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**SUCCESS FACTORS IN  
COLLABORATIVE RELATIONSHIPS  
(ALLIANCING AND PARTNERING) IN  
THE UK UPSTREAM OIL AND GAS  
INDUSTRY, AND PERCEPTION OF  
TRUST**

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**PhD**

**2004**

**SUCCESS FACTORS IN COLLABORATIVE RELATIONSHIPS  
(ALLIANCING AND PARTNERING) IN THE UK UPSTREAM  
OIL AND GAS INDUSTRY, AND PERCEPTION OF TRUST**

**SM Mamotazul Haque**

A thesis is submitted in partial fulfilment of the  
requirements of  
The Robert Gordon University  
for the degree of Doctor of Philosophy

May 2004



## ABSTRACT

This thesis concerns the characteristics of the collaborative relationships (partnering and alliances) between oil companies and their contractors which were popular in the UK oil and gas industry in the 1990s. It also considers the nature and role of trust in such relationships.

Over the last fifteen years companies in the UK oil and gas industry have been collaborating to enhance the sustainability of the industry. They have perceived some of the collaborative relationships to have been highly successful whereas others have been considered as failures. However, there is little firm evidence on what factors relate to success and failure or how success and failure have been defined.

The thesis discusses the special features of the collaborative relationships in the industry and the difficulty of developing a precise definition for them or for their success. It is also recognised that some factors can be seen as critical to success but that their presence may also be seen as an indicator of success, and this potential circularity is discussed within the thesis.

The first phase of the research was undertaken in September 1999 to find out the distinguishing features of alliancing and partnering and the factors that have been associated with their success and failure. Using a self-administered questionnaire, mostly qualitative free-text data were collected from a sample drawn randomly from three different sets of people associated with the industry. Information was extracted from the qualitative data through content analysis.

The first phase indicated that, in general, performance level i.e. achievement of goals expressed in terms of cost saving, time, and safety level; sharing risks and rewards; and acquiring more business is the broadly used criterion for measuring success or failure of alliances in the industry. Presence of trust was found to be the most important factor for enabling success of an alliance and it was followed by shared and aligned goals, open behaviour, shared knowledge, clear role, commitment of members, co-operative behaviour and honesty. Factors which often cause failure are absence of shared, aligned and clear goals, absence of trusting attitude, absence of open communication, presence of un-addressed cultural differences, and absence of strong proactive leadership.

The second phase of the study was undertaken because both the literature and the results of the first phase identified presence of trust as a very important success factor in collaborative relationships. Its aim was to understand peoples' perception of trust and its role in collaborative relationships with the following research questions: "What do people mean when they speak or think about trust in the industry?", "What are the effects of presence of trust in collaborative relationships?" and "What needs to be done to maintain trust in relationships?"



Data for the second phase was collected in July 2001 from five collaborative relationships, involving 21 companies from the upstream oil and gas industry, through a questionnaire survey and appropriate statistical methods were used to analyse the data. The findings suggest that people give high priority to the following types of trust; contractual trust, competence trust, process-based trust, strong form of trust and cognitive trust. The findings also suggest a method for dividing people into those with trusting attitudes and those with non-trusting attitudes.

The second phase used factors identified in the first phase to attempt to measure perceived levels of trust and perceived levels of success in the relationships of the people surveyed. A strong positive link between the perceived level of trust in an alliance and its perceived success was identified from the data.

The thesis includes a review of the research process used and reflects on lessons learned and improvements which could have been made. Areas for further research which build on the work in this thesis are suggested.

## ACKNOWLEDGEMENTS

This research project and thesis has only been possible because of the significant support of many individuals. I met many people through this project and their support for this work has been inspiring. In particular, I must sincerely thank the following:

I begin by giving my heart felt thanks to my supervisor, Dr Richard Green, who was instrumental in the thesis getting this far. His guidance, intellect, encouragement, and ideas for improvement exceeded measurably the job description of a supervisor. I also thank Dr. Douglas Gourlay, other supervisor for his enormous support and guidance.

Secondly, I wish to thank all members of Robert Gordon University especially Hector Douglas, Assistant Dean, Aberdeen Business School, Professor Mohendra Raj, Director of Research, Aberdeen Business School, Professor Bill Keogh, former member of staff Aberdeen Business School and Alexander Wilson, Associate Head of School, School of Computing, for their assistance and advice in the course of my study.

Third, particular thanks to the authorities who have allowed me to collect information from their organisations and the people who have kindly provided me the information for this PhD research

Fourth, my special thanks go to my wife Naznin Haque and my daughters Shareen Haque and Fariha Haque, my parents Mr. Muzibor Rahman and Mrs Monowara Rahman for their consistent love, support and encouragement through this exciting and arduous journey.

Finally, my deepest gratitude goes to Almighty God, the compassionate, merciful who has enabled me to complete the thesis.

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# CHAPTER 1

## BACKGROUND OF THE PhD RESEARCH

### 1.1 Introduction

Organisations in the present business environment face increasing global competition, where they require cost effective quality, shorter product development cycles and rapid technological innovation. Relationships between companies have a strong effect on the industrial outcomes in respect of price, quality, and quantity (Sako, 1992, pp. 31-48), hence co-operative strategy has attracted increasing attention by organisations over the last decade or so (Hagedoorn, 1993; Drago, 1997; Boddy et al, 1998). Co-operative strategy is the attempt by organisations to realise their objectives through co-operation with other organisations, rather than compete with them. It focuses on the benefits that can be gained through co-operation and how to manage the co-operation so as to realise them. Companies have looked increasingly to co-operate with each other due to limitations of coping successfully on their own with a world where markets are becoming global in scope, technologies are changing rapidly, huge investment funds are demanded to develop new products with ever shortening life cycles, and the economic scene is becoming characterised by high uncertainty and turbulence (Child and Faulkner, 1998, pp. 1-13).

Along with many other industries, the UK upstream oil and gas industry has been adopting collaborative strategy since 1990s. The upstream oil and gas industry is one of the most important industries in the UK. The industry has shown tremendous activity in respect of oil exploration, production, employment and revenue earning for the last two decades. More than 2000 companies, whose size varies from very large to very small have been working in the North Sea oil and gas industry. An estimated Gross Value Added (GVA is the measure now used by National Accounts to assess the contribution of industries, rather than Gross Domestic Product)) share from the oil and gas industry is 2.7% in 2001. The industry supports 270,000 jobs



throughout the UK in around 6,000 businesses and has accounted for 18% of total UK industrial investment over the last decade (UKOOA, 2002).

In the early 1990s the industry faced an economic crisis because of the trouble in industