td>
<td>0 2</td>
<td>50</td>
<td>18.7%</td>
</tr>
<tr>
<td>4 years</td>
<td>18 11</td>
<td>1 2</td>
<td>32</td>
<td>11.9%</td>
</tr>
<tr>
<td>5 years</td>
<td>17 12</td>
<td>0 0</td>
<td>29</td>
<td>10.8%</td>
</tr>
<tr>
<td>6 years</td>
<td>23 23</td>
<td>1 2</td>
<td>49</td>
<td>18.3%</td>
</tr>
<tr>
<td>10 years</td>
<td>9 8</td>
<td>1 1</td>
<td>19</td>
<td>7.1%</td>
</tr>
<tr>
<td>11 years</td>
<td>0 0</td>
<td>1 0</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>13 years</td>
<td>0 0</td>
<td>2 0</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td>14 years</td>
<td>0 0</td>
<td>1 0</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>16 years</td>
<td>1 1</td>
<td>0 0</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137 107</strong></td>
<td><strong>12</strong></td>
<td><strong>12</strong></td>
<td><strong>268 100%</strong></td>
</tr>
</tbody>
</table>

Regarding the experience of the respondents as project managers, the modal value was less than 1 year, with 81 respondents (30%) acknowledging that they have been working as project managers for less than a year and 7.4% of the respondents (20 individuals) responded that they have more than eight years of working experience as project managers, as shown in Table 7.7.

Table 7.7 Experience as Project Manager

<table>
<thead>
<tr>
<th>Experience as Project Manager</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil Power Generation</td>
<td>Oil Power Generation</td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>43 29</td>
<td>1 8</td>
<td>81</td>
</tr>
<tr>
<td>1 year</td>
<td>34 30</td>
<td>2 2</td>
<td>68</td>
</tr>
<tr>
<td>2 years</td>
<td>27 17</td>
<td>2 0</td>
<td>46</td>
</tr>
<tr>
<td>3 years</td>
<td>8 8</td>
<td>1 1</td>
<td>18</td>
</tr>
<tr>
<td>4 years</td>
<td>0 0</td>
<td>1 0</td>
<td>1</td>
</tr>
<tr>
<td>5 years</td>
<td>16 14</td>
<td>1 0</td>
<td>31</td>
</tr>
<tr>
<td>6 years</td>
<td>0 0</td>
<td>3 0</td>
<td>3</td>
</tr>
<tr>
<td>8 years</td>
<td>8 8</td>
<td>1 1</td>
<td>18</td>
</tr>
<tr>
<td>13 years</td>
<td>1 1</td>
<td>0 0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137 107</strong></td>
<td><strong>12</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Table 7.8 shows that in the case of the United Kingdom, the mean for the project team members is 5.1 years and this number goes down to 3.92 years in the case of the respondents in Mexico. For the case of the project managers, the mean for the years of experience of the respondents in Mexico was 2.07 years and 2.38 years of experience for the individuals in the United Kingdom.
### Years of experience (mean):

<table>
<thead>
<tr>
<th></th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project team member</td>
<td>3.92</td>
<td>5.10</td>
</tr>
<tr>
<td>Project manager</td>
<td>2.07</td>
<td>2.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>244</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

Table 7.8 Years of experience (Mean)

In the case of the working experience of the respondents in the Mexican oil and power generation shows that both sectors are rather similar as nearly two out of three of the respondents have between three to ten years of working experience. In the United Kingdom, the respondents in the oil industry are distributed between 6 months and 15 years, whereas in the power generation industry they are distributed between six months and 5 years of working experience.

The duration of the project (presented in Table 7.9) shows that approximately one in three of the respondents (98) works in projects which last from 7 to 12 months, one in four (70) works in projects which last from 3 to six months and almost one in five (50) works for projects which a life span of more than twenty four months, which is in line with the nature of the sectors relevant to this research (Byrne, 2002).

<table>
<thead>
<tr>
<th>Duration of the Project</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power Generation</td>
<td>Oil</td>
<td>Power Generation</td>
</tr>
<tr>
<td>Less than 3 months</td>
<td>8</td>
<td>7</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>3 to 6 months</td>
<td>37</td>
<td>27</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>7 to 12 months</td>
<td>52</td>
<td>36</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>13 to 18 months</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>19 to 23 months</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>More than 24 months</td>
<td>25</td>
<td>22</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137</strong></td>
<td><strong>107</strong></td>
<td><strong>12</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Table 7.9 Duration of the project

From the individuals who answered the questionnaire, nearly 40% (102 respondents) were working in plant design projects, 52 (approximately 20%) in construction projects, 36 (13%) in equipment or systems installation projects and 32 (12%) in maintenance projects. This shows that approximately 82% of the respondents work in projects considered as “core” for the sectors where the employees who answered the questionnaire work and, although in these sectors research is an important part, only 15 individuals, accounting for 5.6% of the total sample work in research projects in these sectors, as shown in Table 7.10.

189
### Table 7.10 Type of project

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power</td>
<td>Oil</td>
<td>Power</td>
</tr>
<tr>
<td></td>
<td>Generation</td>
<td>Generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant design</td>
<td>82</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Construction</td>
<td>50</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Equipment or systems installation</td>
<td>1</td>
<td>34</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Maintenance</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Research</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Software development</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Administrative</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Event (one-off projects)</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Business development</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Credit evaluation</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New product development</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Public relationships</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>107</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

With respect to the size of the teams, the modal value from the sample shows that 42% of the respondents work in teams composed from 1 to 5 members. The second most common team size is 6 to 10 members with 31% of the respondents working in teams of this size and nearly 9% of the respondents work in teams composed by 11 to 15 members. Table 7.11 shows the number if responses by team size.

### Table 7.11 Size of teams

<table>
<thead>
<tr>
<th>Size of teams</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Generation</td>
<td>Generation</td>
<td></td>
</tr>
<tr>
<td>1 to 5 members</td>
<td>61</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td>6 to 10 members</td>
<td>47</td>
<td>32</td>
<td>11</td>
</tr>
<tr>
<td>11 to 15 members</td>
<td>11</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>16 to 20 members</td>
<td>8</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>More than 20 members</td>
<td>10</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>107</td>
<td>12</td>
</tr>
</tbody>
</table>

### Table 7.12 Outcome of the project

<table>
<thead>
<tr>
<th>Outcome of the project</th>
<th>Group 1 Mexico</th>
<th>Group 2 UK</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td></td>
<td>generation</td>
<td>generation</td>
<td></td>
</tr>
<tr>
<td>Successful</td>
<td>129</td>
<td>100</td>
<td>12</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>8</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>107</td>
<td>12</td>
</tr>
</tbody>
</table>

Regarding the outcome of the project, of the respondents from the Mexican oil sector, 5% classified their projects as unsuccessful along with 6% of the respondents from the
Mexican power generation sector. In the case of the United Kingdom, none of the respondents from the oil sector classified their projects as unsuccessful and only 1 out of 12 of the respondents from the power generation industry answered that the project had been unsuccessful as shown in Table 7.12 above.

Finally, the language spoken at work is directly linked to the residence of the respondents, as in the case of those who reside in Mexico, even though their nationalities are other than Mexican and their mother tongue other than Spanish, they use Spanish in their workplace and it is the same for the individuals in the United Kingdom, who use English at their workplaces even though it is not their first language. In this case, 243 of the respondents in Mexico speak Spanish while one speaks English at work and all the respondents in the United Kingdom (24) speak English at work.

Due to the independent and small sized samples, the Mann Whitney non-parametric t-test was applied to the data. This test assesses whether two samples of observations come from the same distribution and requires the samples to be independent and the observations continuous (Hollander & Wolfe, 1999). According to Morgan et al. (2001), the Levene’s F-values shown in Table 7.13 suggest that the variances of the two groups are equal, showing that the samples are reliable and that the error expected from the test is constrained by the size of the sample while at the same time it shows that the samples are not divergent (Jaccard, 1998).

Additionally, the statistical significance shown in Table 7.13 for all the factors was p<0.001, which indicates that there is a significant difference between the two groups enough to consider both samples different, discriminating scores between the groups better than by probability (Jaccard, 1998), therefore the project management questionnaire proved a useful tool to elicit information regarding project management success factors.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>F-Levene value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
<td>Group 1</td>
<td>Group 2</td>
</tr>
<tr>
<td></td>
<td>Mexico</td>
<td>UK</td>
<td>Mexico</td>
<td>UK</td>
</tr>
<tr>
<td>Project process</td>
<td>93.94</td>
<td>86.46</td>
<td>14.77</td>
<td>19.09</td>
</tr>
<tr>
<td>People in projects</td>
<td>83.30</td>
<td>81.00</td>
<td>15.36</td>
<td>16.63</td>
</tr>
<tr>
<td>Project structures</td>
<td>56.73</td>
<td>59.50</td>
<td>8.39</td>
<td>8.83</td>
</tr>
<tr>
<td>Project systems</td>
<td>56.50</td>
<td>52.17</td>
<td>10.23</td>
<td>11.43</td>
</tr>
<tr>
<td>Project environment</td>
<td>47.63</td>
<td>47.21</td>
<td>8.74</td>
<td>7.44</td>
</tr>
</tbody>
</table>

Table 7.13 Independent sample, Mann-Whitney t-test between two groups
7.3.2 Item analysis

The initial 92 items (see Appendix F) compiled from the elements composing the questionnaire were divided into five sections, based on the five-dimension model developed by the author (derived from the literature review) for the purposes of this research derived from the literature regarding project management culture described in Chapter 5: Project process (questions 1 - 26); People in projects (questions 27 - 49); Project systems (questions 50 - 65), Project structure (questions 66 - 80) and Project environment (questions 81 - 92). The 92 questions are listed in Appendix E.

Each of the questions composing the questionnaire was subjected to previous analysis by testing them on a sample of respondents and gathering feedback, regarding the clarity of the question, its relevance and the similarities between questions which could make them confusing. This analysis was carried out using the pilot questionnaire (Appendix E) and therefore, some questions were eliminated. Figure 7.1 shows the number of items within the five-dimension questionnaire.

![Bar chart showing the number of items within each section of the questionnaire](image)

Figure 7.1 Number of items within the five-dimension questionnaire

For each one of the elements of the questionnaire, the number of respondents was the same, 268. No data was spoiled or had missing values due to restrictions applied to the online questionnaire which prevented any question from being left unanswered. All the questions have a total item correlation indicating that the items in the questionnaire are valid. According to Gogolin & Swarts (1992) “items that correlate between 0.0 and 0.30 contribute little to the measurement of individual differences in attitudes and hence
reduce the reliability of the total scale.” See Appendix G to consult the tables with the item-scale analysis for each one of the dimensions of the questionnaire.

The skewness of a sample shows the asymmetry of the probability distribution of a variable taking the value of 0 for a symmetrical distribution. Its values are positive if the distribution tapers off to the right slower than to the left and negative if the distribution tapers to the left slower than to the right (Belyavin, 1981). At the same time, the Kurtosis measures the extent to which the tails of the distribution are thicker or thinner than the tails of a Normal distribution, which has a Kurtosis of 0, therefore, a distribution with a positive Kurtosis has a thicker tail than a Normal distribution and a distribution with a negative Kurtosis has a thinner tail than that of a Normal distribution (Belyavin, 1981). In other words, the Kurtosis measures whether the data are peaked or flat in relation to a normal distribution.

Cronbach’s alpha is a reliability index associated with the variation accounted for by the real score of the underlying construct, therefore, measuring the reliability of the scale. This means that a variable is considered reliable when it returns a stable response (Santos, 1999). According to Nunnally & Bernstein (1994), a minimum level of 0.70 for a Cronbach alpha coefficient is recommended to reliability validation. Therefore the overall reliability of the items per element of the questionnaire is highly acceptable with Cronbach alpha coefficients of 0.932, 0.949, 0.886, 0.908 and 0.936 respectively (see Table 7.14).

<table>
<thead>
<tr>
<th>Dimension scale</th>
<th>Project Processes</th>
<th>People in projects</th>
<th>Project Structures</th>
<th>Project Systems</th>
<th>Project Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of items</td>
<td>26</td>
<td>23</td>
<td>16</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Mean score</td>
<td>93.270</td>
<td>83.100</td>
<td>56.980</td>
<td>59.110</td>
<td>47.590</td>
</tr>
<tr>
<td>Variance</td>
<td>234.564</td>
<td>239.009</td>
<td>71.550</td>
<td>108.044</td>
<td>74.325</td>
</tr>
<tr>
<td>Std. dev.</td>
<td>15.315</td>
<td>15.460</td>
<td>8.459</td>
<td>10.394</td>
<td>8.621</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.130</td>
<td>-0.256</td>
<td>-0.131</td>
<td>-0.624</td>
<td>-0.335</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.465</td>
<td>-0.440</td>
<td>-0.601</td>
<td>0.756</td>
<td>0.092</td>
</tr>
<tr>
<td>Cronbach Alpha</td>
<td>0.932</td>
<td>0.949</td>
<td>0.886</td>
<td>0.908</td>
<td>0.936</td>
</tr>
</tbody>
</table>

Table 7.14 Descriptive statistics for the main questionnaire (N=268)

As shown in Table 7.14, assuming a normal distribution, the Skewness values of the five dimensions of the questionnaire show that in this case all of them are shifted to the left, hence more data is present on the left tail than it would be expected in a normal distribution. In the case of the “project processes” and “project structures” dimensions, the shift to the left is almost of the same magnitude. The people in projects dimension
shows a higher negative Skewness value and the dimension showing the highest Skewness value is “project systems”. In the case of the Kurtosis, the “project processes” and “people in projects” dimensions present negative values relatively close and the project structures dimension shows an even lower negative value, indicating a more rounded peak with wider sides if compared to a normal distribution curve. The “project environment” dimension shows a Kurtosis value almost indicating that its peak and sides are almost as those of a normal distribution whereas the “project systems” dimension presents a Kurtosis value indicating a sharper peak, above that of a normal distribution. Figure 7.2 shows these curves compared to a normal distribution curve.

Figure 7.2 Data distribution per dimension of the questionnaire

The scale inter-correlation in Table 7.15 shows that the factors composing the questionnaire are highly inter-correlated, which is expected from an interdependent set of factors as the inter-correlation between each one of the factors is higher than 0.5 (Cohen, 1988). Scale inter-correlation is important because it demonstrates that the elements of the questionnaire are closely related and that the scale measures values are consistent.

<table>
<thead>
<tr>
<th></th>
<th>Project Processes</th>
<th>People in projects</th>
<th>Project Structures</th>
<th>Project Systems</th>
<th>Project Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Processes</td>
<td>1.000</td>
<td>0.881</td>
<td>0.815</td>
<td>0.809</td>
<td>0.830</td>
</tr>
<tr>
<td>People in projects</td>
<td>0.881</td>
<td>1.000</td>
<td>0.872</td>
<td>0.687</td>
<td>0.859</td>
</tr>
<tr>
<td>Project Structures</td>
<td>0.815</td>
<td>0.872</td>
<td>1.000</td>
<td>0.574</td>
<td>0.833</td>
</tr>
<tr>
<td>Project Systems</td>
<td>0.809</td>
<td>0.687</td>
<td>0.574</td>
<td>1.000</td>
<td>0.665</td>
</tr>
<tr>
<td>Project Environment</td>
<td>0.830</td>
<td>0.859</td>
<td>0.833</td>
<td>0.665</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 7.15 Scale inter-correlations
7.4 Application of the Project Management Questionnaire

As described in Chapter 6, two sample groups (one in Mexico and the control one in the United Kingdom) were used to gather the data required to answer the research questions previously mentioned. The data obtained from the sample groups is shown in Tables 7.11 to 7.15.

Tables 7.1 to 7.11 show the aggregation of the biographical data according to the two sample groups. Group 2, composed by the individuals in the United Kingdom, was expected to have a clearly defined set of factors leading to project success; because this group is trained in the use of formal project management methodologies, there are written procedures to follow, established rewards in the case of project success and its members are knowledgeable in such methodologies and techniques, as stated by Crawford (2000a; 2000b; 2005b), Minarro-Viseras et al. (2005), Lloyd & Simpson (2005) and Uzuebugnam (2005), whereas the factors leading to project success in Group 1, composed by individuals in Mexico, were not properly defined and their presence was not evident due to the lack of established procedures even though rewards are given if projects are successfully completed (Vera-Cruz, 2006; Garcia & Suarez, 2007).

7.5 Analysis

Following the procedure described in Chapter 6, the analysis of the data gathered during the application of the main questionnaire. This is divided in 5 initial stages, each one directly linked to a specific sub-division of the main questionnaire. In order to analyse the data, a comparative approach was used, dividing the data in two separate clusters, using the “Country of Residence” variable as a clustering factor. The questions in each one of the questionnaire sub-divisions are shown in Appendix F, whereas the item analysis for each one of the questions composing the questionnaire sub-divisions is shown in Appendix G.

The following Sections present the answers of the questions considered most relevant to addressing the previously mentioned research objectives. Although the answers for the questions are described below, the most important questions (with the highest scores) are illustrated with graphs (Figures 7.3 to 7.21). However, for further reference, Appendix H presents the graphs for all the questions in the main questionnaire (92).
7.5.1 Processes in the project

1. The expectations of the customers are clearly defined

In the case of the expectations of the customers being clearly defined from the beginning of the project, 61% of the respondents in Mexico and 46% of the respondents in the United Kingdom agreed that usually the expectations of customers are clearly defined. The responses from respondents in Mexico and the United Kingdom follow the same pattern, even though the percentages are slightly different.

In both cases, responses rise up starting in “seldom” (7% and 8% for Mexico and the United Kingdom), peak in “usually” (61% and 46% for Mexico and the United Kingdom, respectively) and then fall down in “always” (19% and 13% in Mexico and the United Kingdom).

This suggests that the respondents believe their projects are based on clear expectations, eliminating uncertainties and giving the project team the basis for a successful development of the project.

2. The expectations of the external stakeholders are clearly defined

In the case of the expectations of the external stakeholders being clearly defined, practically both samples responded equally as 63% of the respondents in Mexico and 62% of the respondents in the United Kingdom agreed that usually or always the expectations of external stakeholders are clearly defined.

Regarding the answers for this question, the responses from individuals in both countries roughly follow the same pattern, rising up from “seldom” (1% and 21% for Mexico and the United Kingdom, respectively) to peak at 44% and 33% respectively for Mexico and the United Kingdom at “usually” and then fall down at “always”, with 19% for Mexico and 21% for the United Kingdom.

As with the expectations of the customers, the responses to this question suggest that project team members and stakeholders know what it is expected from them, which in turn leads to less uncertainty and better allocation of tasks and responsibilities.
3. Project processes and activities are clearly described

For 37% of the respondents in Mexico, project processes and activities are always clearly described and a further 33% admits that the project processes in their project are usually clearly described. On the other hand 25% of the respondents in the United Kingdom acknowledged that the project processes and activities are usually clearly described and a further 37% admitted that this quite often happens. Furthermore, 12% of the individuals in Mexico and 21% of the respondents in the United Kingdom acknowledged that this seldom happens, as shown in Figure 7.3 below.

![Figure 7.3 Processes and activities are clearly described](image)

In this case, project teams have the advantage of knowing what tasks they need to follow are by having a clear description of the processes and activities surrounding a project. Furthermore, project team members and stakeholders can also more easily measure and control the progress of the project if the processes and activities are clearly described as this gives the project team the ability of assigning activities to the most suitable members of the team. The responses indicate that a significant proportion of the project teams in Mexico and the UK find that the project processes and activities are clearly described.

4. Past experiences and mistakes are well documented

The documentation of past experiences and mistakes for other team members to learn about them is an issue showing slight differences in the perception from individuals in Mexico and those in the United Kingdom. Approximately 37% of the respondents in Mexico acknowledged that experiences and mistakes happening in their projects are always documented, opposed to a mere 13% in the United Kingdom. Moreover, a further 32% of the respondents in Mexico mentioned that this documentation usually happens, compared with approximately 38% of answers from respondents in the United Kingdom, as shown in Figure 7.4.
In the case of the documentation occurring less frequently, Figure 7.4 shows that approximately 23% of the respondents in Mexico and 25% of those in the United Kingdom mentioned that it seldom happens.

The answers to this question suggest that this is a task taken seriously in both countries. By documenting past experiences and mistakes, project teams will have a record of what happened during the project, what went well and what went wrong, helping them during future projects should similar problems arise.

5. There is a clear project plan

As Figure 7.5 below shows, the behaviour of the answers for both samples (Mexico and the United Kingdom) regarding the existence of a clear project plan is rather similar, rising up from “seldom” to peak at “usually” and then fall down at “always”.

In this case 44% for the respondents in Mexico and 42% of those in the United Kingdom mentioned that their projects usually have a clear project plan. Furthermore, 32% of the respondents in Mexico and 13% of the individuals in the United Kingdom agreed that the projects always have a clear plan. In the case of lack of plans, 6% of the employees working in Mexico and 17% of the individuals in the United Kingdom acknowledged that their projects seldom have clear plans as shown in Figure 7.5 above.
The responses to this question suggest that project teams in both countries perceive their projects as having clear plans. However, project teams in the United Kingdom appear to acknowledge that their projects do not always have a clear project plan, which in some cases could lead to problems, misunderstandings and delays.

6. Each team member has a clear understanding of her/his role

The answers to the question regarding the understanding of the role by each member of the team shows that the pattern of the answers from respondents in Mexico and the United Kingdom are almost reversed.

Approximately 33% of the respondents in the group in the United Kingdom always know what their role is within the project and for the respondents based in organisations in Mexico only 13% always know their role. Nearly 45% of the individuals in Mexico admitted that they usually have a clear understanding of their role, opposed to approximately 21% of those in the United Kingdom; 42% of the respondents in the United Kingdom mentioned that they quite often understand what their roles are while only 18% of the individuals in Mexico answered to the same vein. Finally, nearly 24% of the respondents in Mexico and 4% of the individuals in the United Kingdom acknowledged that they seldom understand what their roles are.

These responses suggest that project members have a better understanding of project roles in the United Kingdom which in turn could imply that project members are better assigned to tasks. However, the responses from project team members in Mexico suggest that roles and tasks are well understood, although not to the levels of the teams in the United Kingdom.

7. There is a systematic monitoring of the progress of the project

Regarding the monitoring of the progress of the process, 25% of the answers of the respondents in the United Kingdom acknowledged that the monitoring of the progress of the project is a process which is always present, whereas only 7% of respondents in Mexico mentioned that this always happens, as shown in Figure 7.6 below.
According to 57% of the answers from respondents in Mexico and 42% of the responses from individuals in the United Kingdom, there usually is a systematic monitoring of the progress of the project while 35% of the employees in Mexico and 25% of those in the United Kingdom acknowledge that this happens quite often.

The responses to this question suggest that projects are relatively well monitored in both countries. Furthermore, it is feasible to extrapolate this to the fact that by monitoring the project progress, project teams have a tighter control of what is happening around the project and as a consequence, the entire project is kept under close and effective supervision.

8. There are regular communication sessions

According to the answers from the individuals who answered the questionnaire, approximately 38% of those in Mexico and 25% of those in the United Kingdom acknowledged that there always are regular communication sessions regarding their projects. A further 27% in the case of Mexico and 46% in the case of the United Kingdom admitted that their teams usually have communication sessions as shown in Figure 7.7.
As Figure 7.7 shows, approximately 24% of the respondents in Mexico and 13% of the individuals in the United Kingdom admitted that their teams quite often have regular communication sessions regarding the project and finally 12% of the respondents in Mexico and 17% of the individuals in the United Kingdom acknowledged that their teams seldom have regular communication sessions.

The responses to this question suggest that project teams in Mexico have communication sessions more regularly than in the United Kingdom. However, these responses could be biased by the cultural perceptions of the respondents: in Mexico, team members regard informal meetings as communication sessions, whereas a more formal approach for meetings is followed in the United Kingdom.

9. Control measures are clearly defined

In 40% of the responses of the individuals based in Mexico, control measures are usually or always clearly defined, while 50% of the responses of the United Kingdom-based respondents agreed to the same extent. Moreover, approximately 54% of the individuals in Mexico admitted that control measures in their projects are clearly defined quite often while 33% of the respondents in the United Kingdom answered in the same vein.

The responses to this question are closely linked to those from the monitoring of the progress of the project (Section 7.5.1 - 7). By monitoring a project closely, control measures are put in place more easily, and if these are clearly defined from the beginning of the project, along with the roles and responsibilities of the team members, the project manager has the ability of keeping the project on track without extra effort.

10. Feedback on project processes and activities is provided on regular basis

When asked if feedback on project processes and activities is provided on a regular basis, approximately 58% of the respondents in the United Kingdom and 52% of the respondents in Mexico mentioned that this usually or always happens as shown in Figure 7.8.
Additionally, of the respondents in Mexico, approximately 42% admitted that feedback on processes and activities is provided on regular basis quite often, contrasting with just 21% of the respondents in the United Kingdom answering within the same category.

The responses to this question suggest that project teams in Mexico perceive that feedback is provided more often than to their counterparts in the United Kingdom. As is the case regarding the responses to the question related to regular communication sessions (Section 7.5.1 - 8), due to cultural differences, these answers appear to indicate that project teams in Mexico have a different perception of how feedback is provided.

11. Project information is open to all team members

Team members having access to project information was a question where the answers from individuals in both countries show similarities. Approximately 31% of the respondents in Mexico and 33% of those in the United Kingdom acknowledged that their team members always have access to project information.

Nearly 37% of the respondents in Mexico and approximately 38% of the individuals in the United Kingdom admitted that their teams usually have open access to project information, making this the category with the majority of answers for both groups which contrasts with 6% of the respondents in Mexico and 17% of the individuals in the United Kingdom acknowledging that their teams seldom have open access to project information.

These responses suggest that despite the cultural differences between the project teams in Mexico and the United Kingdom, the perception of access to project information is almost the same. This also suggests that the reason for access to project information may be beyond cultural elements and is more rooted in the need to keep the project team informed and maintain the project elements open to prevent misunderstandings.
From the previous statements, it is possible to gather that the area of processes in the project shares the same underlying principles in both countries and in the organisations working on them. It is important to mention that the areas where differences are present are those where traits inherent to the local culture are deeply embedded and intertwined within the organisation and the most important case is that of the bureaucracy and use of meetings. Also, when talking about the delivery of the projects, the respondents in Mexico agreed that their projects are mostly focused on outcomes, rather than activities and this is also reflected in the projects exceeding their budgets at times.

7.5.2 People in projects

1. Team members have a good relationship with each other

The answers for the question related to team members having a relationship with each other shows a contrasting difference. On the one hand, nearly 70% of the respondents based in Mexico answered that the team members usually have a good relationship with each other while only 13% of the respondents in the United Kingdom answered in the same vein. Moreover, a further 6% of the respondents in Mexico admitted that team members always have a good relationship with each other contrasting with 42% of the respondents in the United Kingdom who answered within the same category, as shown in Figure 7.9.

![Figure 7.9 Relationship between team members](image)

On the other hand, 19% of the responses from individuals in Mexico and 33% of those from respondents in the United Kingdom acknowledge that team members quite often have a good relationship with each other and, 6% of the answers from respondents in Mexico and 13% from individuals in the United Kingdom show that team members seldom have a good relationship with each other.
It is important to note that the responses from the project members from Mexico are mainly grouped in the usually point of the scale, contrary to the more gradual spread of the responses from the project members in the United Kingdom. This suggests that the responses may be influenced by a cultural variable. Furthermore, the answers from the respondents in the United Kingdom could suggest that project team members may be selected due to the relationship they have with other team members, along with their suitability to carry out the tasks needed for the project.

2. Conflict between team members is recognised and dealt with

Recognising and managing conflict between team members is a question where the answers from respondents in both countries show some similarities. Approximately 25% of the respondents in Mexico and 29% of those in the United Kingdom acknowledged that conflict is always recognised and dealt with. Also, almost 38% of the respondents in Mexico and 33% in the United Kingdom mentioned that conflict between team members is usually recognised and dealt with as shown in Figure 7.10.

![Figure 7.10 Conflict is recognised and dealt with](image)

Additionally, as shown in Figure 7.10, almost 37% of the individuals in Mexico and 21% of those in the United Kingdom admitted that conflict is quite often recognised and dealt with in their projects. Finally, nearly 17% of the respondents in the United Kingdom acknowledged that conflict between team members is seldom recognised in their projects.

The distribution of the answers suggest that respondents in both countries perceive that conflict is recognised and dealt with, despite cultural differences between project team members in Mexico and the United Kingdom. Also, these responses suggest that in the United Kingdom, some of the respondents may perceive that conflict is sometimes not dealt with, which could be attributed to the cultural composition of the sample.
3. Power struggles and internal politics are managed before the project implementation

Dealing with power struggles and politics shows contrasting differences between the samples. For example, approximately 46% of the respondents in the United Kingdom admitted that power struggles and internal politics are never managed before the project implementation, contrasting with a 12% of the responses from individuals in Mexico. Additionally, nearly 30% of the answers from individuals in Mexico acknowledge that the managing of power struggles and internal politics seldom happens before the project implementation, as shown in Figure 7.11 below.

![Figure 7.11 Power struggles and politics handling](image)

Moving towards the positive side of the categories, 21% of individuals in the United Kingdom admitted that power struggles and internal politics are quite often managed before the implementation of the project but only 1% of the respondents in Mexico answered in the same vein. Moreover, nearly 32% of the employees in Mexico mentioned that management of power struggles and politics usually happens before the implementation phase. Finally, nearly 21% of the respondents in the United Kingdom and 25% of those in Mexico recognised that power struggles and internal politics are always managed before the project implementation.

That nearly half of the respondents in the United Kingdom perceive that power struggles and politics are not managed before the project starts suggests that the cultural differences between project team members in the United Kingdom and Mexico regarding power struggles and project politics may be significant. Moreover, it could also suggest that what respondents from the United Kingdom regard as a power struggle or project politics, may not correspond to what the respondents from Mexico classify as such.
4. The project manager has a good relationship with the team members

The answers for the question related to the relationship of the project manager with the team members show that individuals in both countries share a rather similar point of view. First, the answers of the respondents from Mexico are clustered on the top three categories of the scale, whereas the answers from respondents in the UK cover the top four categories. Second, of the individuals based in Mexico, approximately 42% recognise that the project manager always has a good relationship with all members of the team and 33% of the respondents based in the United Kingdom provided similar answers. Also, nearly 40% of the respondents in Mexico and 25% of those in the United Kingdom admitted that the project manager usually has a good relationship with the team members, as shown in Figure 7.12 below.

![Figure 7.12 Project manager relationship with team members](image)

Additionally, as Figure 7.12 shows, nearly 18% of the respondents in Mexico and approximately 21% of the individuals in the United Kingdom mentioned that in their projects, the project manager quite often has a good relationship with the team members. Finally, a further 20% of the respondents in the United Kingdom admitted that the project manager in their project seldom has a good relationship with the team members.

The responses to this question suggest that project team members in Mexico perceive that they have a better relationship with the project manager than those in the United Kingdom. A sizeable proportion of project members in the United Kingdom work in teams where they seldom regard their relationship with the project manager as good could suggest that they may not regard having a good relationship with the project manager as a requisite for project success.
5. Team members are encouraged to learn from past mistakes

Encouraging team members to learn from past mistakes also shows slightly different perceptions amongst individuals working in Mexico and those in the United Kingdom. The answers from respondents in Mexico show that the scale rises up from “seldom” to “always”, whereas the answers from respondents in the United Kingdom rise up from “seldom”, peak at “usually” and fall down again at “always”. Fifty percent of the respondents in Mexico answered that they are always encouraged to learn from past mistakes in comparison with approximately 21% of the respondents in the United Kingdom. Furthermore, 50% of the individuals in the United Kingdom and almost 26% of the respondents in Mexico admitted that they are usually encouraged to learn from past mistakes as shown in Figure 7.13.

![Figure 7.13 Learning from past mistakes](image)

Additionally, 25% of the respondents in the United Kingdom acknowledged that in their projects, team members are quite often encouraged to learn from past mistakes, contrasting with almost 13% of the respondents in Mexico answering similarly. Finally, approximately 4% of the respondents in the United Kingdom admitted that they are seldom encouraged to learn from past mistakes in their projects, while almost 12% of the respondents in Mexico answered within the same category.

These responses suggest that project team members in Mexico and the United Kingdom take this task as part of their daily work. Furthermore, the responses to this question appear to correlate to those of the documentation of past experiences and mistakes for both countries (Section 7.5.2 - 5).
6. The team members are experienced in the use of project management methodologies and tools

According to the answers from approximately 61% of the respondents in Mexico, team members are quite often experienced in the use of project management methodologies and tools while nearly 38% of the respondents in the United Kingdom answered in the same way. Moreover, 33% of the respondents in the United Kingdom acknowledged that team members are usually experienced in the use of project management tools and methodologies, view shared by approximately 27% of the respondents in Mexico. Finally, 13% of the respondents in Mexico and almost 8% of those in the United Kingdom admitted that in their projects, team members seldom have experience in the use of project management methodologies and tools.

These responses suggest that there appears to be little cultural influence on the project team members regarding the use of project management methodologies. Moreover, the difference in the responses from the team members in the United Kingdom and Mexico appear to suggest that team members in both countries view the use of project management methodologies as part of the experience and abilities required to work in a project.

From the previous statements it is possible to gather that the perception of the people working in projects in Mexico is different to that of the people working in the United Kingdom. Creating and maintaining relationships with the members of the teams as well as tolerating conflicts are areas where the individuals in Mexico show a friendlier approach, whereas the respondents in the United Kingdom seem to maintain these relationships in strictly work-related basis.

Dealing with power struggles and politics before the project starts is a task which respondents in Mexico mentioned was performed in the vast majority of the occasions but the perception of the individuals in the United Kingdom was the total opposite, which makes this point more interesting.

Finally, the majority of the respondents in both the United Kingdom and Mexico agreed that having experience in the use of project management methodologies and tools occurs frequently which proves that although different, the use of these methodologies
is widespread over sectors and industries and is regarded as a factor for the success of the projects.

7.5.3 Project structures

1. Teams have structural flexibility to perform their tasks

Another item where the differences are noticeable is that of the structural flexibility of the teams to perform their tasks. Approximately 74% of the respondents in Mexico admitted that they usually have the flexibility to perform their tasks, compared to nearly 46% of the respondents in the United Kingdom who acknowledged the same statement. Moreover, approximately 21% of the respondents in the United Kingdom accepted that their teams always have structural flexibility while a mere 7% of the respondents based in Mexico answered within the same frame. Furthermore, almost 17% of the respondents in the United Kingdom and approximately 19% of those in Mexico admitted that in their projects, teams quite often have structural flexibility to perform their tasks and a further 17% of the respondents in the United Kingdom acknowledged that this seldom happens in their projects.

As with the responses to the questions in the People in Projects category, the differences in the responses to this question from the project team members in Mexico and the United Kingdom could be attributed to the different perception that the team members in each country has regarding how project team members participate in projects. Moreover, although the respondents from the Mexico appear to have more flexibility when performing tasks, this could be attributed to a different cultural perception of what project team members can or cannot do while carrying out a project.

2. The team organises its own work activities

When asked about the team organising their own work activities, the individuals in both countries provided responses showing some similarities. The data shows that approximately 7% of the respondents based in Mexico recognised that their teams always organise their work activities while in the United Kingdom this percentage is almost 33%. The answers of nearly 68% of the respondents in Mexico acknowledge that in their projects teams usually organise their own work activities and this view is shared by approximately 33% of the respondents in the United Kingdom. Moreover, 25% of the respondents in the United Kingdom and Mexico answered that in their projects, teams quite often organise their own work activities and finally, approximately 8% of
the respondents in the United Kingdom admitted that this seldom happens in their projects.

In this case, the similarity of the responses suggest that project team members organising their own work activities may not mainly influenced by cultural perceptions. Furthermore, the aggregation of the responses from team members in both Mexico and the United Kingdom could suggest that this task is general to all project teams.

3. Project teams are capable of responding immediately to changes in the external environment

Responding immediately to changes in the external environment of the project is another area where the two samples present different points of view. In the case of the respondents in the United Kingdom, almost 38% answered that their teams always respond immediately to changes in the external environment and in Mexico only 6% of the individuals accepted that this always happens. Moreover, nearly 58% of the respondents in Mexico mentioned that project teams are usually capable of responding immediately to changes in the external environment, an answer shared by almost 17% of the respondents in the United Kingdom, as shown in Figure 7.14.

![Figure 7.14 Immediate response to changes in environment](image)

Also 30% of the respondents in Mexico and approximately 29% of those in the United Kingdom admitted that project teams in their organisations quite often are capable of responding to changes in the external environment immediately. Finally, 17% of the respondents in the United Kingdom and almost 6% of those in Mexico acknowledged that project teams seldom are capable to respond immediately to changes in the external environment.

The responses to this question suggest that even though the majority of project team members in Mexico usually respond immediately to changes in the project environment
and a sizeable portion of the project team members in the United Kingdom responded that their teams always respond immediately to changes in the environment, the perception of time could be influenced by the differences in time perception in each one of the cultural environments, as suggested by Hofstede (1980a; 1997; 1998).

4. The structure of the organisation supports project teams

The answers for the question related to the structure of the organisation supporting project teams show rather different perceptions from respondents in both countries. For approximately 38% of the respondents based in the United Kingdom their organisations always support the project teams, a trend supported by only 13% of the responses from the individuals working in Mexico. Moreover, nearly 54% of the respondents in the United Kingdom admitted that their organisations usually support project teams, opposed to nearly 32% of the respondents answering similarly.

![Figure 7.15 Organisation supports project teams](image)

As Figure 7.15 shows, approximately 24% of the individuals in Mexico acknowledged that their organisations quite often support project teams, however, approximately 8% of the answers from those in the United Kingdom perceived this. Finally, nearly 31% of the respondents in Mexico admitted that the structure of their organisations seldom supported project teams.

From the data analysed, it is possible to surmise that the respondents in Mexico perceive their teams being more flexible and with more decision-making capabilities than the ones in the United Kingdom, because even when they recognise that there is more bureaucracy and politics surrounding their projects, the respondents from Mexico also acknowledge that there is flexibility in their teams, as noted on page 209. At the same time, these capabilities are not used to their full extent as their teams do not always respond immediately to changes in the external environment, due perhaps to the lack of decisions about how to react to these changes (as shown on page 210).
At last, one of the most common pre-conceptions about Latin people is clearly shown when the vast majority of the people based in Mexico admitted that they and their teams would do whatever it takes them to attain the objectives of the project despite the means used for these objectives to be achieved.

### 7.5.4 Project systems

1. The project breakdown structures, start and finish dates, budget and resources allocation are clearly structured and defined

In the projects addressed by the individuals located in Mexico, approximately 32% of the responses mention that project breakdown structures, start and finish dates and allocation of budget and resources are always clearly structured and defined compared to nearly 21% of the projects addressed by individuals based in the United Kingdom. Furthermore, almost 43% of the respondents in Mexico and 33% of the respondents in the United Kingdom acknowledged that this definition usually takes place and, a further 38% of the respondents in the United Kingdom and 13% of the respondents in Mexico admitted that it happens quite often. Finally, approximately 12% of the respondents in Mexico and nearly 8% of those in the United Kingdom mentioned that in their organisations, the structuring and definition of projects, start and finish dates, budget and resources allocation seldom happens.

![Figure 7.16 Project breakdown structures are clearly defined](image)

Although the responses to this question suggest a similarity between the teams in Mexico and the United Kingdom, the responses also suggest that there is a cultural background element which may influence the perception of the definition of project breakdown structures. This could be linked to the power distance elements suggested by Hofstede (1980a; 1997; 1998), which could explain why a greater percentage of team members in Mexico perceive that the project breakdown structures are clearly defined in their projects.
2. The use of project management methodologies and tools is important for the project success

The answers for the question regarding the use of project management methodologies and tools for project success show that respondents from both countries share a rather similar point of view. Approximately 38% of the respondents in Mexico and 33% of those in the United Kingdom mentioned that in their projects, the use of project management methodologies is always considered as important for the project success. Also, approximately 43% of the respondents in Mexico and nearly 42% of the respondents in the United Kingdom admitted that in their projects methodologies are usually important for project success, as Figure 7.17 shows.

![Figure 7.17 Use of project management methodologies](image)

Additionally, almost 6% of the respondents in Mexico and nearly 13% of the individuals in the United Kingdom answered that they quite often recognise that the use of these methodologies and tools for project success is important for project success. Finally, approximately 13% of the respondents in Mexico and in the United Kingdom acknowledged that in their projects, the use of project management methodologies is seldom important for project success.

The almost identical distribution of the responses from the project team members in both countries suggest that there may not be cultural bias regarding the importance of project management methodologies for project success and that project teams in both countries regard the use of project management methodologies as important for project success. Moreover, that nearly a third of the respondents in both countries view this as always happening in their projects validates the importance of project management methodologies.
3. The project is driven by business facts and objectives rather than by emotions

The answers for the question linked to facts and objectives driving the project, show that the perceptions of the respondents in both countries are very similar as the pattern of the answers is the same, covering the top three categories of the scale and peaking at “usually”. Almost 25% of the respondents in Mexico and 21% of the respondents in the United Kingdom admitted that their projects are always driven by business facts rather than by emotions and a further 58% of the respondents in the United Kingdom and nearly 49% of the respondents in Mexico acknowledged that their projects are usually driven by business facts and objectives. Also, nearly 21% of the respondents in the United Kingdom and approximately 26% of those in Mexico answered that their projects are quite often driven by business facts rather than by emotions.

These responses suggest that although there appears to be a cultural component in the question (namely the perception of emotions), project team members in both countries identified this item as important for project success.

4. The project plan contains clear milestones

The answers for the question related to the project containing clear milestones show that the perceptions from the individuals of both countries are rather similar, as the pattern of their answers is the same. It covers the top four categories of the scale, peaking at “usually”. Approximately 42% of the respondents in Mexico and the United Kingdom acknowledged that in their organisations, project plans usually contain clear milestones as shown in Figure 7.18.

![Figure 7.18 The project plan contains clear milestones](image)

Moreover, nearly 26% of the respondents in Mexico and almost 17% of those in the United Kingdom admitted that in their case, the project always contains clear milestones and for nearly 31% of the individuals in Mexico and 33% of the respondents in the
United Kingdom, their projects quite often contain clear milestones. Finally, 1% of the respondents in Mexico admitted that in their case, projects seldom contain clear milestones, view shared by approximately 8% of the respondents in the United Kingdom.

The responses to this question from project teams in Mexico and the United Kingdom suggest that containing clear milestones is viewed by all team members as important for project success and that appears to be no cultural bias affecting the distribution of the responses.

5. Team understanding of project management methodologies and tools is important for the success of the project

Understanding that project management methodologies are important for project success is one question whose answers show that individuals in both countries have a similar perception. For approximately 46% of the individuals based in the United Kingdom, understanding of project management methodologies is always important for the success of the project and nearly 39% of the respondents in Mexico agreed with this statement, as shown in Figure 7.19.

![Figure 7.19 Understanding project management methodologies for project success](image)

Also, nearly 42% of the respondents in the United Kingdom and nearly 36% of those in Mexico acknowledged that in their projects, this understanding is usually important. However, approximately 13% of the respondents from the United Kingdom stated that in their projects, the understanding of project management methodologies is seldom important for project success and nearly 18% of the respondents in Mexico answered in the same vein.

The responses to this question suggest that although there is a similar view in both countries regarding the team understanding of project methodologies and tools for
project success, these are not aligned with the responses to the experience of the team members in using project management methodologies (Section 7.5.4 - 2). This suggests that the teams in Mexico and the United Kingdom regard the team understanding of project management methodologies and tools as important for project success and are experienced in using them.

6. Each team member knows exactly what are her/his responsibilities

In the case of the team members knowing exactly their responsibilities, the answers from respondents in both countries show some similarities. Approximately 4% of the respondents in the United Kingdom admitted that in their projects, team members seldom know what their responsibilities are, while nearly 18% of the respondents in Mexico and approximately 21% of those in the United Kingdom acknowledged that team members in their projects quite often exactly know what their responsibilities are. Furthermore 50% of the individuals in Mexico and 38% of the respondents in the United Kingdom usually know exactly what the responsibilities of the team members are and a further 38% of the respondents in the United Kingdom and nearly 32% of the respondents based in Mexico admitted that in their project, individuals always know exactly what are their responsibilities.

![Figure 7.20 Each team member knows his/her responsibilities](image)

Although this question is closely related to the understanding of roles and responsibilities (Section 7.5.4 - 6), there appears not to be any similarities between the responses to both questions from the team members in Mexico and the United Kingdom. This discrepancy could be related to the different understanding of how roles and responsibilities are assigned during a project. The most important point to make is that there is a degree of similarity between the responses from the United Kingdom and Mexico for this question.
7. Feasibility studies are required before the project is implemented

The importance of feasibility studies is shown by the answers to this question from respondents in both countries. Approximately 12% of the respondents in Mexico admit that feasibility studies for the projects are never required before they are implemented. Also, a further 12% of the respondents in Mexico and nearly 8% of those in the United Kingdom mentioned that in their projects, feasibility studies are seldom required before the implementation of a project.

![Figure 7.21 Feasibility studies](image)

Also, as Figure 7.21 shows, approximately 31% of the respondents in Mexico and 25% of the respondents in the United Kingdom mentioned that these studies are always required while 50% of the respondents in the United Kingdom acknowledged that these feasibility studies are usually required before the implementation of a project, view shared by nearly 31% of the respondents in Mexico.

After the previous statements, it is clear that even though in the previous sections it was agreed that the projects shared a common background, the responses of the individuals in Mexico and the United Kingdom show that their perceptions are somewhat different.

Both samples agreed that the use of project management methodologies is regarded more than frequently as important for project success. However, after using these methodologies, the individuals in Mexico also mentioned that their teams are penalised for failures or mistakes with relative frequency.

While the allocation of rewards is always directly linked to the results of the projects according to nearly half the responses from the individuals in the United Kingdom, nearly forty percent of the respondents in Mexico were opposed to this statement mentioning that in their organisations this rarely happens and instead, according to their responses, the allocation of rewards is based more in individual performances.
7.5.5 Project environment

1. External changes in the project environment are constantly monitored

According to the responses of 49% of the individuals based in Mexico, external changes in the project environment are usually monitored and approximately 67% of the people working in the United Kingdom who responded to the questionnaire agreed with this. It is important to mention that nearly 7% of the people working in Mexico and almost 8% of the individuals in the United Kingdom admitted that external changes in the project environment are rarely monitored in their organisations and for 13% of the respondents in the United Kingdom and nearly 19% of those in Mexico, external changes in the project environment are always monitored.

Although there appears to be a similarity in the responses to this question, it is important to mention that this question is related to that of prompt response to a change in the project environment (Section 7.5.3 - 3). However, in relation to this there is a strong similarity between the responses from the project team members in Mexico to both questions, but there is no correspondence for the responses of the project team members in the United Kingdom.

2. The project manager keeps a positive relationship with the senior management

In the element of the questionnaire addressing the relationship of the project manager with the senior management of the organisation, approximately 49% of the respondents in Mexico mentioned that it is always a positive relationship and nearly 46% of the respondents in the United Kingdom agreed with this statement to the same extent, as shown in Figure 7.22.

![Figure 7.22 Positive relationship of the project manager with senior management](image-url)
Furthermore, another 49% of the respondents in Mexico and 46% of the individuals in the United Kingdom acknowledged that the project manager usually has a positive relationship with the senior management.

From the responses to this question, it is possible to gather that there is some similarity between the respondents from Mexico and those from the United Kingdom. This suggests that there may not be cultural bias in the responses. However, it is important to mention that although this suggests that project team members in both Mexico and the United Kingdom regard the relationship of the project manager with senior members as important for project success, the nature of this relationship, along with what is regarded as a good relationship may be subject to cultural bias.

3. The project team has a good relationship with the suppliers

With regards to the team having a good relationship with the suppliers, almost 38% of the respondents in the United Kingdom and approximately 37% of the respondents in Mexico acknowledged that it always is a good one, while approximately 51% of the respondents in Mexico and 25% of the individuals in the United Kingdom admitted that the relationship between team and suppliers is usually a good one and a further 29% of the respondents in the United Kingdom and 12% of the respondents in Mexico mentioned that it quite often is a good relationship.

![Positive relationship of the project team with suppliers](image)

Figure 7.23 Positive relationship of the project team with suppliers

The differences in the responses to this question from the team members in the United Kingdom to those of the team members in Mexico suggests a possible cultural bias. This also suggests that there may be a difference in what the project team members in Mexico and project team members in the United Kingdom perceive as a good relationship.
4. The project manager has a good relationship with the customer

In the case of the relationship between project manager and customer, approximately 49% of the respondents in Mexico view this relationship as being always good, opposed to 25% of the respondents in the United Kingdom accept that this relationship is always a good one. Furthermore, nearly 63% of the individuals in the United Kingdom perceive that the project manager usually has a good relationship with the customer and approximately 32% of the respondents in Mexico agree with this statement. Also, nearly 8% of the respondents in the United Kingdom and approximately 19% of the respondents in Mexico admitted that the project manager quite often has a good relationship with the customer.

![Figure 7.24 Positive relationship of the project manager with customer](image)

The responses to this question from the project team members in Mexico show similarities to those of the positive relationship with the suppliers (Section 7.5.5 - 3). However, this correlation is not shown by the responses of the project team members in the United Kingdom.

5. The project manager has a good relationship with the suppliers

The relationship the project manager has with the suppliers shows that both samples relatively share the same point of view. Of the respondents in Mexico, 37% admitted that project manager always has a good relationship with the suppliers and 42% of the respondents in the United Kingdom answered in the same way. Furthermore, nearly 46% of the respondents in the United Kingdom and approximately 44% of the individuals in Mexico responded that the project manager usually has a good relationship with the suppliers. However, 6% of the individuals in Mexico and approximately 4% of the people based in the United Kingdom recognise that the relationship between the project manager and the suppliers is rarely a good one.
Although there are similarities between the responses of the project team members in Mexico and those of the project team members in the United Kingdom, there is a marked difference between these answers and those to the project team relationship with the suppliers (Section 7.5.5 - 3). This suggests there is a degree of cultural bias in the perception of the relationship of the project manager and the suppliers from the part of the project team members. It is important to note that there is the possibility of a bias in the perception of the relationships between the project teams and those outside the project. This suggests that for the team members in the United Kingdom there is a strong difference in the perception of the relationships the project team has with customers and suppliers. Also, this suggests that for project teams in the United Kingdom the perception of the relationship of the project depends on who is his/her counterparty.

6. Rapport is maintained between senior management and project teams

The link between senior managers and the project teams is a question showing similarities in the answers from respondents in both countries, if not in the percentages, in the pattern of their responses. Of the respondents in the United Kingdom, 33% indicated that rapport between senior management and project teams is always maintained, while 42% of the respondents in Mexico agreed to the same extent. Also 24% of the individuals in Mexico recognise that this seldom happens compared to nearly 12% of the respondents in the United Kingdom admitting the same statement. Also, approximately 29% of the respondents in the United Kingdom admitted that rapport is quite often present between senior managers and teams, view shared by approximately 32% of the respondents in Mexico.
Figure 7.26 Rapport is maintained between senior managers and project teams

These responses suggest that although the majority of project team members in both Mexico and the United Kingdom perceive that there is rapport between the project team and senior managers, the cultural background of the teams may also play an important part as it may determine what the project team members regard as a good relationship. Furthermore, this perception may also be influenced by the degree of closeness of the project team members and the senior managers.

7. Projects are provided with sufficient support from the management

When it comes to supporting the project by the management, the answers from the respondents in Mexico and the United Kingdom show contrasts and differences in the perceptions from the individuals in both countries. First, nearly 30% of the respondents in Mexico answered that their projects are always provided with sufficient support only approximately 4% of the individuals in the United Kingdom answered in the same vein. However, almost 54% of the respondents in the United Kingdom admitted that their projects are usually provided with sufficient support, while only 2% of the respondents in Mexico acknowledged the same statement.

Figure 7.27 Projects are provided with sufficient support

Furthermore, as shown in Figure 7.27, approximately 61% of the individuals in Mexico and 33% of the respondents in the United Kingdom indicated that their projects are quite often provided with sufficient support from the management. Almost 8% of the
respondents in the United Kingdom admitted that their projects are seldom provided with sufficient support and approximately 7% of the respondents in Mexico admitted that their projects are never provided with sufficient support from the management.

These responses suggest that the cultural background of the respondents may determine what they regard as sufficient support. Moreover, this perception could also be influenced by the relationship of the project team members and the senior management, as well as their perception of the organisational support towards projects. All these elements combined together could explain why project team members in Mexico and those in the United Kingdom disagree to the level shown by their responses.

7.6 Conclusion

The description of the data gathered using the tools illustrated in Chapter 6 highlights the complexity and specificity of the organisational settings that are being examined. After the analysis of the data gathered, it can be said that this particular research has achieved its primary objective, “to determine and assess the factors of Mexican culture impacting projects carried out by multi-national companies working along with governmental entities in Mexico.”

The empirical evidence shows that although there are significant differences in the perception of the elements of project management culture (the processes, people, structures, systems and environment) by individuals in Mexico and the United Kingdom, there are similarities addressing common practices and widespread elements which allow people to carry out projects with the understanding of the feasibility of their successful conclusion. Even though the empirical evidence shows that cultural and organisational settings differ, these aforementioned common practices (such as providing the project with managerial support, using project management methodologies, etc.) provide a clear link between project management cultures present in different countries. Furthermore, the empirical data show that there are differences in the perception of individuals in Mexico and the United Kingdom regarding each one of the five elements of project management culture (e.g. people in projects, project structures) although these differences vary in intensity from one element to the other. These differences and similarities in cultural perceptions in projects are aligned with the arguments presented by Hofstede (1997; 1998), Trompenaars & Hampden-Turner (1997), House (2004) and Javidan et al. (2006a; 2006b), regarding the cultural settings
of different nations. These authors argue that people from different cultures would react similarly when presented with common problems and that when those problems (such as changes in the environment, lack of support or even conflict within teams) arise, there are logical paths to follow, such as dealing with the problems, rather than sit and wait for the problems to solve themselves. However, they also argue that these common problems are solved in a similar way because past experiences are embedded into the people working in the project. Also, it is important to note that despite the cultural differences and approaches to project management between Mexico and the United Kingdom there is a significant number of points where the respondents in both countries agreed in their answers, thus supporting the findings from the research of the above-mentioned authors.

Finding these common points and determining what the main differences are between the perception of the elements composing a project management culture in Mexico and the United Kingdom is a starting point for a more in-depth analysis leading to the establishment of the project success factors determined by the empirical data and their validation by using triangulation methods (described in Chapter 6) and presented in the following Chapter.
Chapter 8 Analysis

8.1 Introduction

The use of statistical data analysis in the previous section set the basis for the establishment of the main differences in the perception of the elements composing a project management culture by the actors in Mexico and the United Kingdom. The description of the differences and similarities present in the data point to the development of clusters of information where respondents from both countries agree to the same extent or where there is disagreement between them. However, after the information was described, in order to validate the findings from the first analysis, the use of triangulation methods was required. The reason for the use of these triangulation methods is the problem of cognitive satisficing (Krosnick, 1999) as respondents who are faced with previous answers are enticed to state that there is no change (Hoogendoorn, 2004), therefore, the information obtained after the first analysis has to be validated against a different set of actors because even though the first analysis provides the starting point for achieving the aim of this research it is not enough as it might lead to underreporting as Krosnick (1991; 1999) points out. It is important to mention that even though Chapter 7 presents a thorough statistical analysis of the data gathered from the main questionnaire, there are other statistical tools which can be used to analyse the results and which are specially designed to address the comparison between two samples.

This Chapter provides and analyses data which can be used to meet the primary research objective previously described in Chapter 6: “To identify the extent to which the cultural factor could prove to be a competitive advantage for a multi-national organisation working along with any Mexican Governmental entity.” Furthermore, the analysis presented in this Chapter will support the results from Chapter 7 in order to successfully meet the other two objectives described in Chapter 6, namely “To identify the nature of the best practices when managing multi-cultural teams/projects” and “to examine the role of Mexican culture as a key factor when managing projects”.

In section 8.2, this Chapter describes the characteristics of the Spearman’s rank correlation coefficient, the algorithm to calculate it and the significance of its values. Later on, in section 8.3, this Chapter presents the process followed to elicit the data and the elements of the main questionnaire, as well as the indicators of its validity and the
biographical statistics of the respondents of the questionnaire grouped by country and sector. Section 8.4 presents a description of the data analysed after the application of the Spearman’s rank correlation test to the data gathered with the main questionnaire, subdivided on each one of the five elements composing the questionnaire, compared according to the country of residence of the respondents and grouped by each one of the two sectors focus of this research, namely the oil and power generation sectors. Section 8.5 presents the success factors impacting a project both positively and negatively, derived from the information gathered from the questionnaire and grouped by the indicator of success of the project. The information gathered after the application of interviews with senior project managers in Mexico and the United Kingdom to validate the findings of the previous analysis is presented in section 8.6, therefore leading to section 8.7 where the summary of the success factors in projects derived from the analysis of the information gathered in this study is presented.

8.2 Spearman's rank correlation coefficient

Charles Spearman developed a rank correlation coefficient known in statistics as Spearman's rank correlation coefficient and it is denoted by the Greek letter \( \rho \) (rho) (Bock & Petersen, 1975). It represents a non-parametric measure of correlation which assesses how well an arbitrary monotonic function could describe the relationship between two variables, without making any suppositions about the frequency distribution of the variables and it does not require the assumption that the relationship between the variables is linear, unlike the Pearson product-moment correlation coefficient and it does not require the variables to be measured on interval scales (Coleby & Duffy, 2002). The Spearman’s rank correlation coefficient can be used for variables measured at the ordinal level (Dendukuri & Reinhold, 2005).

As Kruskal (1958) explains, in principle, \( \rho \) is simply a special case of the Pearson product-moment coefficient in which the data are converted to rankings before calculating the coefficient. However, in practice, it is a simple procedure that is normally used to calculate \( \rho \). The raw scores are converted to ranks and the differences “d” between the ranks of each observation on the two variables are calculated.

If there are no tied ranks, i.e. \( \neg \exists_{i,j} i \neq j \wedge (x_i = x_j \vee y_i = y_j) \) then \( \rho \) is given by:
\[ \rho = 1 - \frac{6 \Sigma d_i^2}{n(n^2 - 1)} \]

where:

d_i = the difference between each rank of corresponding values of x and y, and

n = the number of pairs of values.

The Spearman rank correlation measures the association of the ranks of the two variables. The point at which the largest value of the data set occurs would be given a rank of 1, the next largest point would be given a rank of 2 and so on and the difference between the ranks for the two data sets are then calculated and placed into the equation (Smith, 1985; Newson, 2001).

Both correlation coefficients will lie in the range -1 to +1. The sign indicates the direction of the association, e.g. a negative sign implies that, rather than both signals increasing linearly, one will decrease as the other increases. A value of 1 indicates a perfect linear relationship; a value of 0 indicates no linear relationship.

### 8.2.1 Determining significance

The modern approach to testing whether an observed value of \( \rho \) is significantly different from zero (we will always have \( 1 \geq \rho \geq -1 \)) is to calculate the probability that it would be greater than or equal to the observed \( \rho \), given the null hypothesis, by using a permutation test. In the majority of the occasions, this approach is superior to traditional methods, unless the data set is so large that computing power is not sufficient to generate permutations or unless an algorithm for creating permutations that are logical under the null hypothesis is difficult to devise for the particular case (Smith, 1985; Xenikou & Furnham, 1996; Coleby & Duffy, 2002).

Although the permutation test is usually trivial to perform, traditional methods for determining significance are still widely used (Newell et al., 2004). The most basic approach is to compare the observed \( \rho \) with published tables for various levels of significance. This is a simple solution if the significance only needs to be known within a certain range or less than a certain value, as long as tables are available that specify the desired ranges. However, generating these tables requires intensive calculations and
complicated mathematical tricks have been used over the years to generate tables for larger and larger sample sizes (Genero et al., 2007).

A generalisation of the Spearman coefficient is useful in the situation where there are three or more conditions, a number of subjects are all observed in each of them and we predict that the observations will have a particular order (Smith, 1985; Dendukuri & Reinhold, 2005). For example, a number of subjects might each be given three trials at the same task, and we predict that performance will improve from trial to trial and a test of the significance of the trend between conditions in this situation was developed by E. B. Page and is usually referred to as Page's trend test for ordered alternatives (Newell et al., 2004).

8.2.2 Calculation

In order to establish and understand the process for calculating the Spearman’s correlation coefficient for all the elements of the questionnaire, two examples are presented, one showing a correlation with a coefficient of 1 (a strong positive correlation) and another with a coefficient of 0.0 (a coefficient showing no correlation whatsoever). In the case of this survey, the number of pairs of values (n) is 5.

1. Projects use rewards and recognition to increase motivation:

The number of responses from the oil and power generation sectors in Mexico is shown below in Table 8.1:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Never</td>
<td>1</td>
</tr>
<tr>
<td>Seldom</td>
<td>61</td>
</tr>
<tr>
<td>Quite often</td>
<td>43</td>
</tr>
<tr>
<td>Usually</td>
<td>22</td>
</tr>
<tr>
<td>Always</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 8.1 Number of respondents - Projects use rewards and recognition to increase motivation, oil and power generation - Mexico

The next step is to establish the rank of the responses, as shown in Table 8.2:
Once the ranks for each one of the two sectors to be compared are found, the next step is to find the value of “d”, of the difference between the ranks:

<table>
<thead>
<tr>
<th>Oil</th>
<th>Power Generation</th>
<th>Difference “d”</th>
<th>d^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Never</td>
<td>1. Never</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Always</td>
<td>2. Always</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Usually</td>
<td>3. Usually</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Quite often</td>
<td>4. Quite often</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. Seldom</td>
<td>5. Seldom</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 8.3 Difference between ranks

Applying the Spearman’s rank correlation formula shown in 8.2, with the values for 6Σd^2=0 and n=5:

\[ \rho = 1 - \frac{6\Sigma(0)}{5(5^2 - 1)} \rightarrow 1 - \frac{0}{120} \rightarrow \rho = 1 \]

The value of \( \rho = 1 \) shows that there is a strong correlation between the ranks of the two sectors.

2. The project is provided with sufficient resources from the management:

The number of responses from the power generation sectors in Mexico and the United Kingdom is shown below in Table 8.4:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mexico</td>
</tr>
<tr>
<td>Never</td>
<td>8</td>
</tr>
<tr>
<td>Seldom</td>
<td>32</td>
</tr>
<tr>
<td>Quite often</td>
<td>4</td>
</tr>
<tr>
<td>Usually</td>
<td>29</td>
</tr>
<tr>
<td>Always</td>
<td>34</td>
</tr>
</tbody>
</table>

Table 8.4 Number of respondents - The project is provided with sufficient resources from the management, Mexico and United Kingdom – Power generation
The next step is to establish the rank of the responses, as shown in Table 8.5:

<table>
<thead>
<tr>
<th>Oil</th>
<th>Power Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Always</td>
<td>1. Quite often</td>
</tr>
<tr>
<td>2. Seldom</td>
<td>2. Seldom</td>
</tr>
<tr>
<td>3. Usually</td>
<td>3. Always</td>
</tr>
<tr>
<td>4. Never</td>
<td>4. Usually</td>
</tr>
<tr>
<td>5. Quite often</td>
<td>5. Never</td>
</tr>
</tbody>
</table>

Table 8.5 Ranks

Once the ranks for each one of the two sectors to be compared are found, the next step is to find the value of “d”, of the difference between the ranks:

<table>
<thead>
<tr>
<th>Mexico</th>
<th>UK</th>
<th>Difference “d”</th>
<th>d²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Always</td>
<td>1. Quite often</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>2. Seldom</td>
<td>2. Always</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>3. Usually</td>
<td>3. Seldom</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>4. Never</td>
<td>4. Usually</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>5. Quite often</td>
<td>5. Never</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 8.6 Difference between ranks

Applying the Spearman’s rank correlation formula, with the values for $6\Sigma d^2=20$ and $n=5$:

$$
\rho = 1 - \frac{6\Sigma d^2}{5(n^2 - 1)} \quad \rightarrow \quad 1 - \frac{120}{120} = 1 \rightarrow \quad \rho = 0
$$

The value of $\rho = 0$ shows that there is no correlation between the ranks of the two sectors.

### 8.3 Analysis

Following the procedure described in Chapter 6, the analysis of the data gathered during the application of the main questionnaire is the next step to follow. This analysis presents data divided into five initial sections, each one directly linked to a specific sub-division of the main questionnaire which in turn are linked to each one of the five elements described in Chapter 5 as composing a project management culture. In order to analyse the data, a comparative approach was used, dividing the data in two separate
clusters, using the “Country of Residence” variable as aggregating factor and then splitting the remaining datasets by sector (oil and power generation).

In order to maximise the impact of the cross analysis, comparisons of the answers to the five sections of the questionnaire were made as follows: first, a comparison between the responses provided by employees of the Mexican oil and power generation industries. Second, a comparison was made between the responses provided by employees of the oil and power generation industries in the United Kingdom. In third place, the responses provided by employees in the Mexican power generation sector were compared to those of the power generation sector in the United Kingdom. Finally, the responses of the employees of the oil sector in Mexico and the United Kingdom were compared. The comparisons presented below were made following the Spearman’s rank correlation coefficient described in section 8.2. Also, the elements of the questionnaire linked to key findings are explained by diagrams as examples of the issues that have been found during this study.

8.3.1 Processes in the project

Applying the Spearman’s rank correlation coefficient to the responses provided by employees working in the Mexican oil and power generation industries for the questions related to the processes in the project section of the main questionnaire (Appendix F) shows that the employees in these two sectors view their organisations in a rather similar way (see Appendix J). Of the twenty-six questions, respondents from the Mexican oil and power generation sectors present minor differences in six questions regarding their perception of the way their organisations deal with the processes associated with the project. The questions where the respondents show these minor differences are related to how quickly the decisions are made, the project lifecycle, keeping the project within budget, meeting deadlines and keeping bureaucracy to minimum levels. The Spearman coefficient for the remaining twenty questions shows that the ranks of the responses provided by employees from both sectors present no differences. This shows that the perceptions of employees working in the oil and power generation sectors in Mexico regarding the processes surrounding a project are rather similar and that when there are divergences, they are minor.

When comparing the answers from respondents working in the oil and power generation sectors in the United Kingdom, the Spearman’s rank correlation coefficient shows more
diverging results. Of the twenty-six questions, the ranks are the same only in three questions, related to meeting the expectations of the customers, focusing the project on results and the definition of clear control measures. In these three cases, the majority of respondents from both sectors in the United Kingdom agreed that it is something that happens quite often. Figure 8.1 shows these ranks.

![Figure 8.1 Equal ranks in the United Kingdom](image)

Although the ranks are similar up to a certain level, it is clearly visible that employees working for both sectors in the United Kingdom have different perceptions of the way their organisations handle the processes composing a project. The answers provided by the respondents for three specific questions show that the perception of the way their organisations handle these elements of the questionnaire is dissimilar. These questions are the use of recognition to increase motivation, the definition of the expectations of the external stakeholders and the availability of project information to all team members. In the first case, the rank of the answers provided by respondents from the oil sector in the United Kingdom shows that the majority agree that rewards and recognition are quite often used as motivation whereas the rank of the answers from respondents in the power generation sector shows that the majority of them agreed that this seldom happens. In the second case, the rank of the responses from the employees of the oil sector shows that the majority of the respondents agreed that the expectations of the external stakeholders are always or usually clearly defined, whereas the majority of the answers from respondents in the power generation sector in the United Kingdom
fell into “seldom” and “quite often”. In the last case, the ranks of the answers from respondents in the oil sector in the United Kingdom fell into “seldom” and “always”, regarding the openness of the information to all team members while the rank for the responses provided by employees in the power generation sector shows that the vast majority (83%) agreed that this happens always or quite often. After reviewing the Spearman’s correlation coefficients for the ranks of the answers provided by employees working in the oil and power generation sectors in the United Kingdom, it is evident that the perceptions of the respondents from both sectors present clear differences. Even though in more than half the ranks of the answers the differences are null or minor, the variation when compared against the nearly total match in the oil and power generation sector in Mexico is more than evident.

The coefficient resulting from applying the Spearman’s rank correlation to the ranks of the answers provided by the respondents working for the oil sector in Mexico and the United Kingdom shows that the employees of this sector perceive their organisations in a very different way. Of the twenty-six questions, the rank of the answers provided by the respondents is the same for only one question, regarding the phases of the project following the project lifecycle. On the other hand, six questions present rather different ranks. These questions relate to the use of rewards and recognition to increase motivation, the clear definition of the expectations of the external stakeholders, keeping meetings and bureaucracy down to minimum levels, not exceeding budgets, the understanding of the tasks of each one of the team members and the provision of feedback on activities.

In the case of the comparison between power generation organisations in Mexico and the United Kingdom, the results of the Spearman’s rank coefficient show that the answers provided by the respondents in both countries are similar to those provided by employees working for the oil sector in Mexico and the United Kingdom. The rank of the question regarding the systematic monitoring of the progress of the project is the only one where the respondents in Mexico and the United Kingdom answered in the same way. The rank of six out of the twenty-six questions presents differences in the perceptions from the employees in Mexico against those in the United Kingdom. These six questions are related to clear visualisation of the project processes during the design phase, meeting the deadlines, the clear description of project processes and activities,
keeping bureaucracy down to minimum levels, the documentation of past experiences and the understanding by each member of the team of their role.

From the previous statements it is evident that the ranks of the answers to the questions regarding the processes in the project are similar for the oil and power generation sectors in Mexico. When it comes to the comparison between these two sectors in the United Kingdom the ranks present more differences than similarities and these differences are accentuated when the comparison is translated to the oil organisations in Mexico and the United Kingdom and the power generation companies in Mexico and the United Kingdom.

8.3.2 People in projects

When applying the Spearman’s rank correlation test to the ranks of the answers provided by the respondents in the oil and power generation sectors in Mexico (Appendix J) it is evident that the ranks present the same tendency as in the previous section (Processes in the project). Out of the twenty-three questions, only in six cases the ranks have a marginal difference. These questions are related to the recognition of and dealing with conflicts, the degree of trust between senior managers and team members, the ethical conduction of business, team members looking out for the interests of each other, the constructive solution of problems and the cultural background of the team members.

In the case of the comparison of the ranks of the responses provided by the respondents working in the oil and power generation industries in the United Kingdom, the differences are more accentuated, possibly due to the people factor and the different perception from people from different countries. The ranks are the same in only four out of the twenty-three questions. In the first one, related to the ethical conduct of business, the ranks show that the majority of the respondents perceive that business is conducted in an ethical manner usually or always. In the case of team members looking out for the interests of each other, again the ranks show that the perception of the majority of the respondents is that this happens usually or always. For the case of the knowledge of the project manager in both theory and practice of project management and the experience of the team members as helping to achieve results, both the ranks for the respondents from the oil and power generation industries show that the majority of the respondents perceive that it happens always or quite often. Figure 8.2 shows these ranks.
The ranks of eight out of twenty three questions present major differences in the perceptions of the respondents. These questions regard issues such as recognising and dealing with conflict amongst team members where the ranks show that the majority of respondents from the oil sector perceive that these conflicts are dealt with quite often and the respondents from the power generation sector perceive that this always happens. Regarding the sense of belonging within the team, respondents from the oil sector perceive it as happening usually whereas the rank of the responses provided by respondents working in the power generation sector shows that they perceive it as seldom happening. In the case of the degree of trust between senior managers and team members the responses vary from the majority of the respondents acknowledging that this happens always and usually (for the case of the oil sector) to quite often and always (in the case of the respondents from the power generation sector). For the questions regarding the management of power struggles and internal politics and the one regarding the tolerance for conflict, the ranks show that the majority of the respondents in the oil sector perceive this as happening usually as opposed to the majority of the respondents from the power generation sector who ranked it as never happening. The ranks of the answers for the question regarding the style of management of the project manager changing according to the different phases of the project shows a minor difference between the two sectors, as the majority of the respondents from the oil sector ranked it happening “usually” first and “always” second whereas the respondents from the power generation sector ranked “quite often” first and “usually” second. For
the ranks of the answers of the question related to the relationship of the project manager with the members of the team, the answers from respondents from the oil sector ranked “usually” first and “always” second, slightly different to the ranks of the power generation sector which are “always” first and “quite often” second. Finally, the ranks for the answers to the question related to the open acceptance of criticism by team members show a stronger difference. For the case of the respondents from the oil sector, the rank shows “quite often” as first and “usually” as second and in the case of the respondents from the power generation sector, “seldom” was ranked first and “quite often” second.

The case of the comparison of the ranks of the responses provided by employees working for the oil sector in Mexico and the United Kingdom also shows that the perceptions of the respondents are different. First, the rank correlation is similar only in two questions out of twenty-three, the questions being related to the constructive management of conflict between team members and the project manager focused on having a competent team. Figure 8.3 show the ranks for these two questions.

In the first case, the answers from respondents in Mexico and the United Kingdom ranked “usually” first with 56% and 50% respectively, “always” second with 19% and 25%, “quite often” third with 18% and 17% and finally, “seldom” fourth with 6% and 8% respectively. As shown in Figure 8.3, the majority of the respondents in both countries acknowledged that conflicts are usually managed in a constructive way and in both cases, a minority perceived that conflicts are seldom managed in a constructive way.
In the second case, regarding the team leader focusing on having a competent team, the rank shows that the answers followed the scale, ranking “always” as first, “quite often” as second, “usually” as third and “seldom” fourth. None of the answers from individuals in either country fell into “never”. In the case of the respondents in Mexico, nearly 70% of their answers fell within “quite often” and “always”, and this figure goes up to 84% for the answers from individuals in the United Kingdom.

Second, in eight out of twenty three questions, the Spearman’s rank correlation coefficient shows that the respondents have totally different perceptions. The questions where these differences are present relate to the relationship between team members, where the answers from respondents from Mexico ranked “quite often” first and
“usually” second, as opposed to “always” first and “usually” second by respondents from the United Kingdom; in the case of the sense of belonging in the team, the answers from respondents from Mexico ranked as “usually” first and “quite often” second and the answers from respondents from the United Kingdom ranked “usually” first and “always” second; the degree of trust between senior managers and team members shows stronger differences as the answers from respondents from Mexico ranked “seldom” first and “always” second opposed to “usually” first and “always” second in the answers provided by respondents from the United Kingdom; dealing with power struggles and politics was ranked as “usually” first and “seldom” second in the responses provided by employees working in Mexico and “usually” first and “never” second in the responses by employees in the United Kingdom; the tolerance for conflict within the team shows that the rank for the answers from respondents from Mexico presents “quite often” as first and “usually” as second, whereas “usually” is first and “never” is second in the rank of the responses from employees in the United Kingdom; the ranks for the responses to the question related to team members looking out for the interests of each other show that in the case of respondents from Mexico, “quite often” was regarded as first and “seldom” as second and in the case of the United Kingdom, “always” was first tied with “usually”; the style of the project manager adapting to the different phases of the project was ranked as happening “quite often” first and “always” second in the responses by employees in Mexico and “usually” first and “always” second in the responses by individuals in the United Kingdom; finally, the question regarding the relationship of the project manager with the team members shows that the rank for the responses from individuals in Mexico scored “always” first and “quite often” second and the answers from individuals in the United Kingdom ranked “usually” first and “always” and “quite often” tied in second place.

The comparison of the ranks of the responses of the employees working for the power generation sector in Mexico and the United Kingdom also presents several differences. The only question where the correlation coefficient shows a match is linked to the experience of the project manager helping the team to achieve the objectives. In this case the answers from respondents from both countries ranked as “always” first, “quite often” second and “usually” third. None of the respondents in either country mentioned “seldom” or “never” in their answers, which indicates that in this case, all the respondents from both countries regard the experience of the project manager as helping
to achieve results. Figure 8.5 shows the ranks for the answers to this question in both countries.

![Bar chart showing the percentage of responses for the experience of the project manager helps to achieve results in Mexico and the United Kingdom.]

Figure 8.5 Project manager experience

On the other hand, seven out of twenty three questions show a strong difference in their ranks. One of the questions where the differences were more accentuated is related to the sense of belonging of the team members. In this case, the responses from individuals in Mexico ranked “usually” first and “quite often” second whereas the responses from employees working in the United Kingdom ranked “seldom” and “quite often” first and “usually” and “always” second.

For the responses related to the question of dealing with power struggles and politics before the project is implemented, the rank in the case of the answers from respondents in Mexico presents “quite often” as first, “seldom” as second and “always” as third and, in the case of the rank of the answers from individuals in the United Kingdom, the rank shows “never” as first, “always” as second and “quite often”, “usually” and “seldom” on third.

Regarding the tolerance for conflict amongst team members, the answers from respondents in Mexico ranked “quite often” as first and “usually” as second, as opposed to “never” being first and “quite often” second in the case of the responses from respondents in the United Kingdom. Figure 8.6 shows these ranks.
There is a high tolerance for conflict amongst the team members

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Usually</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico Power Gen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK Power Gen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8.6 Tolerance for conflicts

Regarding the encouragement of calculated risk taking, even though the ranks show differences, the outcome could be classified as the same. In the case of the answers from respondents in Mexico, “seldom” was ranked as first followed by “always” in second and in the case of the responses from individuals in the United Kingdom, “usually” was ranked first and “seldom” second as shown in Figure 8.7.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Usually</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico Power Gen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK Power Gen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8.7 Risk taking

The ranks for the answers to the question related to team members looking out for the interests of each other show that respondents in Mexico ranked “quite often” as first and “usually” as second whereas the respondents in the United Kingdom ranked “always” and “usually” as first and “quite often” as second. In respect to the rank of the answers to the question related to the open acceptance of criticism, in the case of respondents
from Mexico “usually” was ranked first and “quite often” second and employees in the United Kingdom ranked “seldom” first and “quite often” second, thus allowing to gather that employees in Mexico are more open to accept criticism. Finally, in the question regarding the cultural background of the team members the ranks for the answers show a rather different perception. In the case of respondents from Mexico, they ranked “quite often” as first and “seldom” as second and respondents from the United Kingdom ranked “quite often” first and “always” as second.

### 8.3.3 Project structures

The section of the questionnaire related to the project structures was composed of sixteen questions as shown in Appendix J. After performing the Spearman’s rank correlation test to the ranks of the answers provided by the employees working in the oil and power generation sectors in Mexico it is possible to see that the perceptions of the respondents are rather similar.

The ranks are the same in nine out of the sixteen questions and in six out of the remaining seven the ranks show only minor disagreements. The question presenting the ranks with the most significant difference is related to teams receiving support from other teams when necessary where the answers from respondents from the oil sector ranked “quite often” as first, “usually” as a close second and “always” as third, whereas the answers from respondents in the power generation sector ranked “usually” as first, “quite often” as second and “always” as third, as shown in Figure 8.8. From these ranks it is possible to gather that even though this question was the one with the more significant difference, the perceptions of the individuals working in the oil and power generation sectors in Mexico are relatively similar in regard to the structures in a project.
In the case of the oil and power generation sectors in the United Kingdom, the Spearman’s rank correlation coefficient shows that respondents from both sectors agree in only one question which is linked to the encouragement of networking in the organisation where the answers from respondents in the oil and power generation sectors in the United Kingdom ranked “quite often” as first, “always” as second and “usually” as third, as shown in Figure 8.9.

Although this is the only question where the ranks are equal, only two out of the sixteen questions present ranks with significant differences. These questions are linked to the interference of the management in the decision-making process and teams receiving support from other teams when necessary. For the question regarding the interference of
the management in the decision-making process, the answers from respondents in the oil sector in the United Kingdom ranked “quite often” as first, “seldom” as second and “always” and “usually” as third whereas the responses from individuals in the power generation sector ranked “always” as first, “usually” as second and “quite often” as third. Regarding the teams receiving support from other teams when necessary, the rank of the responses from individuals in the oil sector acknowledged “quite often” as first, “always” and “seldom” tied in second and “usually” as third and in the case of respondents from the power generation sector it shows that their answers ranked “usually” and “always” as first and “quite often” and “seldom” as second. In the remaining thirteen questions, the difference between the ranks of the answers provided by the respondents from both sectors is not as significant as for the questions mentioned above.

Regarding the ranks of the answers provided by respondents from the oil sector in Mexico and the United Kingdom, it is important to mention that none of the ranks of the responses provided by the respondents are identical and four out of the sixteen present significant differences. The questions where the Spearman’s rank correlation coefficient shows the most significant differences between the answers provided by respondents in the oil sector in Mexico and the United Kingdom are related to the capability of teams to respond immediately to changes in the project environment, where the answers from respondents in Mexico ranked “quite often” as first, “usually” as second and “always” as third as opposed to the answers from individuals in the United Kingdom which ranked “always” first, “seldom” second and “usually” third. For the authority of the team to take decisions the rank for the answers from respondents in Mexico rated “usually” as first and “seldom” as second and in the case of the individuals in the United Kingdom it was “seldom” first, “quite often” second and “always” third along with “usually”. Regarding the ability of the team to solve problems, respondents in the United Kingdom ranked “always” as first and “quite often” as second and respondents in Mexico rated “usually” first, “quite often” second and “always” third. In respect to the support teams have from the organisational structures, the ranks from both countries show that the perception from people in both countries has opposite views. In the case of the individuals from the United Kingdom, they ranked “quite often” as first with a nearly 65% of their responses falling in this category, “always” as second with 25% of the responses in this category and the remaining answers were classified as “usually”, which was ranked third. On the other hand, the respondents in Mexico ranked “seldom”
as first, with 32% of the responses falling into this category, closely followed by “quite often” with 31%, “usually” as third with 24% and “always” as fourth with 12%.

Finally, in the case of the power generation sector in Mexico and the United Kingdom, the Spearman’s rank correlation coefficient shows that in the case of one specific question the rank of the answers is the same for both countries. This question relates to organisational goals superseding personal agendas and in this case, the answers provided by respondents from both countries ranked “quite often” and “usually” as first, “always” as second and “seldom” as third, as shown in Figure 8.10.

![Organisational goals supersede personal agendas](image)

Figure 8.10 Organisational goals

Six out of the remaining fifteen questions show Spearman coefficients indicating differences in the ranks of the responses provided by the respondents from the two countries. The first question relates to the capability of teams to respond immediately to changes in the project environment. The rank of the answers for this question shows that the majority of the respondents in Mexico answered that this happens quite often, ranking it first, “usually” as second, “seldom” as third and “always” as fourth, compared to “always” first, “usually” second and “quite often” third in the rank of the responses from individuals in the United Kingdom. The second question, the authority of the team to take decisions, shows that again the differences are present however, they are not that strong, because the answers from respondents in Mexico ranked “usually” as first, “seldom” second, “quite often” as third and finally “always” fourth and in the case of the answers from respondents in the United Kingdom the rank shows that “quite often” and “seldom” are first and “always” and “usually” second. In the case of the third
question, related to the means used to achieve project results, also shows that there is a
difference in the perception individuals in both countries have. In the case of
respondents in Mexico, their answers ranked “usually” as first, “seldom” as second and
“quite often” as third. However, the answers from the respondents in the United
Kingdom ranked “quite often” first, “seldom” second, “always” third and “usually”
fourth, as shown in Figure 8.11.

![Bar graph showing the distribution of responses for power generation in Mexico and the United Kingdom.]

Figure 8.11 Result achievement

With regard to the question linked to the encouragement of networking, the ranks for
the answers to this question show the differences. In the case of the respondents from
Mexico, their answers ranked “usually” as first, “quite often” second, “seldom” third
and “always” fourth. In the case of the responses from individuals in the United
Kingdom, their answers ranked “quite often” first, “always” second and “usually” third.
The fifth question, the support of project teams in the organisational structure, shows
that the answers from respondents in the United Kingdom ranked “always” as first with
50%, “quite often” as second with 42% and “usually” third, with the remaining 8%. On
the other hand, the answers from respondents in Mexico ranked “quite often” first with
33%, “seldom” second with 30%, “usually” third with 23% and with 14%, “always” in
fourth. Finally, for the sixth question, related to the interference of the management in
the decision-making process, the answers from respondents in Mexico ranked “quite
often” as first, “always” second and “seldom” third, whereas the answers from
respondents in the United Kingdom ranked “always” as first, “usually” as second and
“quite often” as third.
8.3.4 Project systems

The fourth section of the questionnaire is related to the systems surrounding a project and it was composed by fifteen questions as shown in Appendix J. The Spearman’s rank correlation test provides a series of coefficients which suggest a level of similitude between the oil and power generation sectors in Mexico. Ten out of the fifteen questions yield Spearman coefficients indicating that the ranks of the responses provided by the respondents in both sectors are the same. Four out of the remaining five questions yielded Spearman coefficients showing minor differences and only one question, related to the creation of feasibility studies before the implementation of the project, shows that the respondents from both sectors have a slightly different perception. In this case, the answers from respondents in the oil sector in Mexico ranked “quite often” as first, “always” as second, “seldom” third, “usually” fourth and “never” as fifth whereas the responses from individuals working in the power generations sector ranked “always” first, “quite often” as second, “usually” third, “never” fourth and “seldom” fifth, as it shown in Figure 8.12.

![Feasibility studies are required before the project is implemented](image)

**Figure 8.12 Feasibility studies**

For the oil and power generation sectors in the United Kingdom only two out of the fifteen questions present Spearman coefficients indicating that the ranks of the responses are the same. The first one, linked to team working being important for project success, shows that the responses from employees in the oil sector and in the power generation sector ranked “quite often” as first, “always” second, “usually” as third and “never” as fourth as shown in Figure 8.13 below. It is important to remark that in both cases, fifty percent of the respondents answered that they perceive that the work
breakdown structures are quite often used as selection criteria for the team members and another thirty-three percent answered that this always happens. The importance of this resides in the fact that the majority respondents are aware that at any time in the project they have to take on other tasks that were not originally theirs and these tasks are used as a selection tool for further projects.

![Figure 8.13 Team work](image)

The second question, regarding team results influencing the allocation of rewards, shows that the answers from respondents in both sectors in the United Kingdom ranked “always” as first, “usually” as second and “quite often” as third as shown in Figure 8.14 below. In this case, nearly sixty percent of the respondents from the power generation sector acknowledge that the results of the team directly influence the allocation or rewards, therefore adding an extra incentive to the team to achieve project success.
In contrast, two out of the fifteen questions yielded Spearman coefficients indicating differences between the ranks of the responses provided. In the case of the question related to the work breakdown structures being a selection criterion for team members, the rank of the answers from individuals in the oil sector in the United Kingdom shows that “usually” was ranked as first, “quite often” as second, and “always” as third. It is important to remark that 75% of the responses fell within “usually” and “quite often”. In the case of the answers from respondents in the power generation sector, the rank shows “quite often” as first, “always” and “seldom” as second and “usually” and “never” as third, with one third of the responses falling within “quite often”.

The second of the questions showing differences relates to the allocation of rewards being based on individual performances. In this case, the responses from individuals in the oil sector in the United Kingdom ranked “usually” as first with 67% of the responses falling into this category and the remaining 33% in “always” and “quite often” ranking them tied in second. In the case of the answers from individuals in the power generation sector, “quite often” was ranked first with 42% of the answers falling into this category, “always” as second with 33%, “seldom” as third with 17% and “usually” fourth with 8%. These numbers show that the perception of respondents in the oil sector in the United Kingdom is that individual performances usually influence the allocation of rewards and that in overall, individual performances are an important factor in the allocation of rewards.
When comparing the oil sector in Mexico and the United Kingdom the Spearman coefficient shows that two questions yielded coefficients indicating identical ranks. The first question is related to the project being driven by business facts rather than emotions. For this question, the rank from respondents in Mexico and the United Kingdom shows that “quite often” was ranked first, “always” second and “usually” third as shown in Figure 8.15 below. It is possible to see from Figure 8.15 that nearly 50% of the respondents in Mexico perceive that projects are quite often driven by business factors and objectives rather than by emotions and this number rises up to nearly 60% in the case of the respondents in the United Kingdom. More importantly, nearly a quarter of the respondents in both countries acknowledged that this always happens.

![Chart showing project driver comparison](chart.png)

**Figure 8.15 Project drivers**

In this case, the combined percentage of respondents within the first and second answers indicates that the vast majority of the respondents perceive that the success of the project is directly linked to the understanding of project management methodologies and tools and this number rises to 83% in the responses from individuals in the United Kingdom.

Three out of the fifteen questions yielded Spearman coefficients showing more accented differences. For the case of the question related to the work breakdown structures being selection criteria for team members, Figure 8.16 shows that in the case of respondents in Mexico, their answers ranked “seldom” as first, “usually” as second, “quite often” as third and “always” as fourth, whereas the answers from individuals in the United Kingdom ranked “usually” as first, “quite often” as second, “always” as third, “seldom”
as fourth and “never” as fifth, following the original order of the scale used for the questionnaire.

Figure 8.16 Work breakdown structure as selection criteria

<table>
<thead>
<tr>
<th></th>
<th>Mexico</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>Seldom</td>
<td>35%</td>
<td>30%</td>
</tr>
<tr>
<td>Quite often</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Usually</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Always</td>
<td>15%</td>
<td>10%</td>
</tr>
</tbody>
</table>

For the question related to the result of the project influencing the evaluation of individual performances, the answers from employees in the oil sector in Mexico ranked “seldom” as first, “quite often” as second, “usually” as third and “always” as fourth with 36%, 26%, 25% and 13% respectively and for the answers from individuals in the United Kingdom, “always” ranked first, with 42%, “usually” second with 33%, “seldom” third with 17% and “quite often” fourth with 8%. This shows that in this case, the most common perception from individuals in Mexico is that the evaluation of individual performances is seldom based on the results of the project, contrasting with the perception of individuals in the United Kingdom who acknowledged that this usually happens.

For the question regarding the allocation of rewards being based on individual performances, Figure 8.17 below shows that in the case of the answers from respondents in Mexico, the rank follows the original scale of the questionnaire, as “always” ranked first with 45%, “quite often” second with 25%, “usually” third with 17%, “seldom” fourth with 12% and “never” fifth with 1%. For the case of the answers from individuals working in the United Kingdom, the rank in Figure 8.17 shows that “usually” was first with 66% and “always” and “quite often” in second with 17% each one.
These numbers show that in the case of employees the United Kingdom there is a strong perception showing that individual performances usually influence the allocation of rewards whereas in Mexico, employees in the oil sector perceive that this happens in a significant proportion of occasions.

The Spearman’s rank correlation test shows that in the power generation sector in Mexico and the United Kingdom the responses of the employees are different. Three out of the fifteen questions yielded Spearman coefficient indicating that the perceptions from individuals in Mexico and the United Kingdom were the same.

The first of these three questions relates to the use of project management methodologies being important for project success, where the answers from respondents in both countries ranked “quite often” as first, “always” as second, “seldom” as third and “usually” as fourth. The combined answers from “quite often” and “always” show that 80% of the responses from employees in Mexico and 75% in the case of the answers from individuals in the United Kingdom fell within these two ranges.

The second question, regarding the project being driven by business facts and objectives rather than emotions shows that the perceptions of the respondents in both countries are alike, as the answers ranked “quite often” as first, with 49% in the case of individuals in Mexico and 58% in the case of respondents in the United Kingdom, “usually” as second with 27% and 25% respectively and finally, “always” as third with 24% and 17% for Mexico and the United Kingdom respectively, as shown in Figure 8.18 below. These
responses show that the majority of employees in both countries perceive that the projects are quite often driven by business facts and objectives, leaving the emotions out from the project. It is also important to remark that none of the respondents in either country mentioned “never” or “seldom” as their answers, implying that the projects they work at are managed following a well established business plan.

![Bar chart showing the percentage of respondents answering Never, Seldom, Quite often, Usually, and Always to the question of whether the project is driven by business facts and objectives rather than by emotions.]

Figure 8.18 Project drivers

The third question, the project plan containing clear milestones, shows that the vast majority of employees in both countries agree on their projects having clear milestones usually or quite often. The answers from individuals in Mexico and the United Kingdom ranked “quite often” as first, “usually” as second, “always” as third and “seldom” as fourth. In the case of Mexico, 72% of the answers from the respondents fell within the two first categories, compared to 83% of the responses from individuals in the United Kingdom.

On the opposite side, three out of the fifteen questions yielded coefficients showing that the ranks for these questions are rather different. The first case, related to question linked to the work breakdown structures being used as selection criteria for team members, the answers from individuals in Mexico ranked “seldom” first, “usually” second, “quite often” third and “always” as fourth, whereas individuals in the United Kingdom ranked “quite often” as first, “always” and “seldom” as second and “usually” and “never” as third, as shown in Figure 8.19 below. In this case, the perceptions from respondents in Mexico and the United Kingdom are rather different, as the majority of individuals in Mexico perceive that breakdown structures are seldom used as selection
criteria for team members, as opposed to a nearly 60% of respondents in the United Kingdom acknowledging that this happens quite often or always.

![Bar chart showing the work breakdown structure is used as a selection criteria for team members.](image)

**Figure 8.19 Team selection criteria**

The second question, related to teams being penalised for failures and mistakes shows another set of opposite views. In the case of the answers from respondents in Mexico, the rank shows “quite often” as first with nearly 60% of the answers falling into this category, “usually” as second with 17%, “never” as third with 13%, “seldom” as fourth with 7% and with 2%, “always” in fifth. The answers from individuals in the United Kingdom shows “seldom” ranked as first with 50% of the answers and “quite often” and “usually” in second with 25% of the answers each one.

The last question presenting important differences in the perceptions from the respondents in Mexico and the United Kingdom relates to the results of the project influencing the allocation of rewards. The rank of the answers from respondents in Mexico shows that “seldom” was ranked first, “quite often” second, “usually” third and “always” fourth whereas the rank of the answers from individuals in the United Kingdom shows “always” in first, “seldom” in second and “quite often” and “usually” in third. These results contrast because in the case of the respondents from Mexico, 36% acknowledge that the results of the project seldom influence the evaluation of individual performances as opposed to 25% of the employees working in the United Kingdom. Moreover, 42% of the respondents from the United Kingdom acknowledged that their individual performances are always influenced by the results of the project, yet again
providing them with further motivation to achieve project success. Figure 8.20 shows these ranks.

![Graph showing the influence of project results on individual performances in Mexico and the UK.]

Figure 8.20 Evaluation of individual performance

8.3.5 Project environment

The last section of the questionnaire was composed of twelve questions, related to the environment surrounding the project as shown in Appendix J. The Spearman’s rank correlation test yields coefficients showing that ten out of the twelve ranks for the comparison between the oil and power generation sectors in Mexico are the same and that the remaining two ranks show just minor differences.

The first question where the ranks show differences is related to the project manager keeping a positive relationship with the management. In this case, the answers from respondents in the oil sector ranked “quite often” as first and “always” as second, with 52% and 48% respectively and, in the case of the answers from individuals in the power generation sector, the rank shows “always” as first, “quite often” as second and “usually” as third, with 51%, 47% and 2% respectively.

The second question is linked to the project being provided with sufficient resources from the management and shows that although the answers rank slightly different, the overall perception is the same. Respondents in the oil sector ranked “usually” first with 32%, “always” and “seldom” second with 31%, “never” third with 6% and “quite often” fourth with 2%. In the power generation sector, the answers ranked “always” first,
“seldom” second, “usually” third, “never” fourth and “quite often” fifth, with 32%, 30%, 27%, 7% and 4% respectively.

If the responses within “seldom” are not considered, the rank shows that 63% of the respondents in the oil sector and 58% of those in the power generation sector acknowledge that always or usually the project is provided with sufficient resources from the management, as shown in Figure 8.21.

![Figure 8.21 Project support from the management](image)

In the case of the oil and power generation sectors in the United Kingdom, the Spearman coefficients show that the ranks of three questions are exactly the same. The first one of these questions is associated with the external changes in the environment being monitored, where the answers from individuals in the oil and power generation sectors in the United Kingdom ranked “quite often” as first, with 58% and 75% for the oil and power generation sector respectively, “usually” and “always” as second (17% for oil and 8% for power generation) and “seldom” as third, with 8% and 7% for the oil sector and power generation sector respectively. In this case, it is evident that in both sectors, respondents perceive that changes in the project environment are monitored quite often.

The ranks for the question associated with the project team being regarded as credible show that individuals working in the oil and power generation sectors in the United Kingdom ranked “quite often” as first, “always” as second and “usually” as third. In the case of the oil sector, the percentages were 50%, 33% and 17% respectively and, for the
answers from individuals in the power generation sector, the percentages were 42%, 33% and 25% respectively, showing that two thirds of the respondents in both sectors perceive their teams as always regarded as credible, as shown in Figure 8.22.

![The project team is regarded as credible](image)

Figure 8.22 Project team credibility

In the case of the question of the project manager having a good relationship with the customer, the ranks of the answers from individuals working in the oil and power generation sectors in the United Kingdom show that their perceptions are similar. The answers ranked “quite often” as first, “always” as second, “usually” as third and “seldom” in fourth. In the case of the employees working in the power generation sector, 58% acknowledged that quite often the project manager has a good relationship with the customer and this percentage rises up to 67% in the case of the employees working in the oil sector, which shows the importance the project manager gives to the customer of the project and how the team perceives the importance of this relationship.

The question related to the project team having good relationship with the suppliers shows that respondents from the oil and power generation sectors in the United Kingdom perceive this relationship in a somehow different manner. The ranks for the answers from respondents in the oil sector presents “quite often” and “usually” tied in first place with 33% each, “always” in second with 25% and in third, “seldom” with 9%. For the answers from individuals working for the power generation sector, 50% placed “always” in first, “usually” in second with 25%, “quite often” third with 17% and “seldom” fourth with 8%, showing that in this case, the vast majority of the
respondents perceive that the project team has always or usually a good relationship with the suppliers.

For the answers provided by respondents in the oil sector in Mexico and the United Kingdom, the Spearman’s rank correlation test shows that the ranks are the same in only one question, related to the relationship of the project manager with the suppliers. In this case Figure 8.23 below shows that the answers ranked “quite often” as first, “always” second, “usually” third and “seldom” fourth with 45%, 36%, 13% and 6% respectively in the case of the respondents in Mexico and 58%, 26%, 8% and 7% respectively for the respondents in the United Kingdom.

![The project manager has a good relationship with the suppliers](image)

Figure 8.23 Project manager relationship with suppliers

The Spearman coefficient shows that in two out of the twelve questions the ranks for the responses provided by the employees of the oil sector in Mexico are very different to the ranks of the responses from employees in the United Kingdom. The first question, associated with the project being provided with sufficient resources from the management, shows that in the case of the respondents in Mexico the answers ranked “usually” as first, “always” as second tied with “seldom”, “never” as third and “quite often” as fourth opposed to “quite often” first, “seldom” second and “always” and “usually” tied in third in the responses from individuals in the United Kingdom. The most interesting feature of this comparison is that nearly one third of the respondents in Mexico acknowledged that their projects are always provided with sufficient resources from the management when only 8% of the respondents in the United Kingdom
perceived the same level of support. Also, six percent of the employees working in Mexico responded that their projects are never provided with sufficient resources.

Finally, regarding the project being provided with sufficient support from the management, the ranks of the answers show another set of differences. In the case of the respondents in Mexico, the answers ranked “usually” first, “always” second, “never” third and “quite often” fourth, with 62%, 31%, 6% and 1% respectively. For the answers from individuals in the United Kingdom, the rank shows “quite often” as first with 67%, “usually” as second with 25% and with 8%, “seldom” as third. Figure 8.24 shows these ranks.

![The projects are provided with sufficient support from the management](image)

Figure 8.24 Support from the management

It is interesting to remark that two thirds of the respondents in the United Kingdom acknowledged that the management provides the project with sufficient support quite often compared to the 62% of respondents in Mexico who answered that this happens “usually”. On the other hand, 31% of the respondents in Mexico mentioned that the management always provides sufficient support for their projects whereas none of the respondents in the United Kingdom mentioned this. Also, as mentioned before, 6% of the respondents in Mexico mentioned that their projects are never provided with sufficient support from the management but respondents in the United Kingdom did not acknowledge this.

The Spearman coefficient of the ranks of the responses of employees working in the power generation sector in Mexico and the United Kingdom shows that only one
question out of twelve has equal ranks in both countries. This question is linked to creativity and innovation being encouraged by the project environment and the ranks show that the answers from respondents in Mexico and the United Kingdom rated “usually” as first, “always” as second, “quite often” as third and “seldom” fourth. In the case of the respondents in the United Kingdom, 50% of the individuals acknowledged that the project environment usually encourages innovation and creativity, falling down to 40% of the answers from employees in Mexico. At the same time, one third of the respondents in Mexico perceive that the project environment always encourages innovation and creativity, opposed to 25% in the United Kingdom.

Finally, two questions out of twelve yielded Spearman coefficients indicating that there are strong differences between the ranks of the answers provided by employees in both countries. As with the employees working in the oil sector in Mexico and the United Kingdom, these questions are associated with the project being provided with sufficient resources from the management and the project being provided with sufficient support from the management. The ranks of the first question, related to the resources provided to the project by the management, show that in the case of employees in Mexico, “always” rated as first with 32%, “seldom” a close second with 30%, “usually” third with 27%, “never” fourth with 7% and “quite often” fifth with 4%; the rank for the answers from individuals in the United Kingdom shows “quite often” as first with 66% and “always” tied in second with “seldom”, each with 17%. The first contrast is that only 4% of the respondents in Mexico perceive that the management quite often provides the project with sufficient resources, opposed to 66% of the respondents in the United Kingdom. On the other hand, 32% of the respondents in Mexico perceive that this always happens, contrasting with 17% of the individuals in the United Kingdom.

The second question where there is a significant difference, linked to the projects are provided with sufficient support from the management, also shows significant differences. The rank for the answers from employees in Mexico shows “usually” in first, “always” in second, “never” in third and “quite often” in fourth, with 59%, 30%, 7% and 4% respectively and, in the case of the United Kingdom, “quite often” and “usually” are tied in first place with 42% and “seldom” and “always” in second with 8% each one.
8.4 Key success factors

The analysis of the data gathered in the main questionnaire provided the researcher with the ability to understand what factors directly impact the success of projects. Out from the 268 responses provided by individuals in both the United Kingdom and Mexico, 16 classified their projects as failed or unsuccessful. From these 16 failed projects, 15 were carried out in Mexico and one was carried out in the United Kingdom.

From these projects, a series of positive and negative factors was developed, following the responses provided within the given scale. As the questionnaire was organised in five different sections, each one addressing one specific part of any project, the responses of the individuals were framed within the specific setting of the sub-category of the questionnaire.

8.4.1 Negative factors

The responses provided in the questionnaire for the failed projects show that there are certain specific factors negatively impacting projects. These factors were gathered from the responses concentrating the highest overall ratio in the scale provided. The factors are presented in the order from the questionnaire. The description of these factors is provided considering the responses from individuals who classified their projects as unsuccessful. Although the size of the samples could be considered as a potential issue, as mentioned in Chapter 6, the non-response bias can be addressed if the overall responses are statistically significant. Moreover, the analysis of the negative factors shows that these are aligned with the results of the research of authors such as Appelbaum & Steed (2005), Cooke-Davies (2002) and Shenhar et al (2002).

Nearly 90% of the respondents who acknowledged that their projects failed mentioned that their projects rarely have a clear visualisation during the design phase and, at the same time, 87.5% of the respondents also mentioned that the project processes and activities are rarely clearly described and 94% of the respondents mentioned that in their projects it is rare to deal with power struggles and politics before the project is implemented. From these responses it is clear that lack of visualisation and description of the processes and activities result on the project having no clear headings and therefore, leading to failure.
Lack of a clear project plan was mentioned by 81% of the respondents as a factor leading to project failure. It is understandable that if the project lacks clear visualisation and if the activities and processes are not clear, the project will have a weak plan or will have none at all. At the same time, nearly 87% of the respondents mentioned that failed projects were always over budget. One important point to mention is that 86% of the respondents mentioned that their teams are rarely penalised for failures or mistakes.

Documenting past experiences and mistakes is also another factor negatively impacting project success as 88% of the respondents mentioned that their projects rarely fulfil this task. Also, 87% of the respondents mentioned that the management interferes with the decision-making procedures all the time and 87.5% of the respondents mentioned that the external changes in the project environment are rarely being monitored.

From these responses it is clear that a faulty conceptualisation phase, a defective statement of the project activities and processes and lack of monitoring of changes in the external environment of the project will inevitably lead to project failure, with consequent overspending and therefore, involving more interference of the management in the decision-making procedures as the project has to be amended “on the run” in order to complete it. Also, if mistakes and experiences from past and present projects are not documented, it is more than likely that a new team (and sometimes teams that have been working in the project for some time) will incur the same mistakes because there is no information about what caused those problems or how to avoid them.

8.4.2 Positive factors

The questionnaire provided responses about successful projects, showing that there are certain specific factors which positively impact them. The responses concentrating the highest overall ratio of answers within the scale where the ones from where the factors were extracted. The factors are presented in the order in which they were placed in the questionnaire. The description of these factors is provided considering the responses from individuals who classified their projects as successful. Moreover, the factors impacting positively on projects are closely related to those presented in the research of Dvir et al. (2006), Atkinson (1999), Clarke (1999), Cooke-Davies (2002), Gray (2001) and Shenhar et al. (2002), Minarro-Viseras et al. (2005), therefore validating their research and providing more relevance to this study.
Having a clear project plan was accounted by 78.1% of the respondents as usually or always happening and in more than 58% of their responses, the individuals who qualified their projects as successful agreed that a clear visualisation of the project processes during the design phase occurs more than quite often in their projects and 77% of the respondents also agreed that usually or always their projects contain a clear definition of the expectations of the customers. Also, 60% of the respondents concur that the expectations of the external stakeholders are usually or always clearly defined as well. Moreover, two thirds of the respondents recognised that their projects usually or always require feasibility studies before the project is implemented.

At the same time, 58% of the individuals agreed that power struggles and politics are usually or always managed in their projects before they are implemented. According to their responses, 77% of the individuals feel that project breakdown structures, start and finish dates and budget and resource allocation are usually or always clearly defined while 71% of the respondents mentioned that their project usually or always contain clear milestones.

Meeting the deadlines was mentioned by 51.1% of the respondents as usually or always being fulfilled in their projects while 90.5% of the individuals agreed that their projects are focused on delivering outcomes in the same vein. Also, nearly 71% of the people who mentioned that their projects were successful answered that their project processes and activities are usually or always clearly described. 78.1% of the individuals also agreed that usually or always the focus of the project processes and activities is on results while two thirds of the respondents stated that usually or always there is a systematic monitoring of the progress of the project and regular communication sessions and in 73% of their responses they mentioned that external changes in the project environment are usually or always monitored on a continuous basis.

The use of open communication to deal with uncertainty in projects was an element mentioned by 61.9% of the respondents as usually or always happening and 71% of the respondents also mentioned that past experiences and mistakes are well documented more than usually. Individuals mentioned that each team member usually or always has a clear understanding of her/his role in the project in 55.1% of their responses and nearly 62% of the respondents also mentioned that the members of their teams are usually or always committed to the success of the project. Moreover, 80% of the
respondents usually or always know exactly what their responsibilities within the project are.

In 56% of their answers, respondents agreed that feedback on project processes and activities is usually or always provided on regular basis and 67% of the individuals mentioned that project information is open to all team members. Moreover, 75% of the respondents mentioned that they are usually or always encouraged to learn from past mistakes.

In their responses, 72% of the individuals acknowledged that team members usually have a good relationship with each other and 78.6% of the respondents also mentioned that the project manager usually or always has a good relationship with the team members. Also, 60% of the respondents mentioned that usually or always conflicts amongst team members is recognised and dealt with.

Seventy percent of the respondents mentioned that the experience of the project manager usually or always helps to achieve the project results and that the project manager usually or always possesses knowledge in both project management theory and practice. Additionally, two thirds of the respondents admitted that the style of the project manager usually or always adapts to the different project phases and 68% of the individuals agreed that usually the project manager focuses on having a competent team, while 60.1% of the teams are usually composed of members from different cultural backgrounds.

Interdependence amongst stakeholders is usually recognised according to 80% of the responses. Three quarters of the respondents acknowledged that their teams usually have structural flexibility to perform their tasks while 68% of the individuals recognised that their teams usually organise their own work activities. In this same vein, the respondents admitted in 61% of their responses that the teams usually or always respond immediately to changes in the external environment and also, in 80% of the responses the individuals accepted that usually the performance of the project is influenced by the performance of the team.

The individuals who responded to the questionnaire admit in 91% of their answers that team work is usually or always regarded as important for project success while 80% of the individuals admitted that the use of project management methodologies and tools is
usually important for project success as well. 75% of the respondents mentioned that the understanding of these methodologies is usually important. However, 73% of the people who answered the questionnaire stated that their projects are usually or always driven by business facts and objectives rather than by emotions.

Following the responses of 75% of the individuals, the performance of the team is a factor usually or always evaluated according to the project goals. Also, 56% of the respondents mentioned that team results usually or always influence the allocation of rewards while 65.5% of the individuals acknowledged that the allocation of rewards is usually or always based on individual performances.

The relationship of the manager with the senior management was regarded as a usually or always being a positive one by 98% of the respondents while 80% of them also mentioned that the relationship of the project manager with the customer and the suppliers is usually or always a good one.

Seventy percent of the respondents acknowledge that the project manager is usually or always regarded as being credible while 80% of them mentioned that the project team is regarded as credible within the same value of the scale.

According to their responses, individuals mentioned in more than 94% of their answers that management is enthusiastic more than usually about the project and 66% of the respondents also mentioned that management provides the project with sufficient resources to be completed more than usually.

8.5 Interviews

After the analysis of each one of the responses to the statements of the questionnaire provided by the individuals composing the sample, telephone interviews were conducted with seven senior project managers in order to corroborate the findings. As described in Chapter 6, five of the interviewees are located in Mexico and two in the United Kingdom. Of the five interviewees located in Mexico, three work for the Mexican oil company (Petróleos Mexicanos, PEMEX) and the other two for the Mexican power generation company (Comisión Federal de Electricidad, CFE). Of the interviewees located in the United Kingdom, one works for a power generating organisation and is based in Scotland and the other one works for a company providing services to the oil industry and is based in England. All seven interviewees were asked
the same questions, shown in Appendix I derived from the analysis of the responses of the main questionnaire (Appendix F).

When questioned about the factors impacting negatively in projects, all seven interviewees agreed that before any project is implemented, feasibility studies have to be carried out. However, the project managers working for the Mexican organisations mentioned on some occasions these feasibility studies are omitted in the rush of securing contracts at the lowest costs, therefore impacting the development of the project and the relationship with the contractors as CA mentions “... sometimes, we agreed upon costs, timelines and deliverables as the main ideas about the project are there but then the feasibility studies are presented after the contracts have been signed, just to keep the bureaucracy in line.” Furthermore, AR from CFE stated that “…in the case of CFE, as most of our suppliers are foreigners, we have to secure the Mexican peso exchange rate, hence the rush on signing contracts and securing the budget and sometimes this jumps over the fact that we need to have the feasibility studies before taking these steps.”

One point which is important to mention is that the two project managers working for the CFE in Mexico agreed that dealing with power struggles and politics before the project is implemented is one of the issues they would like to perform as soon as each project is conceptualised. However, due to the inherent structure of the governmental organisations where they work, it is almost impossible to avoid the appearance of these issues. Additionally, two of the managers working for PEMEX in Mexico agreed that even though projects are already being carried out or are in the middle of their lifecycle, there are power struggles and politics to be dealt with mainly because lack of understanding by their counterparts in other governmental organisations. It is important to mention that one of the project managers located in the UK stated that power struggles have been present in the projects he has managed, which shows that this issue is present not only in Mexican projects and companies, as JR from the power generation sector in the UK states: “as we are an utilities company, we have to comply with an enormous amount of rules, legislation and constraints and sometimes even though we have all the resources ready to go ahead with the project, we are held back until the bureaucrats decide to let us work.”
Four of the interviewees (two from PEMEX and one from CFE and one from the UK) mentioned that even though the vast majority of their projects are provided with a plan, on certain occasions these plans lack clarity or proper specifications and therefore, those projects later face problems and setbacks. GM from PEMEX mentioned that “it is a nightmare when we’re called to take over a project which has already begun, because the way we do things is not always the same as other people do, even though we work in the same company and there’s nothing worse than taking over a project and discovering that we’re walking like a blind man, without proper plans or with a project which has no clear specifications.” Another of the project managers working in PEMEX linked this problem to bureaucracy and the rush to secure contracts at low costs, which goes in line with the comments regarding a lack of feasibility studies mentioned above.

All seven individuals accepted that in their work experience they have managed projects which have run over budget. The three managers working for PEMEX specified that even though those projects were over the original budget, their development continued and the projects were considered successful. RB from PEMEX said that “yes, we’re pressured to keep the project within budgets but it’s not the end of the world if we run over it, after all, there will be more waste of money and time if we leave the project unfinished.” The project manager working for the power generation industry in the UK mentioned that some projects had to be stopped and thoroughly reviewed when they run over budget even though this added costs and delays and his comments were far more strict than those of the project manager from PEMEX: “I and my team are accountable for the mishaps in the project and for every single penny we spend and if the project is heading towards being over budget, we stop before anything else is spent, evaluate what is causing these problems, correct it and then carry on.” Also, the project managers working for CFE and PEMEX mentioned that on some occasions they ran audits of the projects carried out for them by contractor companies in order to verify their status, costs and deliverables before the projects were finalised. TN, one of the project managers from PEMEX said that “of course we have to keep an eye on our expenses, after all, with all these scandals linking PEMEX with corrupt practices, the internal audit department keeps a close eye in every major project ensuring that the money goes to the project and not somewhere else…”

One of the managers in the CFE mentioned that the projects his organisation carries out are usually provided with a clear project plan, containing clear milestones and
deliverables and budget, schedules and breakdown structures are clearly defined and, the allocation of the resources is a task entirely depending on the organisation carrying out the project. This manager also mentioned as the contracts include penalty clauses, teams are hand picked and all suppliers and external stakeholders have to go through a careful review process before the project starts: “we have been working on projects along with the Japanese and we had to adapt to their way of working but we also had to ensure that things were really done and that we would get our deliverables in time and each contract we gave them had to include penalisation clauses.”

All three managers working for PEMEX mentioned that the allocation of rewards for their teams is based mostly in the results of the project, rather than being based on personal performance while, at the same time, even though the vast majority of the individuals who responded to the questionnaire mentioned that their teams are rarely penalised for failures or mistakes, the managers admitted that they penalise the teams if the objectives of the project are not achieved or if mistakes affecting the project are made. Also, CA from CFE mentioned that “in most occasions, the members of the team get their bonuses based on the state of the project and on the fact that they have been doing what they’re supposed to do, after all, if they do this then the project will be kept on track but if they have been slacking, I don’t see why I should give them a reward.” Both project managers working in the UK agreed to this point to the same extent also mentioning that this does not happen frequently as NG from the oil company mentions “I am responsible for my team and for keeping the project on track and also, for reviewing the performance of my teams which then is MY performance.” The project managers working for CFE and PEMEX stated that the rewards are sometimes allocated following individual performance and others after a thorough review of the project as a whole.

Two of the project managers from PEMEX and one from CFE mentioned that the teams working in their organisations use project management methodologies for all their projects. Both project managers from the UK mentioned that their organisations always use project management methodologies and JR from the power generation company said that “most of us have been working with project management methodologies for a long time as in some cases we come from other companies where it was mandatory. In my case, I have worked with PRINCE2 and I have tried to make people working with me to attend seminars on project management or hire people who are already certified in
the use of project management methodologies.” The last remaining manager from PEMEX mentioned that even though the teams working in his organisation are encouraged to use project management methodologies this is not always possible as some of the team members have little or no knowledge about these methodologies. The reason he gave was that most of these employees have a more hands-on approach rather than a technical one: “you can’t take a big bunch of operative personnel and then tell them that every move they take has to be reported or documented, their job is to have things done and because of this you can’t expect them to follow a formal procedure all the time.”

One point showing contradictory responses is that of the documentation about past experiences and mistakes. The researcher specifically asked the interviewees to give their opinion about this issue bearing in mind projects carried out jointly and the responses show two different points of view. The project managers working in PEMEX mentioned that in every project carried out with private organisations either as contractors or as partners all the experiences are documented and, at the finalisation of the project, they deliver one copy of this document to their counterpart as part of the deliverables when closing the project as TN states “in our projects along with REPSOL, when the projects finished and they’re being closed down, just before delivering the final payment to the supplier, we are given a full set of documentation stating that we fulfilled our role and that they delivered what we wanted.” The managers working for CFE mentioned that even though those documents are part of the deliverables submitted at the closure of the project, on the vast majority of the occasions the documents do not include a detailed account of the mistakes or problems encountered while the project was being carried out. Moreover, AR from the CFE mentioned that he believes the privately run organisations deliberately avoid mentioning any problems faced by the project to avoid further questioning. AR stated that “we all knew that this particular project had faced tough problems, change in the project manager and that in order to be delivered on time the contractor had to go way over budget, but none of these problems were on the final document stating that the outcome had been successful.” In the case of the project managers working in the UK, both mentioned that as they use project management methodologies to control their projects, these methodologies specifically require thorough documentation of the project.
All seven interviewees agreed that project managers and team members usually have a good relationship with the senior management, emphasising that they believe that no project manager wants to compromise the support senior managers provide projects just because of personal agendas. RB from PEMEX admitted that “in my case, I tend to keep in touch with the upper management and have a friendly relationship because in the case of help being needed, I know that this close relationship I have with them might be useful.” In this point, all five individuals working in Mexico made a remark about the way they perceive projects are carried out in Mexico, mentioning that the relationship they have (as senior project managers) with the people under their command tends to be a paternalistic one. In contrast, the project managers working in the UK mentioned that the relationship they have with the people working under their supervision is considered as a “professional” one, avoiding any paternalistic approach and favouring creative thinking and an “open doors” policy with the members of their teams. With respect to this, NG, from the oil company in the UK stated that “yes, we can go out for a drink on Friday after work but that doesn’t mean that five minutes before I didn’t have a tough chat with the team because things weren’t working as they were supposed to be, besides, all of them know that if there are problems, I am the first one who has to be informed and my door is always open.”

Four of the managers working in Mexico (two from PEMEX and two from CFE) made the specific remark that even though their relationship tends to be paternalistic one, this does not mean that they do not provide their subordinates with feedback or reprimands when necessary. They also mentioned that the allocation of rewards is in no way influenced by the relationship the team members and project managers have with them as senior managers. AR from the CFE admitted that “sometimes it can be tough to tell your people that they won’t get the reward they were expecting, but the only thing you can do is to explain them the reasons why you reached this conclusion.” The remaining senior project manager from PEMEX stated that his relationship with the people composing the teams under his supervision tend to be a more “professional” one. When the researcher asked him to specify what he classified as professional, the senior manager said “I do not make any distinction between the members of my teams or project managers and that even though I try to keep an open doors policy regarding the projects, I have made clear that work and objectives are above anything else in the projects under my supervision.” Both project managers working in the UK specified that rewards are allocated strictly after an evaluation of performance totally independent
of the relationship the team members have with the project manager. In this respect, JR from the power generation company mentioned that “there are annual performance reviews, matched against previously specified objectives and obviously, if the objectives were achieved and the person shows that the work was done, it is only fair to give her/him a reward.” Also, they stated that feedback is provided as soon as possible as it prevents team members from repeating errors and that this feedback is (on most occasions) given to all team members rather than a specific one. NG from the oil company admitted that “in the case of a big problem or mistake, one of our policies is to communicate with all members of the company directly involved and let them know what happened and why it happened, so they can avoid it in the future.”

All five interviewees in Mexico acknowledged that when a project starts showing signs of problems they tend to meet with the project teams more often and keep closer control over the project advances and expenditures. TN from PEMEX, commented that “sometimes it can be very difficult to gather together all the people involved in the project because some units operate in geographically disperse locations, however, bringing them all together to one location is definitely cheaper than letting the project run without control.” This point accounts for the 87% of respondents who stated that when their projects fail the senior managers interfere with the decision-making process. It is important to mention that all the interviewees admitted that even though projects facing problems require closer supervision this does not mean they overlook the status of other projects under their management as NG mentioned that “I don’t have only one project under my supervision but at the same time, I don’t let any project to run alone as it is my job to prioritise and supervise all those projects.”

The importance of monitoring changes in the external environment of the project is a point where the five interviewees agreed. The individuals working for PEMEX and CFE acknowledged that they have to monitor these changes in order to adjust their policies and be ready for the impact they can have on the projects already being carried out and those which are in the conceptualisation or feasibility study phases. The significance of this point resides in the nature of the way joint projects are funded, as participation in these projects is issued as a public offer, auctioned and assigned to the highest bidder (fulfilling all the requirements, of course) and any changes in the external environment might change the basis of the auctions. AR from the CFE stated that “in the case of joint projects, I can say that there are redundancies in the good sense of the word, as if
something escapes of my attention, there’s my counterpart to catch it and as these projects are very complex, I would be a liar if I say that this has never happened, however, we do try to keep all variables under supervision and try to monitor our environment looking up for problems in the horizon.”

When the interviewees were asked about their perception of the impact of the Mexican culture on the way projects are managed, all of them mentioned that they believe this impact is noticeable. One of the managers working in PEMEX with joint projects with privately run organisations in Mexico acknowledged that even though the usual perception is that Mexican workers are lazy, the organisation working along with them (of Spanish capital) regards its Mexican employees as valuable and very committed. CA from the CFE mentioned that “I get angry when Americans or Japanese say that we Mexicans are lazy; we tend to stay working until late, even after most of the foreigners have left the office, why? I think that it is because we don’t like to leave things unfinished, even though we know that we have to come back to work tomorrow and that we will have time to finish them.” The managers working for PEMEX and CFE also regarded the employees working for their organisations as valuable and committed and made a specific remark about those employees who are in the union. They mentioned that even though most of those employees are usually appointed as team members in the lowest ranks of the organisation to perform the tasks which require hard labour for the project to achieve its objectives, the fact that they are members of the trade union makes them prone to lack commitment to the project. RB said that “in the case of the employees who are in the union, how can you expect them to deliver when they also have to comply with the statutes of the union? I mean, you’re either committed with the project or you’re following the dictates of a guy who has been named as representative but has never set afoot on a proper project.” They also mentioned that these individuals usually have a long time working for the organisation, learning to perform their tasks as time goes by and the vast majority of these employees do not have a postgraduate qualification and, at the same time, stated that their organisations provide training to all their employees as well as opportunities for funding postgraduate courses and seminars. The three managers from PEMEX specifically mentioned that their companies have a career plan specified for each one of their employees, including training, promotions and rewards, which is the same answer given by the two project managers working in the UK.
When asked to give their opinion about their counterparts in the private sector, the project managers from both sectors show quite similar opinions. The project managers working for PEMEX and CFE acknowledged that usually the team members and project managers from the private organisations are well-trained, they possess knowledge and are committed to achieve the objectives of the project being carried out and, at the same time, they regarded them as somehow distant and expensive. TN from PEMEX stated that “I understand that those guys from the private companies are well-trained and that have all those people there to back them, after all, to achieve success in those companies you have to show that you know what you do and that you can really deliver and we don’t want to have deals with people who don’t know what the job is.” On the other side, regarding what the opinion of their counterparts in the organisations working along with PEMEX and CFE is, the interviewees mentioned that the senior managers, project managers and team members regard those working for PEMEX and CFE as habitually knowing what their roles and responsibilities are in the project as well as knowing the methodologies used to control the project as AR pointed out that “obviously, they expect to work with someone who is actually involved in the project and who knows how to pull the strings and they also know that we are here because we know how to get the job done.” They also mentioned that their employees and the ones working for the privately-run counterparts usually maintain a good working relationship, feeling integrated and part of the team as if there were no barriers. The only point mentioned as a negative one was that of the bureaucracy and politics in public sector organisations. The three interviewees working at PEMEX acknowledged that when any changes, problems or comments about the projects being carried out have to be made or dealt with, it usually involves a tedious process as the public organisations have a large bureaucratic apparatus.

8.6 Conclusion

After the application of the Spearman’s rank correlation coefficient test and the description of the data produced by this method, it is evident that new trends and patterns emerge from the data gathered through the application of the main questionnaire described in Appendix F. Each one of the five sections of this questionnaire addresses one specific area of project management culture and the application of the Spearman’s test to the previously mentioned four pairs (oil sector vs. power generation sector in Mexico, oil sector vs. power generation sector in the United Kingdom, oil sector in Mexico vs. oil sector in the United Kingdom and power
generation in Mexico vs. power generation in the United Kingdom) yielded interesting information.

In the case of the first element of project management culture, namely the processes in the project, there is a strong correlation of the responses from the oil and power generation sectors in Mexico, as well as the oil and power generation in the United Kingdom. However, differences arise when the Spearman’s test is applied to the oil pairs as well as the power generation pairs. In the case of the oil sector in Mexico and the United Kingdom, it is evident that the responses from individuals in Mexico disagree with those from respondents in the United Kingdom and this trend is repeated in the power generation sector.

In the section of the main questionnaire regarding the people in the project, the trends mentioned above are present again. The Spearman’s test coefficient shows a strong correlation between the answers from respondents in the oil and power generation sectors in Mexico and shows differences between these two sectors in the United Kingdom and therefore carrying on the differences in the perceptions when the test is conducted within the oil sector in Mexico and the United Kingdom and within the power generation sector in Mexico and the United Kingdom.

Regarding the elements composing the structures in the project section of the questionnaire, the empirical data shows that the correlation present in the first two sections of the questionnaire (processes in the project and people in the project) for the pair oil sector and power generation sector in Mexico is also present in this section of the data as the answers from the respondents in these two sectors show that there is a strong correlation between them. Also, for the oil sector and power generation sector, the data shows that there is a correlation between the answers from individuals in these sectors, although it is not as strong as the one shown in the Mexican sectors. However, the pairs composed by the answers from respondents in the oil sector in Mexico and the United Kingdom and the pairs composed by the answers from individuals in the power generation sector in Mexico and the United Kingdom also show that there are divergences in the answers from individuals from both sectors and countries, although these divergences are less acute than those shown in the previous sections of the questionnaire.
The last section of the questionnaire, related to the environment of the project shows the continuation of the trend shown in the previous sections as the pairs of answers from individuals working in the oil and power generation sector in Mexico show strong correlations. Furthermore, the pairs of answers from respondents in the oil and power generation sectors in the United Kingdom also show a strong correlation, more accentuated than in previous sections of the questionnaire and this trend of strong correlations continued for the two other sets of pairs.

Overall, the results of the Spearman’s rank correlation coefficient shows that the correlation present in the empirical data for the oil and power generation sectors in Mexico follows the behaviour addressed by Bauer & Quitanilla (1995; 2000), Breceda (2000), Baker & Ramirez (2002), Barnês-Regueiro et al. (2002) and Lehuq et al. (2004), regarding the similitude of operations, structure and management of Petróleos Mexicanos (PEMEX) and the Comisión Federal de Electricidad (CFE) due to the inherent nature of governmental organisations not being completely autonomous and detached from the Mexican central government. Furthermore, the data analysed provided information pointing to the key factors impacting the success of projects, both positively and negatively.

As mentioned before, in order to validate the information gathered in the questionnaire, interviews were held with key project managers in both governmental organisations in Mexico and two companies in the United Kingdom. The information provided by these project managers provided a solid start for understanding the success factors linked to projects carried out in the oil and power generation sectors in Mexico.

As mentioned in Chapter 6 (Methodology) and in Section 8.1, in order to avoid the problem of cognitive satisficing the use of triangulation methods was required and the information gathered during the interviews was used to cover this point. Moreover, this information shows that even though senior project managers in Mexico and the United Kingdom appear to present common points regarding the management of projects and their understanding of project management culture there is a clear division in their opinions which can be attributed to the differences in culture of these two countries, such as how power struggles and politics in projects are dealt with and what the type of relationship between team members and project managers is. Furthermore, the strongest
difference is in the level of bureaucracy surrounding the projects, which again can also be attributed to cultural elements as described by Litrico (2007)

The following Chapter presents a discussion of the results from this study.
Chapter 9 Discussion

9.1 Introduction
The importance of the findings and their analysis is reflected in the discussion which links them with the literature. This Chapter will follow the structure of the main questionnaire (Appendix F), which is composed of five sections, namely “project process”, “people in the project”, “project systems”, “project structures” and “project environment. The key elements of each section will be discussed in turn. Furthermore, the success factors encountered during this research are discussed. The final part of the Chapter summarises the previous sections by discussing the success factors that need to be present in a project.

9.2 Project process
Even the smallest project has several processes which need to be completed before the project can be deemed closed and these processes are, in most cases, carried out in several phases. What makes a project process successful and achieve its end on time and within budget is one of the issues addressed during this study. Following the empirical data gathered during the course of the survey and the information from the interviews, the most relevant areas where the empirical data addressed the literature reviewed are presented below.

The expectations of customers and external stakeholders are clearly defined. Before any project starts, it is imperative that customers, external stakeholders and project teams establish what their expectations are regarding the outcomes of the project. In the case of the project team, a clear understanding of the expectations of the customers can simplify the tasks to be carried out during the life cycle of the project along with the understanding of what external stakeholders expect from the project team (Boyd, 2001). The research of Eskerod & Skriver (2007) points out that there is a gap in the understanding between project teams and customers and project teams and external stakeholders. The researchers conducted a study and found that in several organisations, there is a reluctance to share the knowledge surrounding projects and their objectives and deliverables, which leads to a waste of resources, time, and finally, the delivery of the project without fulfilling the needs of the customers.
In the course of their research, Hofstede (1980a; 1980b; 1990; 1997; 1998), Trompenaars & Hampden-Turner (1997) and Hampden-Turner & Trompenaars (2000) pointed out that the understanding of the culture of other people helps to close the gap between what a customer is openly saying and what the project team understands. Also, the use of cultural dimensions helps project teams to improve their ability to understand the requirements specified by the customers caused by differences in cultures in the organisation. These authors established that project teams can achieve success in a more expedited manner if they accept that the point of view of the customers is inherently different to that of the project team. Therefore, an extra effort has to be made to understand the needs of customers and external stakeholders. Appelbaum & Steed (2005) state that it is critical to understand specifications and needs when they are related to external stakeholders and clients, as the slightest misunderstanding could become a major hindrance for the entire project.

In this study, the findings from the main questionnaire emphasise the importance of a clear understanding of the needs and expectations of customers and external stakeholders. Although the vast majority of the questionnaire respondents were located in Mexico, the opportunity to access projects carried out between several organisations presented the prospect of understanding how several project teams, already working together in their organisations, perceived their projects and their elements, including customers, external stakeholders, project managers and team members. The empirical data gathered in this study shows that in the case of Mexico and the United Kingdom, the project teams in both countries recognised that the probabilities of a project achieving successful closure are enhanced when project teams clearly understand the needs and expectations of customers and external stakeholders, therefore validating the results of the research of Hofstede (1980a; 1980b; 1990; 1997; 1998), Eskerod & Skriver (2007), Trompenaars & Hampden-Turner (1997) and Hampden-Turner & Trompenaars (2000).

With regard to project processes and activities, several project management types were discussed in Chapter 2, such as project management by drives, by confusion and by efficiency and effectiveness. For a project to be managed by efficiency and effectiveness, it has to include a clear description of its processes and activities (Loo, 1996; Loo, 2002; Gray & Larson, 2003). The clear description of the processes involved in the project leads to a smooth transition from one phase of the project to the following
one. This transition also involves delivering what customers were expecting from the project (Shenhar & Dvir, 1996). Although the description of the processes involved in a project does not ensure project success per se, if project teams clearly understand what processes are involved, the probabilities of the project being successful increase.

In the case of the activities to be undertaken by project teams, this topic is also intertwined with the above-mentioned understanding of the expectations of customers and external stakeholders. This is because nowadays, as researchers such as Sweeney & Lee (1999), Katzy & Sung (2001) and Bennet (2004) point out, projects are more than likely to touch several different people, areas, and organisations. Also, Nidiffer & Nolan (2005) have established that projects are now being carried out in distributed locations, both geographical and technological.

In this study, the empirical data gathered in Mexico and the United Kingdom highlights the importance of projects with clearly specified processes and activities. Respondents in both countries demonstrated that in their projects, a clear description of processes and activities leads to project success. However, this does not imply that this clear description is what makes a project successful but an element which has to be present for a project to be successful.

Past experiences and mistakes are well documented. If there is a topic where all researchers in the project management field agree, it is in the documentation of experiences and mistakes. Authors such as, Krishna et al. (2004), Andersson et al. (2006), Elenkov & Fileva (2006) and Garcia & Suarez (2007) have argued that the documentation in a project not only provides a description of the events, tasks, deliverables, and processes undertaken and to be completed during the project, but also provide an historical record of the experiences of the project team during the project life cycle. This historical record becomes more important when projects of a similar nature (either in the deliverables, environment, or organisation) are to be carried out as project teams have the opportunity to review what was accomplished, and therefore, avoid or forecast any potential pitfalls which might affect the project (Williams, 2003).

In the case of the empirical data gathered during this study, it shows that project teams in the United Kingdom and Mexico acknowledged that documenting past experiences and mistakes helps projects to achieve a successful closing. Although project teams working on large projects following several project management methodologies have
long acknowledged the advantage of documenting all project stages (Shenhar & Dvir, 1996), this becomes more important when project teams actually learn from past mistakes and experiences (Engwall, 2003) and apply this knowledge for the benefit of forthcoming projects (Sutherland et al., 2006). Also, Shenhar et al. (2002) mention that project teams which learn from past mistakes also share a more open approach when dealing with uncertainty in projects.

Regarding the existence of a clear project plan, Engwall (2003) argues that although projects are linked in time and their component processes rely on the organisation, the existence of clear plans provides projects with structure, standardised operations and clear objectives. Having a clear project plan accounts as a very important factor in achieving success for project teams that answered the survey in this study. Henry et al. (2007) point out that projects with clear plans have a higher probability of being successful. In the changing environment surrounding organisations, having clear plans for projects is also a way to deal with uncertainty. Although no project can be completely uncertainty-proof, the more elements that are included in the project plan, the lower the risk factor of these elements (Kovacs & Paganelli, 2003). Projects undertaken in the organisations covered by this study are generally large-scale, due to the nature of the sectors where the organisations operate and therefore, as projects grow, they become more complex. In the case of the oil extraction sector, some of the projects involve construction or maintenance of facilities, including offshore. This is one example of projects being complex and large-scale where clear project plans are required if the project is to be successfully closed.

Each team member has a clear understanding of her/his role. According to Crawford (2000b) and Crawford & Costello (2000), when project teams understand clearly what their roles are, projects are carried out smoothly. Even though projects are carried out following project management methodologies, applying innovative approaches to achieve success is unaccountable if the project team does not know how to carry out the required tasks (Hong et al., 2004). House et al. (1997; 1999) point out that the understanding each project team member has of their assigned roles is linked to the culture of the person and the organisation. Also, Hofstede (1998) links the understanding of the tasks and roles assigned to the project teams to the dimensions developed in his research by pointing to the fact that in certain cultures, people are
straight to the point to avoid any possible misunderstandings, whereas in others, people avoid being direct.

There is systematic monitoring of the progress of the project. Knowing what is the status of the project and the level of resource expenditure is a piece of information which most project managers should know at any given time. However, in reality this information is often difficult to find or, in the best cases, known by people who are not in the frontline of the project (McDonald, 2001). Crawford & Bryce (2003) specify that in order to apply project management in a correct manner, project teams, and in addition, project managers, have to establish systems and procedures to monitor the progress of the project. In this study, project teams and project managers in both Mexico and the United Kingdom acknowledged the importance of monitoring project progress. Moreover, project team members in the sectors covered by this study identified this task as crucial for project success. Authors such as Cockburn (2003) go one step further and suggest that along with the project management methodology chosen for the project, project teams have to specify project monitoring mechanisms which run in parallel to the methodology. Bryde (2003b; 2003a) and Bryde & Robinson (2007) marry the elements of project monitoring with principles of Total Quality Management. By doing this, they ensure that projects maintain high standards of quality while being developed and, at the same time, prevent risks from arising due to lack of vigilance.

There are regular communication sessions. Communication is a key element, not only in project management but also in any other activity which involves interaction between people. In the case of projects, achieving a high level of communication between project team members, customers and stakeholders is a task which is not always easy to accomplish (Campbell & Finch, 2004). In projects involving multiple organisations, geographical locations and project teams, communication becomes paramount, as the empirical data of this research shows. Project teams in Mexico and the United Kingdom which answered the survey acknowledged the importance of holding regular communication sessions, not only between project teams, but also involving external stakeholders and customers. This is consistent with the research of Bátiz-Lazo & Wood (2003) on the topic of Mexican organisations and communication strategies. Goodwin (1993) argues that one of the tasks of the project manager is to function as a mediator between project teams and external people involved in the project by ensuring that the
proper channels of communication are used. Furthermore, Gibson (1997) identifies potential pitfalls in the establishment of communication channels which might be attributed to cultural differences between project team members, external stakeholders and customers. However, these differences have to be managed by the project manager if the project is to be successful. Finally, Zwikael et al. (2005) mention that the type of communication method used depends on the culture of the organisation where projects are being carried out, including the culture of the project team members and the culture of the customers and external stakeholders. Importantly, these cultures effectively determine what is to be communicated.

Feedback on project processes and activities is provided on a regular basis. Williams (2003) argues that in order to learn from projects and to understand what their status is, project teams have to provide and be provided with feedback from their activities and from the completion status of the processes. The author goes one step further and suggests that this feedback should be distributed beyond the limits of the project team, so other teams have the opportunity to learn from what is happening in the project reviewed. In the project teams in Mexico and the United Kingdom involved in this study, feedback on project activities and processes is highlighted as an important topic which helps project teams to understand what is happening, and, more importantly, when it is happening. Knowing these two points provides project teams with a cutting-edge advantage to achieve project success. However, Crawford & Bryce (2003) specify that although feedback is important, it is more important when the right elements are taken into account and analysed before being passed along. Along these lines, Kollveit (2007) argues that business perspectives and leadership elements have to be added to the feedback provided on project processes and activities so project team members maintain an approach which is in accordance with the organisational strategy.

Project information is open to all project team members. Although projects being developed following a project management methodology are supposed to include thorough documentation of all project activities, processes, and deliverables, the availability of this information is not often achieved (Keil & Robey, 2001). Even though the level of information each project team member possesses varies according to their role and activities, in most cases, project team members require information from other members to carry out their tasks and, if this information is not available, then the scheduled activities cannot be performed therefore delaying the project (Crawford &
Costello, 2000; Lucas, 2006). The project teams in this study acknowledged that in their projects, information regarding the project was open to all team members and that this information served the purposes of achieving project success. Furthermore, the respondents to the survey specified that they required this information to be available at all times, even after the project is closed, so other people could learn from it. This case, this topic follows the one mentioned before, namely that of the documentation of past experiences and mistakes.

9.3 People in the project

Along with the processes carried out in a project, the people working on the project are one of the most important assets in an organisation and ensuring good relationships amongst these individuals become paramount for project teams. From the results of the survey carried out during this study and the information gathered in the interviews, the most relevant topics are presented below.

Team members have a good relationship with each other. During the course of this study, the empirical data gathered demonstrated that project teams consider that maintaining good relationships amongst team members was an important factor when carrying out projects. Project managers and team members in Mexico and the United Kingdom who responded to the survey indicated that in their projects there was a good relationship between team members in the majority of occasions. Jha & Iyer (2006) argue that members of successful project teams maintain good relationships amongst them and that this cordial relationship provides the project with an extra layer of trust. Furthermore, along these lines, Turner & Müller (2005) state that project teams maintaining good relationships have a competitive advantage versus other teams. Although it seems obvious that maintaining good relationships between team members plays a key role in achieving success, Hong et al. (2004) point out that this issue is often neglected when choosing new team members and that the project manager, taking on the role of mediator and amalgamator, should ensure that all project team members share a good relationship, and always take into account the diversity of cultures surrounding the project (Gelfand et al., 2007).

The opposite side of a good relationship between team members appears when conflict arises. Conflict between team members is recognised and dealt with accordingly is a key topic answered by the respondents to the survey and was addressed by this study.
Darling & Fogliasso (1999), specify that in this era of multinational projects conflict is more likely to appear due to the diverse composition of teams and to the various cultures involved during the development of projects. They argue that conflict should be dealt with before it becomes a major problem. This does not mean that conflict is not a problem, but that it could become a liability and hinder the overall development of the project if it is not managed (Dooley et al., 2005). Furthermore, Loo (1996) points out that although managing conflicts within project teams is important, what is paramount is to understand why conflicts appear in the first place and that the causes should be reviewed to avoid conflict being repeated. Campbell & Finch (2004) state that one of the causes of conflict within team members is that cultural differences between team members lead to discrepancies in the understanding of activities, roles, and requirements, especially when teams work on multiple projects at the same time (Dooley et al., 2005). The empirical data gathered in this study shows that project team members and project managers in Mexico and the United Kingdom acknowledge that conflict between team members has to be promptly recognised and dealt with for the benefit of the project and in order to avoid conflict damaging the project.

One topic especially important when teams are carrying out projects of strategic importance is the management of power struggles and internal politics before the project implementation. According to Hofstede (1998) power struggles and politics are common in countries showing a high power distance index (such as Mexico). However, this does not mean that projects developed in other countries are free of these issues. Gallegos (2002) mentions that in the case of Latin American countries, such as Mexico and Latin American people living in other countries, dealing with politics becomes a daily task and this is translated to projects. Also, Sackmann & Phillips (2004) argue that politics impacts on how projects are managed. Project managers in Mexico assert the importance of dealing with politics before projects start as this ensures that projects will be supported even if the surrounding environment changes. Furthermore, various experienced project managers targeted by the survey mentioned that they were accustomed to dealing with politics and that they saw it as part of the project development process. However, despite this, the overall consensus was that politics and power struggles managed before project implementation increased the probability of a project achieving a successful closure.
It is important to mention that power struggles within teams are a by-product of poorly described roles and/or activities along with problems with teams understanding these roles and activities. Also, according to Litrico (2007), in the case of Mexican team members, achieving a high power level denotes a higher status and importance within the organisation. This is aligned with the findings of Trompenaars & Hampden-Turner (1997), Hofstede (1998), Triandis (2002) and House (2004) regarding national and organisational cultures. However, the correlation shown by the empirical data gathered during this study suggests that although most authors consider Latin American societies more prone to dealing with power struggles and politics, this topic is present in Anglo Saxon countries as well.

Along with project team members having a good relationship amongst themselves, another key point identified during this study was that the project manager should also maintain a good relationship with the team members. Although this topic is closely linked to that of project team members maintaining a good relationship amongst themselves, the fact that the project manager has to perform the task of mediator and facilitator in the team elevates the importance of this issue. Cowie (2003) specifies that for a project manager to achieve a higher standard in managing projects, he/she had to possess superior people skills such as influence, motivation and negotiation, but above all, diplomacy. Crawford (2005b) adds that as the visible head of the project, project managers have to set the standard in all aspects. If project managers expect team members to have good relationships, then the project manager also has to have good relationships with the team. To achieve this good relationship, project managers have to be involved in all phases of the selection process, as this is one step can help to ensure that project managers get along with team members (El-Sabaa, 2001).

The results of the study survey show that project teams in Mexico and the United Kingdom regard the relationship between project managers and project teams important for achieving project success. Furthermore, it is important to mention that the empirical data suggests that there is no significant difference between the responses of project managers from Mexico and the United Kingdom, which implies that this issue overcomes cultural and project barriers.

As organisations adopt a project management culture and projects become more complex, the importance of knowing which methodology is the more suitable for the
project at hand is just as important as choosing the right team for the project. However, once teams have been selected and the organisation has decided which project management methodology to follow, the next step is to ensure that team members are experienced in the use of the project management methodologies and tools selected. De Souza Kienbaum & Nieto (2002) argue that if project teams lack understanding of the methodology to be followed or any of its tools then the project will be impacted negatively, especially in delivery times. Czuchry & Yasin (2003) state that one of the tasks of the project manager is to ensure that team members know the basic elements of the project management methodology to perform their tasks. However, Bryde & Robinson (2007) point out that as the project is developed following the chosen methodology, project teams learn more about it and can apply newly acquired knowledge to ensure a higher quality standard for the entire project. Moreover, Crawford & Costello (2000) specify that in the case of team members lacking skills in the methodological tools, it is the project manager who has to either train the team members or develop training sessions to ensure the knowledge transfer.

There are several project management methodologies (as shown in Appendix C), each one is suitable for a different type of project and it is practically impossible to know them all in thorough detail. However, as the results from the survey suggest, projects have a higher probability of success if team members knew the project management methodology to be followed when developing the project. Furthermore, project teams in Mexico and the United Kingdom acknowledged the importance of this topic by asserting that team members are required to know the project management methodology followed in their projects, which was further supported by the comments by the experienced project managers interviewed.

9.4 Project systems

Structured projects implement systems to help project teams and organisations to cope with the tasks to be carried out and to minimise the risks that may threaten a project. The extent to which these systems cover the project and their importance has been asserted by the empirical data gathered during the survey. The most relevant findings are addressed below.

Although project management methodologies provide projects and teams with the systems and structures required to achieve project success, teams should have structural
flexibility to perform their tasks. This becomes evident when projects are halted or fail due to project teams following the methodology even if it evident that it is leading the project wayward (Williams, 1997). Project teams have to be allowed a degree of innovation which is enough to help them overcome risks but also within the limits of their decision capabilities (Sweeney & Lee, 1999). Gällstedt (2003) mentions that the perception of flexibility being allowed in team members also acts as a powerful motivator, as in this case, team members feel that they are able to make their own decisions for the benefit of the project. Furthermore, Javidan et al. (2006a) argue that cultural implications impact the perception project teams have of their tasks and of their level of decisions within a project. Project teams which responded to the survey acknowledged the importance of having flexibility within the team to perform their tasks. Moreover, this element is present across cultures as project teams in both Mexico and the United Kingdom reached the same conclusion, showing that beyond the cultural implications of flexibility within teams, this becomes an important project element for project success.

One of the elements present when teams are given flexibility is that teams have the ability organise their own work activities. Farr-Wharton (2003) states that even though project teams have to be carefully chosen, good organisational skills is one of the elements to be taken into account when team selection is taking place. The importance of organisational skills resides in the fact that the availability of the time of the project manager to perform supervision tasks is limited and therefore, the scheduling of individual activities relies on the team members (Katzy & Sung, 2001). Although the complexity of projects has increased, Nidiffer & Dolan (2005) argue that this does not necessarily impact on how project teams organise their activities, but only presents more challenges and opportunities to demonstrate individual organisational skills. Even though project team members have the opportunity to demonstrate these organisational skills, nothing could be done if the project manager does not trust the team (Appelbaum et al., 2004). Project teams in the United Kingdom who contributed to the survey of this study acknowledged that in their projects, teams were given flexibility to organise their own work activities. Hofstede (1998) argues that in cultures such as the British, people show a greater level of independence and this translates to the manner in which they conduct their work activities, requiring less supervision and showing more initiative. However, the case of the Mexican project managers interviewed during this study challenges the results of the research of Hofstede (1998) who emphasised that Mexican
team members and project managers behave in a different manner to those in Anglo-Saxon cultures and the responses to the survey point to the contrary as the project managers in Mexico expect team members to organise their own working activities and also expect project teams to perform their tasks with less supervision. In this case, the results of this study seem to contradict widely accepted theories.

One of the advantages of allowing project teams to be flexible enough to schedule their own tasks and activities is that at the same time, they learn a sense of responsibility and innovation which helps them respond immediately to changes in the external environment (Crawford & Costello, 2000). If project teams have to wait for the project manager to take action if the project environment changes, this could be translated into a potential risk because as time passes, the need for an immediate decision becomes greater (Roper & Phillips, 2007). External factors in the project environment have the capacity to derail a project because project teams have less control (Hong et al., 2004). However, if project teams have the capability to respond to changes in the project environment without considering the problem for too long, then the project benefits in several areas: first, project teams demonstrate a thorough understanding of the project and its surrounding elements (Antoniac et al., 2004) and second, the project benefits from prompt reactions (Nidiffer & Dolan, 2005). Project teams in Mexico are accustomed to changes in the environment, due to several factors, such as political and economic circumstances (Baker, 1995; Báñez-Lazo & Wood, 2001; Breceda-Lapeyre, 2002; Gilbert, 2005). Even though Trompenaars & Hampden-Turner (1997), Hofstede (1998), Javidan et al. (2006a) argue that Latin American cultures such as Mexico expect a higher level of guidance from project managers, the empirical data from the survey and the information gathered in the interviews show that teams in Mexico do respond promptly to changes in the environment of the project and that project teams regard this prompt response as highly important for project success.

Even though organisations across all industrial sectors implement projects, this does not mean that these projects are supported by the organisation strategy (Evaristo & Fenema, 1999) and ensuring that the organisational strategy provides support to all projects within the organisation requires involvement from senior managers along with successful results from past projects (Fincham, 2002). Engwall (2003) argues that projects have to be linked to the organisational context and it is within this context where projects draw support and demonstrate their usefulness to the entire organisation.
(Eskerod & Skriver, 2007). There has been a change in the strategy of the Mexican organisations featured in this study, it was not until recently that PEMEX and CFE incorporated project support within the organisational structure (Castañeda & Kessel, 2003). The experienced Mexican project managers interviewed during this study acknowledged that receiving organisational support while developing a project is a definite factor in achieving project success, as this demonstrates that projects are taken seriously and resources are available to complete projects. However, the empirical data gathered during the survey shows that this is a trait shared by project teams in the United Kingdom as well. What makes this topic paramount for project management is that it acts as a gauge to show the level of project management maturity of an organisation and therefore allows project teams to gain support from the highest levels of the organisation (Grant & Pennypacker, 2006).

9.5 Project structures

Along with project processes and systems, the people working in projects have to follow a properly defined set of structures which are put in place to drive projects to a successful closure. These structures have to be designed, agreed on and developed before starting the development of any project and have to be supported by all areas and levels of the organisation. From an analysis of the empirical data gathered by the survey and the interviews, the most relevant factors within the project support structures are now presented.

One area of the structure supporting projects bearing more importance than any other, relates to the project breakdown structures, schedules, budget and resource allocation and their clear structure and definition (Henry et al., 2007). Defining breakdown structures helps projects to diminish the potential risk if team members leave the project or in the case of any change in the environment (Lee et al., 2007). Furthermore, schedules have to be agreed upon during the definition phase of the project, regardless of the industrial sector where the organisation operates (Furumo et al., 2006). These schedules include the overall delivery of the project as well as the achievement of milestones and secondary objectives (Huchzermeier & Loch, 2001). Swift & Lawrence (2003) argue that regardless of the industrial sector and/or geographical location of the organisation, the allocation of resources has to be clearly defined. As resources and time are limited, their correct allocation and distribution helps the seamless flow of the project from one phase to another. In this study, the responses from project teams in
Mexico and the United Kingdom suggest a high positive correlation with the research of the above-mentioned authors. Furthermore, the data analysed shows that project managers in these countries regard this topic as essential to achieve project success.

The knowledge of project management methodologies and tools possessed by project teams was discussed in the “people in the project” section of this Chapter. However, the importance of the use of project management methodologies and tools for project success forms part of the structures which have to be set in place before the start of the development of any project because it impacts the entire organisation (Bhaskaran & Sukumaran, 2007). Authors such as Crawford & Costello (2000), Coram & Burnes (2001) and Dooley et al. (2005) argue that organisations have to select a project management methodology which will then be followed across all areas within the organisation and this decision is supported by the cost of implementing the methodology, the time which has to be spent in training project teams, and in some cases, certification requirements. Furthermore, it is important to mention that once the methodology has been agreed upon and projects start to be developed success will not be achieved automatically but over time as the organisation follows a curve as the organisation adapts itself to the use of the project management methodology (Engwall, 2003). Project managers in the United Kingdom who responded to the survey acknowledged that the use of project management methodologies and tools is a key element for project success. Although project management is a discipline which has been in place in the United Kingdom for a greater period of time than Mexico (as discussed in Chapter 1), the empirical data gathered from the Mexican respondents to the survey and the experienced project managers interviewed suggest that the geographical location and the cultural surroundings do not diminish the importance of project management methodologies for project success.

As projects become more complex and the senior managers of the organisation give support to project teams, the driving force behind projects could be led astray and start to follow personal emotions or goals rather than the objectives specified before starting the project (Rees & Porter, 1998; Arnaboldi et al., 2004). In the case of projects in Mexican governmental organisations, project teams often attempt to ingratiate themselves with senior managers by pursuing what the managers consider more appropriate rather than completing the project to its original specifications (Petrick & Rinefort, 2006). In the past, both PEMEX and CFE have shown a cyclical pattern of
projects following the period of appointment of their corporate directors but since the late 1990s this pattern has trended towards a long-term strategic plan (Carreón-Rodriguez et al., 2003; Puyana, 2006). However, Hofstede (1998) notes that the attitude of pleasing senior managers by following their dictates is an inherent trait of Latin American cultures including the Mexican.

Despite the above-mentioned factors, the empirical data gathered during this study points towards a different trend, as project teams in Mexico and in the United Kingdom recognised that their projects are generally driven by objectives and business factors rather than by emotions. Furthermore, the experienced Mexican project managers who were interviewed acknowledged that when a project is driven by business factors and objectives its probabilities of achieving success are higher.

Henry et al. (2007) argue that when a project contains clear milestones, the development of the project can be measured more accurately. This assumption is based on the research of Whittaker (1999) who stated that projects lacking clear milestones and deliverables have a higher failure ratio. Also, Aladvani (2002) points out that when milestones are present, apart from having a clear picture of the progress of the project, project managers also have an accurate description of the resources spent, time consumed and team productivity. However, Zweikael et al. (2005) state that the measurement of these last two elements depends to a great extent on the culture of the organisation and on the culture of the people where the organisation is located. In this study, the empirical data suggests that there is a correlation between the project teams in Mexico and those in the United Kingdom as the respondents in both countries acknowledged that their projects generally contain clear milestones. Furthermore, the interviewees asserted that project plans containing clear milestones are a key element to be considered if the project is to be successful.

As specified in section 9.3, one of the key elements under the “people in the project” area relates to the project team being experienced in the use of project management methodologies and tools. However, understanding project management methodologies and tools is an element which forms part of the project structures, as training and accreditation affect the entire organisation and all projects carried out (Antoniace et al., 2004). Crawford (2005b) states that there is an increase in the application of project management standards across organisations and that if project managers are to be
considered competent they have to understand all the elements of the project management methodology followed in the organisation. Although Crawford (2005b) demonstrates the validity of this point, the fact that there are several project management methodologies in the workplace makes this understanding a project itself. Furthermore, Granell (2000) specifies that the strategy of the organisation is what drives the methodologies chosen for project management. Achieving a thorough understanding of the project management methodology to be used to develop projects in the organisation requires that the project manager, in his/her role of project leader, knows the fine detail of the methodology and moreover, has the ability to transfer this knowledge to other team members (Loo, 1996). This transfer of knowledge works on two fronts: first, it ensures that the project manager knows exactly the level of knowledge of each team member and, second, that the team members acknowledge that the project manager understands the project management methodology (Turner & Müller, 2005). Respondents to the survey in the United Kingdom acknowledged that in their organisations, project teams and project managers have a good understanding of project management methodologies and tools. Moreover, project teams and managers shared this view along with project teams and managers in Mexico as evidenced by the experienced project managers interviewed.

An element of understanding the project management methodology is that each team member should know exactly the responsibilities attached to the assigned role (Roper & Phillips, 2007). Authors such as Segrest et al. (2003) specify that in countries such as Mexico, project team members often fail to fully understand what responsibilities are attached to their roles because culturally, people are told what to do. However, the results of the empirical data gathered in this study point in the opposite direction, because project team members in Mexico acknowledged that in their organisations, team members generally know what responsibilities are attached to their roles. Furthermore, these findings show a strong correlation with the responses from project team members in the United Kingdom. Although Nidiffer & Dolan (2005) point out that the understanding of roles is an investment in time, the reality is that this investment should be managed and protected by the project manager as one his/her tasks is to select and train project teams before the project starts (Evaristo, 2003).

One of the areas which has to be thoroughly reviewed before a project starts is the reason and justification to start the project. Engwall (2003) argues that if feasibility
studies are carried out before a project starts, its justification and support become easier. Moreover, if the reasons for the project to be developed in the first instance are researched and presented, it helps in the estimation of costs, resources and time (Whittaker, 1999). It is important to mention that although feasibility studies help projects to achieve more accurate planning, they also help customers to have a clearer view of what they require the project to deliver (Hong et al., 2004). When project managers complete feasibility studies, they also achieve a greater understanding of the elements contained in the project and, more importantly, they understand the reasons for carrying out the project in the first place (Crawford, 2005a). The experienced project managers interviewed during the course of this study acknowledged that their projects were required to have feasibility studies before they were developed. Also, they mentioned that they considered a feasibility study as one of the key elements to be present for a project to be successful. Moreover, the respondents to the survey also acknowledged the importance of this element for project success, both in Mexico and the United Kingdom.

9.6 Project environment
The environment surrounding the project is one of the areas where potential risks are higher, because there are more variables which cannot be controlled by the project team. Crawford (2000b) and Hong et al. (2004) argue that although organisations implementing projects attempt to maintain tight control in the organisational environment, the reality is that there are a number of variables which escape organisational control. Due to these reasons, project managers and project teams have to pay special attention to the project environment. The most relevant elements from the survey data and the interviews are now presented.

The first element that Crawford (2000b) and Hong et al. (2004) mention as crucial in a project is that external changes in the project environment should be constantly monitored. In the economic environment of today, change is becoming the rule rather than the exception and this change starts in the external environment of the project (Ives, 2005). Lechner et al. (2005) argue that the risk of external drawbacks impacting projects is higher in projects where close relationships with external stakeholders are held because, as mentioned above, there are more variables to be monitored. However, the project team has to ensure that these variables are measured, controlled and, should problems arise, managed to ensure that the project is put back on track (Czuchry &
Yasin, 2003; Lechler et al., 2005). However, project managers have to moderate the resources designated to monitor the external environment of the project because it could become a hindrance for the entire project as resources would be diverted from the core tasks of the project (Crawford, 2005b). The Mexican and United Kingdom project managers in this study acknowledged that in their projects, there is always close monitoring of the external environment to minimise the risk of problems impacting on the project. Furthermore, the experienced Mexican project managers interviewed agreed that close monitoring of the external environment is also a key component of a successful project. The empirical data from this study shows a positive correlation with the theories of the above-mentioned researchers.

The relationship between team members has been discussed in previous sections of this Chapter. However, these relationships can be classified as “internal” because they are developed within the project (Turner & Müller, 2005). The project managers relationships with external stakeholders, senior managers and customers are some of the elements of the project environment which can impact a project both negatively or positively (Jha & Iyer, 2006). Dvir et al. (2006) argue that these relationships have a high degree of importance because they impact the project from several angles at once. First, customers are the reason why the project is being developed in the first place and project managers have to ensure that their needs and requirements are met, while at the same time they have to maintain the project within achievable limits. Second, senior managers provide support for projects and have the power to cancel the project, transfer team members, or divert resources. Therefore, project managers have to keep a good relationship with senior managers to ensure a steady influx of resources for the project. Finally, external stakeholders play an important role because in some cases, they supply the project with elements necessary for correct development. The project manager keeps a positive relationship with customers. Crawford (1999; 2000a) states that competent project managers know how to develop and maintain good relationships with all people related to the project. However, Jha & Iyer (2006) specify that these relationships should also be nurtured and measured, because project requirements change with time and in the case of problems arising, support from different people is required to eliminate risks.

Although project managers have to act as leaders, mediators, and supervisors, one of the skills that every project manager should possess is that of diplomacy because creating
and developing relationships with everyone linked to the project requires tact and attention to detail. The empirical data gathered during this study validates this statement as respondents in both Mexico and the United Kingdom acknowledged that project managers in their organisations generally maintain good relationships with customers, external stakeholders, and senior managers. Furthermore, the interviews with experienced project managers in Mexico provided this study with data suggesting that a good relationship with customers, senior managers and external stakeholders is a key element of successful projects.

Even though project managers are the “face” of the projects within the organisation and to the external stakeholders (El-Sabaa, 2001), the reality is that team members are the ones maintaining more contact with the people related to the project, therefore making relationships with those people highly important (Jiang et al., 2002). Nidiffer & Dolan (2005) state that recently, more projects are following a trend of developing in distributed locations, thus enhancing the level of relationships project teams have to develop. These relationships become more important as project team members might not have met face-to-face and therefore, their relationship (via telephone, email, or videoconference) is based solely on trust. Authors such as Evaristo (2003), Farr-Wharton (2003) and Lee et al. (2007) point out the importance of trust in the relationship between teams, customers and external stakeholders. These authors argue that project teams slowly built up trust by showing their competence and therefore, this trust makes the activities of teams easier to perform. In the case of Mexico and the United Kingdom, the respondents to the survey acknowledged that, along with the project manager, project teams have to maintain good relationships with external stakeholders and customers for the overall benefit of the project. Furthermore, the data shows a strong positive correlation between the relationship of teams and project managers with customers, external stakeholders and senior managers with project success.

Ensuring that there is a good relationship between project teams and senior managers is one important element to safeguarding support for the project. Also, a good relationship with senior managers can prove useful in guaranteeing that projects are provided with sufficient resources (Jugdev & Mathur, 2006). As projects grow more complex, achieving project support becomes a difficult task, as senior managers often try to protect themselves by disassociating themselves from a project they perceive as a
potential risk (Crawford, 2005b). Project managers and team members have to demonstrate that they are capable of managing and completing the project and gaining the trust of the senior managers. Moreover, by gaining the trust of senior managers, project team members enhance the probabilities of their projects gaining support and resources which otherwise would have to be contested or divided amongst several projects. The experienced project managers interviewed confirmed the importance of achieving support from senior managers for their projects. Also, they acknowledged that this support also provided the project with resources, therefore enhancing the probabilities of project success.

9.7 Success factors in projects

From the elements discussed above and according to the responses provided by the respondents to the survey sample and the interviews it is possible to determine the success factors when carrying out a project.

In Chapter 8, factors impacting projects both negatively and positively were discussed; based on the empirical data gathered in the survey and the interviews. On the one hand we have factors negatively impacting a project and leading it to failure, such as a flawed conceptualisation phase (Baker et al., 1988) and lack of detail in the statement of project activities and processes (Elenkov & Fileva, 2006). This inexorably leads to the project going over the original budget and the senior management interfering in the decision-making process (Mínarro-Viseras et al., 2005). On the other hand there are the factors positively impacting the project which, if not leading it to success per se, contribute to the project achieving the desired objectives within the specified schedule and budget. Having a clear project plan (Newell et al., 2004), team working, a clear understanding of the role of the members of the team on the project (Appelbaum & Steed, 2005) and monitoring changes in the external environment on continuous basis (Czuchry & Yasin, 2003) are examples of positive factors.

Therefore, after analysing the data provided by the respondents, measuring the responses they provided for each item of the questionnaire within the scale provided, and verifying these responses with experienced project managers in Mexico, the following list of key factors was developed in order to answer the research question: *What are the key success factors for a project being carried out in a multicultural environment in Mexico?*
1. Feasibility studies have to be conducted in order to prove the viability of the project.

2. Projects must have a clear project plan and contain clear milestones.

3. The expectations of the customers and external stakeholders have to be clearly defined.

4. Power struggles and politics must be dealt with before the project is implemented.

5. Budget, breakdown structures, start and finish dates and allocation of resources have to be clearly defined from the conceptualisation phase of the project.

6. Processes and activities have to be comprehensively specified.

7. Project progress must be systematically monitored.

8. Project management methodologies must be used and understood in order to control and manage all phases of the project.

9. Projects should be driven by business facts and objectives rather than by emotions.

10. Regular communication sessions should be held.

11. Information about the project has to be available to all team members.

12. External changes in the project environment have to be closely monitored and, in case of any changes impacting the project, teams must respond immediately to them.

13. Feedback must be provided on regular basis.

14. Past experiences and mistakes have to be well documented.

15. Team members must have a clear understanding of their role in the project and know their responsibilities.
16. The relationship of the project manager with customers, external stakeholders, team members and senior management has to be a cordial one.

17. The relationship of the team members with customers, external stakeholders and other team members must be a good one.

18. If conflicts should arise, they have to be recognised and dealt with promptly.

19. Teams should have structural flexibility to perform their tasks and to organise their own work activities always following the objectives of the project.

20. Projects must have support from the senior management and be provided with sufficient resources.

These factors could be used as a checklist when a project is being carried out, providing teams and project managers with a set of elements to consider before the project starts. By considering these elements, it should be possible to carry out projects in a smoother manner, avoiding problems which might otherwise arise due to a lack of understanding or short sightedness by any of the stakeholders involved with the project. This would allow the achievement of the project goals and objectives within the specified time frame and specified budget while complying with the customer specifications and therefore, help the project to achieve success.

9.8 Conclusion

The field of project management is ever changing and has to adapt to the changing nature of projects and the organisations within which these projects are undertaken. Project teams have to understand that, if they want their projects to be successful, they may need to take into account topics which appear to be unrelated to the overall project. One of these topics is culture.

The empirical data gathered in this study suggests that projects in Mexico and the United Kingdom, if seemingly unrelated by their geographical location, share several characteristics. Project managers and team members in both countries shared similar views regarding how their projects are managed and/or achieve success.
The literature review carried out during this study created the foundation for the design of the research instruments and subsequent discussion of the findings analysed. In some cases, widely accepted theories have been challenged by the empirical data from this study. One of these cases is illustrated by the research of Trompenaars & Hampden-Turner (1997), placing Mexican culture close to the British culture as shown on Figure 4.6 in Chapter 4. Although the empirical data shows that on several topics project managers in Mexico and the United Kingdom share similar views regarding projects, such as the allocation of rewards being influenced by team results and the level of relationships between all the stakeholders, while on other topics their views are diametrically opposed, such as the level of tolerance to conflicts within the team the management of politics and power struggles. Furthermore, this study challenges stereotypes relating to Latin American cultures, specifically the Mexican culture, and projects carried out within governmental organisations.

It is important to note that although project teams all over the world aim to achieve successful closure to their projects, the ever-changing environment can threaten projects and increases the risks regarding the outcome of projects. Moreover, project managers should be aware that they need to ensure that all the individuals involved in a project understand what the requirements, needs and resources involved in the project are and how these elements are intertwined to achieve the final goal: a successful project.
Chapter 10 Contributions, conclusions, limitations and recommendations

10.1 Introduction

Organisations that have not traditionally been involved in projects are increasingly turning to project management without fully understanding its underlying philosophy, principles and practices. This “project management race” in all types of organisations results in situations where many organisations are faced with the dilemma of not finishing the project as well as they anticipated or having outcomes different to those expected. Projects fail and it costs the organisation money and often the causes of these failures remain unknown or in the best cases, partially explained.

As the research of Cleland (1988) and Gray (2001) suggest, one of the causes of project failure is that the culture of the organisations where the projects are being carried out does not support projects. In line with this statement, the research of Athanassiou et al. (2002), Bátiz-Lazo (2001; 2003), Egri et al. (2000), Granell (2000), Snyder et al. (1996), Stephens & Greer (1995), Swift & Lawrence (2003) and Zabludovsky (2001) show the implications of the Mexican culture in project management. It is important to note that the literature and research conducted in this field is limited and focuses mainly on selected aspects of project management or culture, hence the need for research to more closely link together project management and cultural research. Due to these reasons, the aim of this study (as stated in Chapter 6) was: “to determine and assess the factors of Mexican culture impacting projects carried out by multinational companies working along with governmental entities in Mexico.”

In attempting to meet the aim of this study, secondary research objectives were devised in order to guide the research process. The next sections provide a summary of the contributions of the present study (section 10.2), the answers to the secondary research objectives (section 10.3), the answers to the aim of the study (section 10.4), the conclusions in relation to the aim of the study (section 10.5), the limitations of the present study (section 10.6) and recommendations for further research (section 10.7).

10.2 Contributions of the present study

A major contribution to knowledge of the present study was to investigate the impact of culture on project management in the oil and gas and power generation industries in
Mexico, leading to the creation of set of factors which can indicate that a project is heading towards a successful closure.

While there has been research regarding the interaction of culture in the project management field, these studies are mostly focused on the construction, engineering, finance or information technology sectors (Morris & Hough, 1987; Cleland, 1991; Ford & McLaughlin, 1992; Cleland, 1994; Wateridge, 1995; Kliem et al., 1997; Wateridge, 1998; Barry & Pascale, 1999), however, they do not focus specifically on the oil and gas and power generation sectors. Thus, this research is a reference point for organisations evaluating investing in Mexico as it assesses the importance of governmental organisations in Mexico, the current legal framework of their operations, and the importance of understanding Mexican culture while carrying out projects in Mexico. This is particularly relevant for projects carried out jointly by the two governmental organisations in Mexico in charge of oil and gas extraction and power generation (PEMEX and CFE, respectively).

Moreover, the focus of this study on PEMEX and CFE is also a primer. There have been studies focusing either on PEMEX or the CFE and their projects (Eibenschutz et al., 1983; Baker, 1995; Baker & Ramirez, 2002; Farr-Wharton, 2003; Gámez-Treviño & Piña-Monarrez, 2005), financial performance (Altuna Gabilondo, 2000), organisation and management (Bauer & Quintanilla, 2000; Castañeda & Kessel, 2003) and so on, however, there are no studies related to the impact of culture on those organisations and their projects or that assess the impact of culture on the projects carried out in these organisations. In order to carry out this assessment, this study required the gathering of data from project managers and project team members from the oil and gas and power generation sectors in Mexico and the United Kingdom, which by itself is a contribution, as it is the first attempt at this type of data collection.

Based on the previous statements, this study has identified significant differences in the interaction between projects and culture in Mexico and the United Kingdom which have not been addressed in previous research, such as the importance given by Mexican project managers to the management of conflict and politics and the increased awareness of project management methodologies in Mexican governmental organisations, as well as finding data that illustrate significant differences from accepted theoretical outcomes (Hofstede, 1980a; Hofstede, 1980b; Trompenaars, 1984; Hofstede,
1997; Trompenaars & Hampden-Turner, 1997), such as the acknowledgement of the relevance of taking risks and accepting responsibility in projects by Mexican project managers and team members. In the same vein, this study has identified and concurred with issues found in previous research, such as the causes of project success and failure and the role of the project manager as a factor in successful projects. As this research provides a set of key factors to be considered when carrying out a project, the questionnaire survey assessed the manner in which individuals in Mexico view projects. Furthermore, the questionnaire survey developed in this study can be used to identify how individuals in different organisations perceive projects and the results of the survey can be used to steer the project to successful completion.

Another contribution of this study is that of creating a starting point for further research in the project management field in Mexico. Until now, the research in this field has been focused on project management as an add-on in organisations, however, this research has provided a basis to make project management a driving force to take projects in the oil and gas and power generation sectors in Mexico to a successful completion.

Furthermore, as a result of the development of the questionnaires, this study has developed a novel methodology to assess the impact of culture on project management, which could be used in projects carried out around the world. This methodology could then be extrapolated to fit any type of project, not just those in the oil and gas or power generation sectors. Also, by identifying what are the factors that lead to project success, as well as their link to the culture, the methodology links key aspects of management with culture by using project management as a basis.

By assessing the impact of the Mexican culture on projects carried out by Mexican governmental entities working along with privately run multinational organisations, this study identified common areas between these organisations and therefore, steering groups could be established in these organisations to ensure the successful completion of projects.

Finally, the body of knowledge on project management and organisational culture has been expanded as a result of the findings of this particular research and serves as a valuable contribution to the theory and research in the fields of Project Management and Project Management Culture.
10.3 Conclusions in relation to the research objectives

As stated in the Methodology (chapter 6), this research study had the purpose of achieving objectives providing new topics to general knowledge. By achieving these objectives, this study proved its relevance as well as the importance of the topics addressed in the ambit of project management and general knowledge. These objectives were addressed in the methodology chapter and the conclusions to each objective are addressed below:

a) To examine the role of Mexican culture as a key factor when managing projects.

The first objective of this study was related to the importance of the Mexican culture as a factor when managing projects. From the empirical data gathered in the survey and the interviews and comparing the results of the survey in Mexico with those provided from respondents in the United Kingdom, it is possible to gather that the Mexican culture plays an important part in ensuring that projects that are carried out in Mexico are finished within the original time and budget. Moreover, as the project managers interviewed acknowledged, project teams who know what the elements of the Mexican culture, such as the behaviour of the team members, the importance given to family ties and the seemingly paternalistic relationship between project manager and team members, have a definite advantage when carrying out projects which contrast with the cultural elements from the United Kingdom, such as the professional level of all relationships within the workplace, the attitude towards accountability and the importance given to the establishment of cordial (if distant) relationships with other stakeholders. These comments as well as the information from the surveys and the literature review led the researcher to fully understand that the Mexican culture is a key factor when managing projects being carried out in Mexico.

Project managers and project team members carrying out projects in Mexico have to be aware of the challenges the Mexican culture presents and when these projects are carried out by organisations with employees from different cultural backgrounds, understanding the Mexican culture becomes an issue of the outmost importance. This study has shown that in the case of experienced project managers in Mexico, they acknowledged the importance of understanding the Mexican culture in projects carried out in Mexico and that they regard it as an element which can ensure the successful closure of a project.
After these arguments, it is possible to say that this objective was completely achieved, as this study presents a set of empirical data which helps to understand the role of the Mexican culture as a key factor when managing projects.

b) To identify the extent to which the cultural factor could prove to be a competitive advantage for a multi-national organisation working along with any Mexican Governmental entity.

During the course of this study, the researcher had the opportunity of interacting with several people from the two Mexican organisations focus of this study: PEMEX and the CFE. This interaction provided the researcher with the ability to understand what types of projects were being carried out within the organisations as well as the requirements for such projects. Although the understanding of the Mexican culture is not an element required in any business plan or initial specifications document, the organisations involved in projects being carried out for PEMEX or CFE are organisations which have been undertaking projects in Mexico for long time, or the team members and project managers directly involved in these projects are Mexican or have a good understanding of the Mexican culture.

As the literature shows, understanding any given culture involves having knowledge about several different elements, some of which are more abstract than others, and, as the information provided by the project managers interviewed shows, in the case of projects carried out in Mexico, project managers and project teams with a deep understanding of the Mexican culture are considered more successful or, in the eyes of the experienced project managers who where interviewed, have a higher opportunity of success due to their inherent understanding of the Mexican culture. This does not mean that people who are not Mexicans are doomed to never achieving success in projects carried out in PEMEX or CFE but that these people have to show a thorough understanding of the elements composing the Mexican culture, such as the close relationship between team members, the importance of family ties and the syncretism behind Mexican people. Therefore, understanding the Mexican culture is a competitive advantage for a multinational company carrying out projects in Mexico for PEMEX and CFE.

In this subject, it is possible to say that this study successfully achieved this objective, as with the empirical data gathered by the survey, the interviews and the literature
review the researcher was able to demonstrate that the understanding of Mexican culture provides organisations with a competitive advantage when carrying out projects in Mexico for PEMEX and the CFE, by measuring the level of success achieved by the project managers and team members in Mexico. This measurement allowed the researcher to understand how Mexican project managers, who understand the cultural elements and traits of the team members and stakeholders linked to the project, had an advantage when managing projects.

c) To identify the nature of the best practices when managing multi-cultural teams/projects.

After analysing the empirical data gathered by the surveys, the information provided by the experienced project managers interviewed and the literature, the researcher was able to identify what the best practices are when managing projects. More importantly, the information provided by the experienced project managers interviewed as well as the empirical data gathered by the survey provided important insights into how multi-cultural teams carry out projects. These insights allowed the researcher to fully understand what the best practices are when carrying out projects and therefore, increasing the probabilities of projects achieving a successful closure.

Although PEMEX and CFE operate only in Mexico (PEMEX and CFE do not have operations of oil extraction or power generation outside Mexico), organisations carrying out projects for these two organisations, as well as their employees, come from several different countries and this adds the multicultural aspect to projects and teams.

Regarding this objective, the researcher is confident that it was successfully achieved, as the set of success factors presented in Chapter 9 comprise the best practices to be followed when managing multicultural projects and teams.

After these arguments, it is possible to suggest that this study successfully achieved the three objectives set during the design phase of the research. Although achieving these objectives required an approach which took the research to develop surveys and carry out an extensive literature review, the fact is that by ensuring that these objectives were achieved is that the researcher ensured that this study contributed to general knowledge by presenting information relevant for the field of project management.
10.4 Conclusions in relation to the research questions

Throughout the literature study (Chapters 2, 3, 4 and 5) and the application and analysis of the data gathered by the main questionnaire (Chapters 7 and 8) the objectives of the research were met. A research methodology was justified and developed (Chapter 6) in order to answer these research questions.

1. How do cultural issues impact projects, specifically how does the Mexican culture impact projects being carried out between multinational organisations (i.e. BP, Royal Dutch Shell, Repsol-YPF, etc.) and Mexican governmental entities such as Petróleos Mexicanos (PEMEX) and the Comisión Federal de Electricidad (CFE)?

The literature (see Chapter 2) indicates that culture contributes towards business success and Mexican culture also provides a set of constraints and advantages to be considered when managing projects in Mexico (Stephens & Greer, 1995; Egri et al., 2000; Báñez-Lazo & Wood, 2001; Zabludovsky, 2001; Athanassiou et al., 2002).

The Mexican culture presents dual attributes when applied to project management. On the one hand, it is able to contribute towards business success, and therefore project success, as it involves a closer personal relationship amongst all the members of the team as well as the relationship of these individuals with all other relevant stakeholders. On the other hand, the Mexican culture hinders the development of projects as it also involves dealing with a deeply rooted bureaucracy (Stephens & Greer, 1995; Egri et al., 2000; Báñez-Lazo & Wood, 2001; Zabludovsky, 2001; Athanassiou et al., 2002). Even though the analysis of the data gathered shows that a small percentage of the projects in Mexico were unsuccessful, the importance of this finding resides in the fact that it contradicts the stereotype that Mexicans do not get things done and that the Mexican bureaucratic apparatus slows things down to a halt.

The measurement of work-based values and corporate culture is central to business and project success. If progress of projects cannot be measured then the impact of Mexican culture in multinational projects cannot be fully assessed. Therefore, the measurement of the strong and weak elements of project management culture in a particular organisation could enable the organisation to align itself to match the Mexican culture and allow the organisation to reach its objectives without the concern that they might clash with the culture of its employees.
2. *How can a multi-cultural team provide a competitive advantage for a project with a multi-cultural context which is being carried out within a public/private framework?*

The literature shows the advantages of multicultural teams and the way these teams impact multicultural projects (Cleland, 1996; Loo, 1996; Jaffe & Scott, 1998; Lipnack & Stamps, 2000; Mead, 2001; Farr-Wharton, 2003; Fisher & Härtel, 2003; Appelbaum & Steed, 2005). After analysing the data, it was found that organisations where multicultural teams are present show a higher ratio of project success. The literature indicates that public organisations have the ability to develop methodologies to manage and control projects and these methodologies involve the careful selection of team members and a clear specification of roles and activities. These statements can be supported by the data analysed. Moreover, while some of the empirical data gathered in this study verifies widely-accepted theories, some of these theories could be challenged which suggests that further research is necessary. The results of the analysis in this study show that there are strong differences between Mexico and the United Kingdom, enough to challenge the cultural proximity theory as stated by Trompenaars & Hampden-Turner (1997).

These differences impact how projects are carried out and how project managers and team members perceive their projects and their relationships. Culture within organisations shapes the way people perceive themselves and their relationships with other people and at the same time, it allows people to face challenges and overcome problems in ways which they might not have originally thought possible. Furthermore, in the case of the project managers in Mexico, having multicultural teams working in projects appears to be a definite advantage.

3. *What are the key success factors for a project being carried out in a multicultural environment in Mexico?*

Knowing what success factors drive a project carried out in a multicultural environment is paramount. The research of Atkinson (1999), Clarke (1999), Cooke-Davies (2002), Gray (2001) and Shenhar et al. (2002) reviewed in Chapter 2, provides information about which key factors lead to project success and also how these key factors are linked to organisations, projects and culture.
The analysis of the data gathered in this study determined the key success factors for projects on which the respondents were working. The data also provided an insight into how these factors linked with the culture of the location where the respondents were carrying out their projects.

Although this study is limited to selected organisations in Mexico and the United Kingdom, the results of the analysis are aligned with those of the studies mentioned earlier. Moreover, the empirical data confirms the success and failure factors mentioned in Chapter 2 (Pinto & Slevin, 1988; Mendonca & Kanungo, 1996; Graham & Englund, 1997; Dvir et al., 1998; Atkinson, 1999; Gray, 2001; Cooke-Davies, 2002; Cowie, 2003; Crawford & Bryce, 2003). These success factors are listed in page 295.

The analysis of the data in Chapter 8, as well as the feedback provided during the interviews allowed the researcher to create a list of project success factors which are underpinned by the answers to the survey and verified by the project management experts. This list, although not exhaustive, presents the factors regarded as most important to project managers and project team members for achieving successful completion of their projects (see page 295).

10.5 Conclusions in relation to the aim of the study

In order to achieve the aim of this study, namely “to determine and assess the factors of Mexican culture impacting projects carried out by multinational companies working along with governmental entities in Mexico”, the impact of the Mexican culture on projects carried out by governmental entities and privately run multinational organisations has been explored and assessed.

The literature reviewed (Chapters 2, 3, 4 and 5), the information gathered by the main questionnaire (see Appendix F), the information gathered by the interviews (see Appendix I), the subsequent analysis of the data gathered and the methodology and research process described in Chapter 6 have enabled the researcher to achieve the aim of this study.

The results from the questionnaire (see Chapters 7 and 8) indicate that the reliability of the items composing the questionnaire is acceptable and the inter-correlation of the scale shows that the factors are inter-correlated. Also, the analysis of the data also indicates that the questionnaire achieved its objective of assessing the factors impacting
projects as well as measuring how culture (in this case, Mexican culture) impacts projects. Even though individuals in Mexico and the United Kingdom answered the questionnaire in order to set a baseline, the interviews were conducted with senior project managers from Mexico and the United Kingdom; however, only the Mexican interviewees provided important insights related to the impact of Mexican culture on projects, even though the interviewees from both countries gave the researcher valued insights regarding project management. As projects share the same basic principles in the way they are created, implemented and managed, this study suggests that the culture of the people working in these projects (and that of the organisations carrying out the projects) does impact the way projects are perceived, managed and are carried out as a whole from their conception to their finalisation.

Finally, it is important to keep in mind that the individuals working in a project are the ones who provide it with cultural awareness and at the same time, follow the guidelines provided by a project management methodology. To fulfil the key success factors encountered for projects being carried out by Mexican governmental entities working along with private run multinational organisations it is clear that multicultural teams do have a positive impact on the way projects are carried out.

10.6 Limitations of the present study

This study focused specifically on two of the largest organisations owned by the Mexican government, namely Petróleos Mexicanos (PEMEX, Mexican Petroleum) and Comisión Nacional de Electricidad (CFE, National Electricity Commission). It also comprised a set of private multinational companies but always within the limitations of being organisations working alongside with the Mexican governmental entities.

First, this study was constrained by the physical location of the researcher. While the focus of the study was Mexican governmental organisations the researcher was located primarily in the United Kingdom. Access to data and information was a limitation because during the observation phase of the study the researcher was unable to take notes or to tape recordings of the various meetings he attended, due to the confidential nature of the projects. Moreover, the size of the sample in the United Kingdom presented a further limitation. Although the researcher aimed for a larger sample, responses relied on the goodwill of people. This was not forthcoming in the United Kingdom.
Second, the study is constrained by the focus of the research, namely the Mexican governmental organisations responsible for oil and gas production and power generation (PEMEX and CFE respectively). Even though some generalisations and extrapolations can be made from the outcomes of this study as it relates to national culture, the reality is that this focus on these organisations is a limitation. Due to the nature of the study and the sample, the findings cannot be generalised to all organisations that behave or carry out projects following the same approach. These findings are mainly applicable in the country where the population reflects the sample used for carrying out this study, namely Mexico.

A potential limitation of this study is the fact that the native language of the researcher is Spanish. The vast majority of the literature consulted was in English, and even though the researcher is competent in the use of English, the fact that it is not his first language did present challenges, especially when conducting interviews with English native speakers.

Another limitation of this study is the limited size of the sample from the United Kingdom. The researcher acknowledges that the size of the sample and the number of respondents are a potential limitation to the validity of the research. However, as stated earlier in Chapter 6, the non-response bias has been accounted for and the results from the responses from the United Kingdom are used as a comparison only. The researcher also acknowledges that if a sample of greater size is achieved, the comparison between Mexico and the United Kingdom could show further discrepancies/similarities.

10.7 Recommendations for future research

The researcher acknowledges that even in its breadth, this study has identified the need for further studies in order to enhance the knowledge in the areas of project management, project management culture and its related fields.

1. Expand the size of the UK sample to enable more accurate statistical comparisons to be undertaken between Mexican and UK organisations. More importantly, expanding the size of the sample from the UK will allow reducing the non-response bias present in this study.

2. Test the impact on the key factors of success if the legal framework supporting the two Mexican governmental entities used for this study, namely PEMEX and CFE,
changes in the future. The researcher acknowledges that the answers provided by the respondents of the main questionnaire and the project managers interviewed in Mexico were provided under the assumption that the current legal framework of PEMEX and CFE would remain unchanged and, in the case of a change in this legal framework (such as a more de-centralised approach, or even allowing a private – public partnership between PEMEX and CFE with private organisations), the project management culture and the project culture in the organisations could change, therefore impacting the responses to the questionnaires and the interviews.

3. Measure the impact of Mexican culture in projects carried out only in Mexican organisations in other industrial sectors, such as financial markets. As this study was carried out covering only the oil and gas extraction and power generation sectors, a potential field of study is to encompass different sectors in Mexico.

4. The key success factors identified in this research could be verified in other industrial sectors in Mexico. As previously mentioned, the responses gathered during this study were collected from team members and project managers from the oil and gas extraction and power generation sectors, and are intrinsically linked to the nature of such sectors. The researcher acknowledges that such responses can differ if extracted from respondents in different industrial sectors.

5. Expand this research to other Latin American countries sharing the same underlying cultural principles as Mexico (e.g. Colombia and Venezuela).

6. The research process developed in this study research could be enhanced and used in studies in other fields such as banking, retail and telecommunications.

7. Assess the interdependence of the organisations working in a joint project and measuring the impact of this interdependence in the success rate of the projects. By doing this, other researchers can measure if the conclusions reached in this study are particular only to the relationships between PEMEX and the companies working with it or CFE and the companies working in its projects.
Appendix A, PEMEX Organisational chart

This Appendix shows the organisational chart of Petróleos Mexicanos (PEMEX). For the effects of simplification, instead of presenting the complete organisational chart of PEMEX, only the area where the survey was applied and its parent areas are displayed.
Appendix B, CFE Organisational chart

This Appendix shows the organisational chart of Comisión Federal de Electricidad (CFE). For the effects of simplification, instead of presenting the complete organisational chart of CFE, only the area where the survey was applied and its parent areas are displayed.
## Appendix C, Project management methodologies

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<th>Methodology</th>
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<td>AIS</td>
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<td>Administrative Information System</td>
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<td>BPMN</td>
<td>Department of Defence, US</td>
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<td>Bates Project Management Methodology</td>
<td>Government</td>
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<td>CALS</td>
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<td>Continuous Acquisition Life-cycle System</td>
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<td>Customer Ownership System Teamwork</td>
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<td>5 STEPS</td>
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<td>Steps To Ensure Project Success</td>
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Appendix D, Preliminary questionnaire

Dear participant:
The following questionnaire is part of a PhD research about Project Management. Answering this questionnaire should not take more than 20 minutes. Thank you for your support.

1  Age
2  Gender
3  Country of birth
4  Country of residence
5  Ethnicity
6  Education level
7  Marital Status
8  No. of kids
9  Work environment (Public, private, own company)
10 Years working at the same place
11 Years of professional experience
12 Do you know what “Corporate Culture” is?
13 Does your organisation have a “Corporate Culture”?
14 Can you identify and list the values surrounding the corporate culture of your organisation?
   Hard work
   Punctuality
   Tolerance
   Competitiveness
   Personal Development
   Team working
15 Do you consider that sometimes your personal culture/values clash with the corporate culture/values of your organisation?
16 Do you work managing a work team or within a work team?
17 Is your work team composed by members from different cultures?
18 Have you ever worked with people from other countries/nationalities?
19 Are you or have you been in charge of a project?
20 Was the project finished successfully?
21 What do you think are the factors to consider a project successful?
   Finish on time
   Finish within budget
   Deliver desired specifications
   Customer satisfaction
22 Do you know any Project management methodology?
23 Have you used any of these project management methodologies?
24 Do you consider that the use of a Project management methodology could give your project an advantage?
25 If yes, what are the points of the projects that you could improve using a project management methodology?
   Management of the project as a whole
   Budget
   Working teams
   Delivering time
   Relationships with management/teams
26 Do you consider that having knowledge about the culture where a project is being carried out gives your organisation an advantage?
27 Do you think that a working team composed of people from different cultural backgrounds has any advantage when working on specific projects?
28 Can you identify what are the advantages of a multicultural working team?
   Better understanding of certain problems
   Ability to look at the project from multiple points of view
   Use of personal experience
   Proposal of different solutions
   Tolerance
   Understanding of different needs
   Improvement of managerial skills
# Appendix E, Pilot questionnaire

Dear participant:

The following questionnaire is part of a PhD research about Project Management.

In order to complete this survey, I kindly ask you to consider the most recent project you have completed regardless if it was successful or unsuccessful.

The scale for answering the questionnaire grows up from Never to Always. For example, if in the project in consideration the deadlines are met most of the time, you could tick “Usually”.

Answering this questionnaire should not take more than 25 minutes.

Thank you very much for your support

Kind regards

<table>
<thead>
<tr>
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<tr>
<td></td>
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</tr>
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<td>1</td>
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<td>Budgets are not exceeded</td>
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<td>Business is conducted in ethical manner</td>
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<td>Calculated risk taking is encouraged</td>
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<td>5</td>
<td>Conflict between team members is recognised and dealt with</td>
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<td>Conflicts and differences between team members are managed in a constructive way for mutual benefit</td>
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<td>7</td>
<td>Control measures are clearly defined</td>
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<td>8</td>
<td>Deadlines are mostly met</td>
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<td>9</td>
<td>Decisions are made quickly</td>
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<td>During the design phase the project process is clearly visualised</td>
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<td>11</td>
<td>During the project lifecycle the use of meetings and bureaucracy are kept to a minimum level</td>
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<td>Each team member has a clear understanding of his/her role</td>
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<td>13</td>
<td>Each team member is disciplined to deliver according to plan</td>
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<td>14</td>
<td>Each team member knows exactly what are her/his responsibilities</td>
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<td>15</td>
<td>External changes in the project environment are constantly monitored</td>
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<td>16</td>
<td>Feasibility studies are required before the project is implemented</td>
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<td>17</td>
<td>Feedback on project processes and activities is provided on regular basis</td>
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<td>18</td>
<td>Individual performance is evaluated according to the project goals</td>
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<td>19</td>
<td>Interdependence amongst stakeholders is recognised</td>
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<td>20</td>
<td>It does not matter what means are used to achieve project results, as long as these results are achieved</td>
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<td>21</td>
<td>Management interferes with decision-making procedures</td>
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<td>22</td>
<td>Management is enthusiastic about the projects</td>
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<td>23</td>
<td>Networking is encouraged in the organisation</td>
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<td>24</td>
<td>Open communication is used to deal with uncertainty in projects</td>
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<td>25</td>
<td>Organisational goals supersede personal agendas</td>
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<td>26</td>
<td>Past projects experiences and mistakes are well documented</td>
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<td>27</td>
<td>Power struggles and internal politics are managed before the project implementation</td>
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<td></td>
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<td>Never</td>
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<tr>
<td>28</td>
<td>Project information is open for all team members</td>
<td></td>
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<tr>
<td>29</td>
<td>Project mistakes are openly discussed</td>
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<tr>
<td>30</td>
<td>Project teams are capable of responding immediately to changes in the external environment</td>
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<tr>
<td>31</td>
<td>Projects use rewards and recognition to increase motivation</td>
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<tr>
<td>32</td>
<td>Rapport is maintained between senior management and project teams</td>
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<td>Risk is monitored in a continuous basis</td>
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<td>34</td>
<td>Senior management and team members have a high degree of trust between them</td>
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<td>35</td>
<td>Team activities take place in an organised way</td>
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<td>36</td>
<td>Team members accept criticism openly</td>
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<td>37</td>
<td>Team members are allowed to take the initiative in problem solving</td>
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<td>38</td>
<td>Team members are carefully selected for each project</td>
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<td>Team members are committed to the success of the project</td>
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<td>40</td>
<td>Team members are encouraged to learn from past mistakes</td>
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<td>41</td>
<td>Team results influences the allocation of rewards</td>
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<tr>
<td>42</td>
<td>Team understanding of project management methodologies and tools is important for the success of the project</td>
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<tr>
<td>43</td>
<td>Team work is regarded as important for project success</td>
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<tr>
<td>44</td>
<td>Teams are penalised for failures and mistakes</td>
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<tr>
<td>45</td>
<td>Teams have structural flexibility to perform their tasks</td>
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<td>46</td>
<td>Teams receive support from other teams when necessary</td>
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<tr>
<td>47</td>
<td>The allocation of rewards is based on individual performances</td>
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<td>48</td>
<td>The expectations of external stakeholders are clearly defined</td>
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<td>49</td>
<td>The expectations of the customers are clearly defined</td>
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<td>50</td>
<td>The experience of the project manager helps to achieve the results</td>
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<tr>
<td>51</td>
<td>The experience of the team members helps to reach the desired results</td>
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<tr>
<td>52</td>
<td>The focus of the project processes and activities is on results</td>
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<tr>
<td>53</td>
<td>The leadership team in the project focuses on a competent team</td>
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<td>54</td>
<td>The organisational strategy involves projects as one of its key parts</td>
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<td>The performance of the team is evaluated according to the project goals</td>
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<td>56</td>
<td>The phases of the project follow the project lifecycle</td>
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<td>57</td>
<td>The project breakdown structures, start and finish dates, budget and resources allocation are clearly structured and defined</td>
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<tr>
<td>58</td>
<td>The project environment encourages innovation and creativity</td>
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<td>59</td>
<td>The project is driven by business facts and objectives rather than by emotions</td>
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<td>60</td>
<td>The project is provided with sufficient resources from the management</td>
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<td>61</td>
<td>The project manager has a good relationship with the customer</td>
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<td>The project manager has a good relationship with the suppliers</td>
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<td></td>
<td></td>
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<tr>
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<td>The project manager has a good relationship with the team members</td>
<td></td>
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<tr>
<td>64</td>
<td>The project manager is regarded as being credible</td>
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<td>The project manager keeps a positive relationship with the senior</td>
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<td>The project manager possesses knowledge in project management theory</td>
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<td>67</td>
<td>The project performance is influenced by the project manager performance</td>
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<tr>
<td>68</td>
<td>The project performance is influenced by the team performance</td>
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<tr>
<td>69</td>
<td>The project plan contains clear milestones</td>
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<td>70</td>
<td>The project processes and activities aim to delivering project outcomes</td>
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<td>The project processes and activities are clearly described</td>
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<td>The project stakeholders have a high degree of trust amongst them</td>
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<td>The project team has a good relationship with the suppliers</td>
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<td>The project team is regarded as credible</td>
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<td>The projects are provided with sufficient support from the management</td>
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<td>The results of the project influence the evaluation of individual</td>
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<td>performances</td>
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<td>The structure of the organisation supports project teams</td>
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<td>The style of the project manager adapts to the different project</td>
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<td>The team is responsible for solving problems</td>
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<td>The team members come from different cultural background</td>
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<td>The team members have a good relationship</td>
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<td>The team members have a strong sense of belonging</td>
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<td>The team members look out for the interests of each other</td>
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<td>The team organises its own work activities</td>
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<td>The use of project management methodologies and tools is important for</td>
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<td>89</td>
<td>The work breakdown structure is used as a selection criteria for team</td>
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<tr>
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<td>members</td>
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<td>90</td>
<td>There are regular communication sessions</td>
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<td>91</td>
<td>There is a clear project plan</td>
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<td>There is a high tolerance for conflict amongst the team</td>
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<td>There is a systematic monitoring of the progress of the project</td>
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<td>36 - 40 years</td>
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<td>Time working in this sector</td>
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<td>Years working as a team member</td>
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<td>11</td>
<td>Years working as a project manager</td>
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</table>
Appendix F, Main questionnaire

Dear participant:

The following questionnaire is part of a PhD research about Project Management.

In order to complete this survey, I kindly ask you to consider the most recent project you have completed regardless if it was successful or unsuccessful.

The scale for answering the questionnaire grows up from Never to Always. For example, if in the project in consideration the deadlines are met most of the time, you could tick “Usually”.

Answering this questionnaire should not take more than 25 minutes.

Thank you very much for your support

Kind regards

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Mark</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Never</td>
</tr>
<tr>
<td>1</td>
<td>Decisions are made quickly</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>During the design phase the project process is clearly visualised</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Projects use rewards and recognition to increase motivation</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Each team member is disciplined to deliver according to plan</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The expectations of the customers are clearly defined</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Deadlines are met</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The expectations of the external stakeholders are clearly defined</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Processes are focused on delivering outcomes</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Project mistakes are openly discussed</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The project processes and activities are clearly described</td>
<td></td>
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<tr>
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<td>Question</td>
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<td></td>
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<td>13</td>
<td>Team activities take place in an organised way</td>
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<td>14</td>
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<td>There is a high tolerance for conflict amongst the team members</td>
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<td>Business is conducted in an ethical manner</td>
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<tr>
<td>37</td>
<td>The team members look out for the interests of each other</td>
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</tr>
<tr>
<td>38</td>
<td>The style of the project manager adapts to the different project phases</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>The team believes in the project manager</td>
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</tr>
<tr>
<td>40</td>
<td>The project manager has a good relationship with the team members</td>
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<tr>
<td>41</td>
<td>The project manager possesses knowledge in project management theory and practice</td>
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<tr>
<td>42</td>
<td>Conflicts and differences between team members are managed in a constructive way for mutual benefit</td>
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<tr>
<td>43</td>
<td>Team members are encouraged to learn from past mistakes</td>
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<tr>
<td>44</td>
<td>The team leader focuses on having a competent team</td>
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<tr>
<td>45</td>
<td>The project stakeholders have a high degree of trust amongst them</td>
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</tr>
<tr>
<td>46</td>
<td>Team members accept criticism openly</td>
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<tr>
<td>47</td>
<td>The team members come from different cultural backgrounds</td>
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<tr>
<td>48</td>
<td>The experience of the team members helps to reach the desired results</td>
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<tr>
<td>49</td>
<td>The team members are experienced in the use of project management methodologies and tools</td>
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<td>50</td>
<td>Team members are allowed to take the initiative in problem solving</td>
<td></td>
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<tr>
<td>51</td>
<td>Interdependence amongst stakeholders is recognised</td>
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<tr>
<td>No</td>
<td>Question</td>
<td>Mark</td>
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<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>52</td>
<td>Teams have structural flexibility to perform their tasks</td>
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</tr>
<tr>
<td>53</td>
<td>The team organises its own work activities</td>
<td></td>
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<tr>
<td>54</td>
<td>Project teams are capable of responding immediately to changes in the external environment</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>The team has authority to make decisions</td>
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<tr>
<td>56</td>
<td>The team is responsible for solving problems</td>
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<tr>
<td>57</td>
<td>It does not matter what means are used to achieve project results, as long as these results are achieved</td>
<td></td>
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<tr>
<td>58</td>
<td>Team members are carefully selected for each project</td>
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<tr>
<td>59</td>
<td>Networking is encouraged in the organisation</td>
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<tr>
<td>60</td>
<td>The structure of the organisation supports project teams</td>
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<tr>
<td>61</td>
<td>Management interferes with decision-making procedures</td>
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<tr>
<td>62</td>
<td>The project performance is influenced by the team performance</td>
<td></td>
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<tr>
<td>63</td>
<td>Teams receive support from other teams when necessary</td>
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<tr>
<td>64</td>
<td>Organisational goals supersede personal agendas</td>
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<tr>
<td>65</td>
<td>The project performance is influenced by the performance of the project manager</td>
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</tr>
<tr>
<td>66</td>
<td>The project breakdown structures, start and finish dates, budget and resources allocation are clearly structured and defined</td>
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</tr>
<tr>
<td>67</td>
<td>Individual performance is evaluated according to the project goals</td>
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<tr>
<td>68</td>
<td>The work breakdown structure is used as a selection criteria for team members</td>
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<tr>
<td>69</td>
<td>Team work is regarded as important for project success</td>
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</tr>
<tr>
<td>No</td>
<td>Question</td>
<td>Mark</td>
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<tr>
<td></td>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>70</td>
<td>The use of project management methodologies and tools is important for the project success</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Teams are penalised for failures and mistakes</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>The project is driven by business facts and objectives rather than by emotions</td>
<td></td>
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<tr>
<td>73</td>
<td>The results of the project influence the evaluation of individual performances</td>
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</tr>
<tr>
<td>74</td>
<td>The project plan contains clear milestones</td>
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<tr>
<td>75</td>
<td>Team results influence the allocation of rewards</td>
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<tr>
<td>76</td>
<td>Team understanding of project management methodologies and tools is important for the success of the project</td>
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<tr>
<td>77</td>
<td>The performance of the team is evaluated according to the project goals</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>The allocation of rewards is based on individual performances</td>
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<tr>
<td>79</td>
<td>Each team member knows exactly what are her/his responsibilities</td>
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<td>80</td>
<td>Feasibility studies are required before the project is implemented</td>
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<td>81</td>
<td>External changes in the project environment are constantly monitored</td>
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<td>The project manager keeps a positive relationship with the senior management</td>
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<td>The project team has a good relationship with the suppliers</td>
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<td>The project team is regarded as credible</td>
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<tr>
<td></td>
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<tr>
<td>87</td>
<td>The project is provided with sufficient resources from the management</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>Rapport is maintained between senior management and project teams</td>
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<td>89</td>
<td>Management is enthusiastic about the project</td>
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<td>90</td>
<td>The project manager is regarded as being credible</td>
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<td>91</td>
<td>The projects are provided with sufficient support from the management</td>
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<td>92</td>
<td>The project environment encourages innovation and creativity</td>
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<td>Question</td>
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<td>11 – 15 years</td>
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<td>21 – 25 years</td>
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<td>More than 25 years</td>
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<td>10</td>
<td>Years working as team member</td>
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<td>Years working as project manager</td>
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<td>12</td>
<td>Was the project successful</td>
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</table>
Appendix G, Item analysis

The information in Tables G.1 to G.5 shows the item analysis (Mean, Item-scale correlation and Standard Deviation) per each one of the significant elements of the main questionnaire.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Item-scale correlation</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decisions are made quickly</td>
<td>2.93</td>
<td>0.51</td>
<td>0.919</td>
</tr>
<tr>
<td>During the design phase the project process is clearly visualised</td>
<td>3.53</td>
<td>0.65</td>
<td>1.120</td>
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<tr>
<td>Projects use rewards and recognition to increase motivation</td>
<td>2.96</td>
<td>0.63</td>
<td>1.052</td>
</tr>
<tr>
<td>Each team member is disciplined to deliver according to plan</td>
<td>3.16</td>
<td>0.62</td>
<td>0.952</td>
</tr>
<tr>
<td>The expectations of the customers are clearly defined</td>
<td>3.86</td>
<td>0.68</td>
<td>0.827</td>
</tr>
<tr>
<td>Deadlines are met</td>
<td>3.25</td>
<td>0.41</td>
<td>1.132</td>
</tr>
<tr>
<td>The expectations of the external stakeholders are clearly defined</td>
<td>3.76</td>
<td>0.64</td>
<td>0.812</td>
</tr>
<tr>
<td>Processes are focused on delivering outcomes</td>
<td>4.50</td>
<td>0.68</td>
<td>0.656</td>
</tr>
<tr>
<td>Project mistakes are openly discussed</td>
<td>3.59</td>
<td>0.40</td>
<td>0.950</td>
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<tr>
<td>The project processes and activities are clearly described</td>
<td>3.89</td>
<td>0.55</td>
<td>1.040</td>
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<tr>
<td>Open communication is used to deal with uncertainty in projects</td>
<td>3.72</td>
<td>0.62</td>
<td>0.822</td>
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<tr>
<td>During the project lifecycle the use of meetings and bureaucracy are kept to a minimum level</td>
<td>2.82</td>
<td>0.65</td>
<td>1.174</td>
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<td>Team activities take place in an organised way</td>
<td>3.57</td>
<td>0.60</td>
<td>1.001</td>
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<td>Budgets are not exceeded</td>
<td>3.05</td>
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<td>1.206</td>
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<td>Past experiences and mistakes are well documented</td>
<td>3.72</td>
<td>0.65</td>
<td>1.192</td>
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<td>There is a clear project plan</td>
<td>3.94</td>
<td>0.43</td>
<td>0.908</td>
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<tr>
<td>The focus of the project processes and activities is on results</td>
<td>4.04</td>
<td>0.55</td>
<td>0.790</td>
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<tr>
<td>Each team member has a clear understanding of her/his role</td>
<td>3.50</td>
<td>0.66</td>
<td>0.992</td>
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<td>There is a systematic monitoring of the progress of the project</td>
<td>3.69</td>
<td>0.46</td>
<td>0.641</td>
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<td>Team members are committed to the success of the project</td>
<td>3.77</td>
<td>0.65</td>
<td>0.828</td>
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<tr>
<td>There are regular communication sessions</td>
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<tr>
<td>All relevant stakeholders are disciplined to deliver according to plan</td>
<td>3.43</td>
<td>0.58</td>
<td>1.027</td>
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<td>Control measures are clearly defined</td>
<td>3.49</td>
<td>0.60</td>
<td>0.885</td>
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<td>Feedback on project processes and activities is provided on regular basis</td>
<td>3.62</td>
<td>0.68</td>
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<tr>
<td>The phases of the project follow the project lifecycle</td>
<td>3.75</td>
<td>0.69</td>
<td>1.014</td>
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<td>Project information is open to all team members</td>
<td>3.87</td>
<td>0.66</td>
<td>0.968</td>
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</table>

Table G.1 Item analysis “Project processes” (N = 26)
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Item-scale correlation</th>
<th>Std. Deviation</th>
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</thead>
<tbody>
<tr>
<td>The team members have a good relationship with each other</td>
<td>3.75</td>
<td>0.50</td>
<td>0.726</td>
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<tr>
<td>Conflict between team members is recognised and dealt with</td>
<td>3.85</td>
<td>0.71</td>
<td>0.841</td>
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<tr>
<td>The team members have a strong sense of belonging</td>
<td>3.37</td>
<td>0.66</td>
<td>0.839</td>
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<td>Senior management and team members have a high degree of trust between them</td>
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<td>0.69</td>
<td>1.367</td>
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<td>The experience of the project manager helps to achieve the results</td>
<td>4.09</td>
<td>0.66</td>
<td>0.810</td>
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<td>Risk is monitored on a continuous basis</td>
<td>3.32</td>
<td>0.62</td>
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<td>Power struggles and internal politics are managed before the project implementation</td>
<td>3.22</td>
<td>0.70</td>
<td>1.459</td>
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<td>There is a high tolerance for conflict amongst the team members</td>
<td>3.19</td>
<td>0.69</td>
<td>0.843</td>
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<tr>
<td>Calculated risk taking is encouraged</td>
<td>3.38</td>
<td>0.64</td>
<td>1.247</td>
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<td>Business is conducted in an ethical manner</td>
<td>3.72</td>
<td>0.60</td>
<td>0.994</td>
</tr>
<tr>
<td>The team members look out for the interests of each other</td>
<td>3.34</td>
<td>0.55</td>
<td>0.961</td>
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<td>The style of the project manager adapts to the different project phases</td>
<td>3.96</td>
<td>0.60</td>
<td>0.829</td>
</tr>
<tr>
<td>The team believes in the project manager</td>
<td>3.84</td>
<td>0.73</td>
<td>0.890</td>
</tr>
<tr>
<td>The project manager has a good relationship with the team members</td>
<td>4.19</td>
<td>0.43</td>
<td>0.798</td>
</tr>
<tr>
<td>The project manager possesses knowledge in project management theory and practice</td>
<td>4.04</td>
<td>0.51</td>
<td>1.103</td>
</tr>
<tr>
<td>Conflicts and differences between team members are managed in a constructive way for mutual benefit</td>
<td>3.53</td>
<td>0.60</td>
<td>0.872</td>
</tr>
<tr>
<td>Team members are encouraged to learn from past mistakes</td>
<td>4.09</td>
<td>0.60</td>
<td>1.055</td>
</tr>
<tr>
<td>The team leader focuses on having a competent team</td>
<td>4.01</td>
<td>0.63</td>
<td>1.038</td>
</tr>
<tr>
<td>The project stakeholders have a high degree of trust amongst them</td>
<td>3.73</td>
<td>0.70</td>
<td>0.804</td>
</tr>
<tr>
<td>Team members accept criticism openly</td>
<td>3.19</td>
<td>0.60</td>
<td>0.882</td>
</tr>
<tr>
<td>The team members come from different cultural backgrounds</td>
<td>3.29</td>
<td>0.68</td>
<td>1.153</td>
</tr>
<tr>
<td>The experience of the team members helps to reach the desired results</td>
<td>3.71</td>
<td>0.74</td>
<td>0.739</td>
</tr>
<tr>
<td>The team members are experienced in the use of project management methodologies and tools</td>
<td>3.16</td>
<td>0.56</td>
<td>0.696</td>
</tr>
</tbody>
</table>

Table G.2 Item analysis “People in projects” (N = 23)
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Item-scale correlation</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team members are allowed to take the initiative in problem solving</td>
<td>3.38</td>
<td>0.52</td>
<td>0.851</td>
</tr>
<tr>
<td>Interdependence amongst stakeholders is recognised</td>
<td>3.85</td>
<td>0.48</td>
<td>0.646</td>
</tr>
<tr>
<td>Teams have structural flexibility to perform their tasks</td>
<td>3.83</td>
<td>0.64</td>
<td>0.640</td>
</tr>
<tr>
<td>The team organises its own work activities</td>
<td>3.83</td>
<td>0.59</td>
<td>0.600</td>
</tr>
<tr>
<td>Project teams are capable of responding immediately to changes in the external environment</td>
<td>3.62</td>
<td>0.62</td>
<td>0.752</td>
</tr>
<tr>
<td>The team has authority to make decisions</td>
<td>3.14</td>
<td>0.56</td>
<td>0.948</td>
</tr>
<tr>
<td>The team is responsible for solving problems</td>
<td>3.66</td>
<td>0.62</td>
<td>0.891</td>
</tr>
<tr>
<td>It does not matter what means are used to achieve project results, as long as these results are achieved</td>
<td>2.78</td>
<td>0.70</td>
<td>0.717</td>
</tr>
<tr>
<td>Team members are carefully selected for each project</td>
<td>3.40</td>
<td>0.59</td>
<td>1.085</td>
</tr>
<tr>
<td>Networking is encouraged in the organisation</td>
<td>3.35</td>
<td>0.70</td>
<td>0.974</td>
</tr>
<tr>
<td>The structure of the organisation supports project teams</td>
<td>3.36</td>
<td>0.55</td>
<td>1.053</td>
</tr>
<tr>
<td>Management interferes with decision-making procedures</td>
<td>3.88</td>
<td>0.40</td>
<td>1.078</td>
</tr>
<tr>
<td>The project performance is influenced by the team performance</td>
<td>3.93</td>
<td>0.64</td>
<td>0.875</td>
</tr>
<tr>
<td>Teams receive support from other teams when necessary</td>
<td>3.66</td>
<td>0.60</td>
<td>0.749</td>
</tr>
<tr>
<td>Organisational goals supersede personal agendas</td>
<td>3.58</td>
<td>0.43</td>
<td>0.931</td>
</tr>
<tr>
<td>The project performance is influenced by the performance of the project manager</td>
<td>3.71</td>
<td>0.52</td>
<td>0.935</td>
</tr>
</tbody>
</table>

Table G.3 Item analysis “Project structures” (N = 16)
<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Item-scale correlation</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project breakdown structures, start and finish dates, budget and resources allocation are clearly structured and defined</td>
<td>3.90</td>
<td>0.48</td>
<td>1.008</td>
</tr>
<tr>
<td>Individual performance is evaluated according to the project goals</td>
<td>3.51</td>
<td>0.46</td>
<td>1.047</td>
</tr>
<tr>
<td>The work breakdown structure is used as a selection criteria for team members</td>
<td>3.03</td>
<td>0.61</td>
<td>0.994</td>
</tr>
<tr>
<td>Team work is regarded as important for project success</td>
<td>4.19</td>
<td>0.53</td>
<td>0.865</td>
</tr>
<tr>
<td>The use of project management methodologies and tools is important for the project success</td>
<td>4.02</td>
<td>0.57</td>
<td>1.033</td>
</tr>
<tr>
<td>Teams are penalised for failures and mistakes</td>
<td>3.27</td>
<td>0.63</td>
<td>1.054</td>
</tr>
<tr>
<td>The project is driven by business facts and objectives rather than by emotions</td>
<td>4.00</td>
<td>0.38</td>
<td>0.711</td>
</tr>
<tr>
<td>The results of the project influence the evaluation of individual performances</td>
<td>3.21</td>
<td>0.64</td>
<td>1.075</td>
</tr>
<tr>
<td>The project plan contains clear milestones</td>
<td>3.88</td>
<td>0.61</td>
<td>0.844</td>
</tr>
<tr>
<td>Team results influence the allocation of rewards</td>
<td>3.70</td>
<td>0.48</td>
<td>1.296</td>
</tr>
<tr>
<td>Team understanding of project management methodologies and tools is important for the success of the project</td>
<td>3.95</td>
<td>0.43</td>
<td>1.127</td>
</tr>
<tr>
<td>The performance of the team is evaluated according to the project goals</td>
<td>3.88</td>
<td>0.63</td>
<td>1.155</td>
</tr>
<tr>
<td>The allocation of rewards is based on individual performances</td>
<td>3.89</td>
<td>0.59</td>
<td>1.167</td>
</tr>
<tr>
<td>Each team member knows exactly what are her/his responsibilities</td>
<td>4.12</td>
<td>0.52</td>
<td>0.721</td>
</tr>
<tr>
<td>Feasibility studies are required before the project is implemented</td>
<td>3.56</td>
<td>0.53</td>
<td>1.374</td>
</tr>
</tbody>
</table>

Table G.4 Item analysis “Project systems” (N = 15)
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Item-scale correlation</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>External changes in the project environment are constantly monitored</td>
<td>3.81</td>
<td>0.57</td>
<td>0.816</td>
</tr>
<tr>
<td>The project manager keeps a positive relationship with the senior management</td>
<td>4.47</td>
<td>0.64</td>
<td>0.557</td>
</tr>
<tr>
<td>The project team has a good relationship with the suppliers</td>
<td>4.22</td>
<td>0.68</td>
<td>0.698</td>
</tr>
<tr>
<td>The project team is regarded as credible</td>
<td>4.29</td>
<td>0.60</td>
<td>0.759</td>
</tr>
<tr>
<td>The project manager has a good relationship with the customer</td>
<td>4.28</td>
<td>0.68</td>
<td>0.779</td>
</tr>
<tr>
<td>The project manager has a good relationship with the suppliers</td>
<td>4.12</td>
<td>0.62</td>
<td>0.857</td>
</tr>
<tr>
<td>The project is provided with sufficient resources from the management</td>
<td>3.24</td>
<td>0.53</td>
<td>1.317</td>
</tr>
<tr>
<td>Rapport is maintained between senior management and project teams</td>
<td>3.65</td>
<td>0.69</td>
<td>1.235</td>
</tr>
<tr>
<td>Management is enthusiastic about the project</td>
<td>3.96</td>
<td>0.65</td>
<td>1.009</td>
</tr>
<tr>
<td>The project manager is regarded as being credible</td>
<td>4.25</td>
<td>0.54</td>
<td>0.879</td>
</tr>
<tr>
<td>The projects are provided with sufficient support from the management</td>
<td>3.50</td>
<td>0.56</td>
<td>1.090</td>
</tr>
<tr>
<td>The project environment encourages innovation and creativity</td>
<td>3.79</td>
<td>0.67</td>
<td>0.960</td>
</tr>
</tbody>
</table>

Table G.5 Item analysis “Project environment” (N = 12)
Appendix H, Questionnaire Analysis Graphs

a) Processes

1. Decisions are made quickly

2. During the design phase the project process is clearly visualised

3. Projects use rewards and recognition to increase motivation

4. Each team member is disciplined to deliver according to plan
b) People
Conflicts and differences between team members are managed in a constructive way for mutual benefit

Team members are encouraged to learn from past mistakes

The team leader focuses on having a competent team

The project stakeholders have a high degree of trust amongst them

Team members accept criticism openly
The team members come from different cultural backgrounds

The experience of the team members helps to reach the desired results

The team members are experienced in the use of project management methodologies and tools
c) Structures

![Bar Chart: Team members are allowed to take the initiative in problem solving]

![Bar Chart: Interdependence amongst stakeholders is recognised]

![Bar Chart: Teams have structural flexibility to perform their tasks]

![Bar Chart: The team organises its own work activities]

![Bar Chart: Project teams are capable of responding immediately to changes in the external environment]
The project performance is influenced by the performance of the project manager

<table>
<thead>
<tr>
<th></th>
<th>Mexico</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seldom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quite Often</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usually</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

352
d) Systems

The project breakdown structures are clearly structured and defined

Individual performance is evaluated according to the project goals

The work breakdown structure is used as a selection criteria for team members

Team work is regarded as important for project success

The use of project management methodologies and tools is important for the project success

353
e) Environment

External changes in the project environment are constantly monitored

The project manager keeps a positive relationship with the senior management

The project team has a good relationship with the suppliers

The project team is regarded as credible

The project manager has a good relationship with the customer
Appendix I, Interviews review

Interviewees

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Mexico</td>
<td>Oil</td>
</tr>
<tr>
<td>GM</td>
<td>Mexico</td>
<td>Oil</td>
</tr>
<tr>
<td>RB</td>
<td>Mexico</td>
<td>Oil</td>
</tr>
<tr>
<td>AR</td>
<td>Mexico</td>
<td>Power Generation</td>
</tr>
<tr>
<td>CA</td>
<td>Mexico</td>
<td>Power Generation</td>
</tr>
<tr>
<td>NG</td>
<td>UK</td>
<td>Oil</td>
</tr>
<tr>
<td>JR</td>
<td>UK</td>
<td>Power Generation</td>
</tr>
</tbody>
</table>

Summarised responses

<table>
<thead>
<tr>
<th>Name</th>
<th>Feasibility studies have to be carried out</th>
<th>Dealing with power struggles and politics before the project starts</th>
<th>Plans lack clarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Agree</td>
<td>Lack of understanding in counterparts</td>
<td>Agree</td>
</tr>
<tr>
<td>GM</td>
<td>Agree</td>
<td>Lack of understanding in counterparts</td>
<td>Agree</td>
</tr>
<tr>
<td>RB</td>
<td>Agree</td>
<td>Have been present</td>
<td>Disagree</td>
</tr>
<tr>
<td>AR</td>
<td>Agree</td>
<td>Should be performed</td>
<td>Agree</td>
</tr>
<tr>
<td>CA</td>
<td>Agree</td>
<td>Should be performed</td>
<td>Disagree</td>
</tr>
<tr>
<td>NG</td>
<td>Agree</td>
<td>Have been present</td>
<td>Agree</td>
</tr>
<tr>
<td>JR</td>
<td>Agree</td>
<td>Have been present</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Has any of your projects gone over budget</th>
<th>Do you auditing projects</th>
<th>Projects are provided with clear plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>GM</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>RB</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>AR</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>CA</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>NG</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>JR</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Name</td>
<td>Allocation of rewards based on results of project</td>
<td>Teams are penalised if project fails</td>
<td>Reward allocation based on personal performances</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------</td>
<td>-------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>TN</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>GM</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>RB</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>AR</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>CA</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>NG</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
<tr>
<td>JR</td>
<td>Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Do you use project management methodologies</th>
<th>Past experiences and mistakes are documented</th>
<th>Project managers and senior management have a good relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>GM</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>RB</td>
<td>Not always possible</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>AR</td>
<td>Agree</td>
<td>Not always detailed</td>
<td>Agree</td>
</tr>
<tr>
<td>CA</td>
<td>Agree</td>
<td>Not always detailed</td>
<td>Agree</td>
</tr>
<tr>
<td>NG</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
<tr>
<td>JR</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Project manager and team members have a good relationship / type</th>
<th>Is feedback provided to staff</th>
<th>What is the course of action if the project shows problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Agree / paternalistic</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>GM</td>
<td>Agree / paternalistic</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>RB</td>
<td>Agree / paternalistic</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>AR</td>
<td>Agree / paternalistic</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>CA</td>
<td>Agree / paternalistic</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>NG</td>
<td>Agree / professional</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
<tr>
<td>JR</td>
<td>Agree / professional</td>
<td>Agree</td>
<td>Review it straight away</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Monitoring changes in external environment is important</th>
<th>What is the impact of Mexican culture in your projects</th>
<th>Your organisation has a career plan for its employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>Agree</td>
<td>Noticeable</td>
<td>Agree</td>
</tr>
<tr>
<td>GM</td>
<td>Agree</td>
<td>Noticeable</td>
<td>Agree</td>
</tr>
<tr>
<td>RB</td>
<td>Agree</td>
<td>Noticeable</td>
<td>Agree</td>
</tr>
<tr>
<td>AR</td>
<td>Agree</td>
<td>Noticeable</td>
<td>Agree</td>
</tr>
<tr>
<td>CA</td>
<td>Agree</td>
<td>Noticeable</td>
<td>Agree</td>
</tr>
<tr>
<td>NG</td>
<td>Agree</td>
<td>N/A</td>
<td>Agree</td>
</tr>
<tr>
<td>JR</td>
<td>Agree</td>
<td>N/A</td>
<td>Agree</td>
</tr>
<tr>
<td>Name</td>
<td>What is the knowledge level of your counterparts</td>
<td>What is the bureaucracy level in your organisation for your projects</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>TN</td>
<td>Good level</td>
<td>Extreme</td>
<td></td>
</tr>
<tr>
<td>GM</td>
<td>Good level</td>
<td>Extreme</td>
<td></td>
</tr>
<tr>
<td>RB</td>
<td>Good level</td>
<td>Extreme</td>
<td></td>
</tr>
<tr>
<td>AR</td>
<td>Good level</td>
<td>Occasional</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>Good level</td>
<td>Occasional</td>
<td></td>
</tr>
<tr>
<td>NG</td>
<td>Excellent</td>
<td>Occasional</td>
<td></td>
</tr>
<tr>
<td>JR</td>
<td>Excellent</td>
<td>Occasional</td>
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# Appendix J, Spearman’s rank statistical correlations

## Processes

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>Spearman's Rank Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sector vs Mexico</td>
</tr>
<tr>
<td>1</td>
<td>Decisions are made quickly</td>
<td>0.90</td>
</tr>
<tr>
<td>2</td>
<td>During the design phase the project process is clearly visualised</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
<td>Projects use rewards and recognition to increase motivation</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>Each team member is disciplined to deliver according to plan</td>
<td>1.00</td>
</tr>
<tr>
<td>5</td>
<td>The expectations of the customers are clearly defined</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>Deadlines are met</td>
<td>0.90</td>
</tr>
<tr>
<td>7</td>
<td>The expectations of the external stakeholders are clearly defined</td>
<td>1.00</td>
</tr>
<tr>
<td>8</td>
<td>Processes are focused on delivering outcomes</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>Project mistakes are openly discussed</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>The project processes and activities are clearly described</td>
<td>1.00</td>
</tr>
<tr>
<td>11</td>
<td>Open communication is used to deal with uncertainty in projects</td>
<td>1.00</td>
</tr>
<tr>
<td>12</td>
<td>During the project lifecycle the use of meetings and bureaucracy are kept to a minimum level</td>
<td>0.90</td>
</tr>
<tr>
<td>13</td>
<td>Team activities take place in an organised way</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>Budgets are not exceeded</td>
<td>0.90</td>
</tr>
<tr>
<td>15</td>
<td>Past experiences and mistakes are well documented</td>
<td>1.00</td>
</tr>
<tr>
<td>16</td>
<td>There is a clear project plan</td>
<td>1.00</td>
</tr>
<tr>
<td>17</td>
<td>The focus of the project processes and activities is on results</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>Each team member has a clear understanding of her/his role</td>
<td>1.00</td>
</tr>
<tr>
<td>19</td>
<td>There is a systematic monitoring of the progress of the project</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>Team members are committed to the success of the project</td>
<td>1.00</td>
</tr>
<tr>
<td>21</td>
<td>There are regular communication sessions</td>
<td>1.00</td>
</tr>
<tr>
<td>22</td>
<td>All relevant stakeholders are disciplined to deliver according to plan</td>
<td>1.00</td>
</tr>
<tr>
<td>23</td>
<td>Control measures are clearly defined</td>
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</tr>
<tr>
<td>24</td>
<td>Feedback on project processes and activities is provided on regular basis</td>
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</tr>
<tr>
<td>25</td>
<td>The phases of the project follow the project lifecycle</td>
<td>0.70</td>
</tr>
<tr>
<td>26</td>
<td>Project information is open to all team members</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>Question</td>
<td>Spearman's Rank Correlation</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td>Sector vs Sector Mexico</td>
</tr>
<tr>
<td>1</td>
<td>The team members have a good relationship with each other</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>Conflict between team members is recognised and dealt with</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>The team members have a strong sense of belonging</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>Senior management and team members have a high degree of trust between them</td>
<td>0.90</td>
</tr>
<tr>
<td>5</td>
<td>The experience of the project manager helps to achieve the results</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>Risk is monitored on a continuous basis</td>
<td>1.00</td>
</tr>
<tr>
<td>7</td>
<td>Power struggles and internal politics are managed before the project implementation</td>
<td>1.00</td>
</tr>
<tr>
<td>8</td>
<td>There is a high tolerance for conflict amongst the team members</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>Calculated risk taking is encouraged</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>Business is conducted in an ethical manner</td>
<td>0.90</td>
</tr>
<tr>
<td>11</td>
<td>The team members look out for the interests of each other</td>
<td>0.90</td>
</tr>
<tr>
<td>12</td>
<td>The style of the project manager adapts to the different project phases</td>
<td>1.00</td>
</tr>
<tr>
<td>13</td>
<td>The team believes in the project manager</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>The project manager has a good relationship with the team members</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>The project manager possesses knowledge in project management theory and practice</td>
<td>1.00</td>
</tr>
<tr>
<td>16</td>
<td>Conflicts and differences between team members are managed in a constructive way for mutual benefit</td>
<td>0.90</td>
</tr>
<tr>
<td>17</td>
<td>Team members are encouraged to learn from past mistakes</td>
<td>1.00</td>
</tr>
<tr>
<td>18</td>
<td>The team leader focuses on having a competent team</td>
<td>1.00</td>
</tr>
<tr>
<td>19</td>
<td>The project stakeholders have a high degree of trust amongst them</td>
<td>1.00</td>
</tr>
<tr>
<td>20</td>
<td>Team members accept criticism openly</td>
<td>1.00</td>
</tr>
<tr>
<td>21</td>
<td>The team members come from different cultural backgrounds</td>
<td>0.90</td>
</tr>
<tr>
<td>22</td>
<td>The experience of the team members helps to reach the desired results</td>
<td>1.00</td>
</tr>
<tr>
<td>23</td>
<td>The team members are experienced in the use of project management methodologies and tools</td>
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</table>
### Structures

<table>
<thead>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sector vs Mexico</td>
</tr>
<tr>
<td>1</td>
<td>Team members are allowed to take the initiative in problem solving</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>Interdependence amongst stakeholders is recognised</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>Teams have structural flexibility to perform their tasks</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>The team organises its own work activities</td>
<td>1.00</td>
</tr>
<tr>
<td>5</td>
<td>Project teams are capable of responding immediately to changes in the external environment</td>
<td>0.90</td>
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<tr>
<td>6</td>
<td>The team has authority to make decisions</td>
<td>1.00</td>
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<tr>
<td>7</td>
<td>The team is responsible for solving problems</td>
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</tr>
<tr>
<td>8</td>
<td>It does not matter what means are used to achieve project results, as long as these results are achieved</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>Team members are carefully selected for each project</td>
<td>0.90</td>
</tr>
<tr>
<td>10</td>
<td>Networking is encouraged in the organisation</td>
<td>1.00</td>
</tr>
<tr>
<td>11</td>
<td>The structure of the organisation supports project teams</td>
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</tr>
<tr>
<td>12</td>
<td>Management interferes with decision-making procedures</td>
<td>0.90</td>
</tr>
<tr>
<td>13</td>
<td>The project performance is influenced by the team performance</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>Teams receive support from other teams when necessary</td>
<td>0.80</td>
</tr>
<tr>
<td>15</td>
<td>Organisational goals supersede personal agendas</td>
<td>0.90</td>
</tr>
<tr>
<td>16</td>
<td>The project performance is influenced by the performance of the project manager</td>
<td>1.00</td>
</tr>
<tr>
<td>No.</td>
<td>Question</td>
<td>Spearman's Rank Correlation</td>
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<tr>
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<tr>
<td></td>
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<td>Sector vs Sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico</td>
</tr>
<tr>
<td>1</td>
<td>The project breakdown structures are clearly structured and defined</td>
<td>0.90</td>
</tr>
<tr>
<td>2</td>
<td>Individual performance is evaluated according to the project goals</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
<td>The work breakdown structure is used as a selection criteria for team members</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>Team work is regarded as important for project success</td>
<td>1.00</td>
</tr>
<tr>
<td>5</td>
<td>The use of project management methodologies and tools is important for the project success</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>Teams are penalised for failures and mistakes</td>
<td>1.00</td>
</tr>
<tr>
<td>7</td>
<td>The project is driven by business facts and objectives rather than by emotions</td>
<td>0.90</td>
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<tr>
<td>8</td>
<td>The results of the project influence the evaluation of individual performances</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>The project plan contains clear milestones</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>Team results influence the allocation of rewards</td>
<td>0.90</td>
</tr>
<tr>
<td>11</td>
<td>Team understanding of project management methodologies and tools is important for the success of the project</td>
<td>1.00</td>
</tr>
<tr>
<td>12</td>
<td>The performance of the team is evaluated according to the project goals</td>
<td>0.90</td>
</tr>
<tr>
<td>13</td>
<td>The allocation of rewards is based on individual performances</td>
<td>1.00</td>
</tr>
<tr>
<td>14</td>
<td>Each team member knows exactly what are her/his responsibilities</td>
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</tr>
<tr>
<td>15</td>
<td>Feasibility studies are required before the project is implemented</td>
<td>0.60</td>
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</table>
Environment

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Spearman's Rank Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sector vs Sector Mexico</td>
</tr>
<tr>
<td>1</td>
<td>External changes in the project environment are constantly monitored</td>
<td>1.00</td>
</tr>
<tr>
<td>2</td>
<td>The project manager keeps a positive relationship with the senior management</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>The project team has a good relationship with the suppliers</td>
<td>1.00</td>
</tr>
<tr>
<td>4</td>
<td>The project team is regarded as credible</td>
<td>1.00</td>
</tr>
<tr>
<td>5</td>
<td>The project manager has a good relationship with the customer</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>The project manager has a good relationship with the suppliers</td>
<td>1.00</td>
</tr>
<tr>
<td>7</td>
<td>The project is provided with sufficient resources from the management</td>
<td>0.70</td>
</tr>
<tr>
<td>8</td>
<td>Rapport is maintained between senior management and project teams</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>Management is enthusiastic about the project</td>
<td>1.00</td>
</tr>
<tr>
<td>10</td>
<td>The project manager is regarded as being credible</td>
<td>1.00</td>
</tr>
<tr>
<td>11</td>
<td>The projects are provided with sufficient support from the management</td>
<td>1.00</td>
</tr>
<tr>
<td>12</td>
<td>The project environment encourages innovation and creativity</td>
<td>1.00</td>
</tr>
</tbody>
</table>
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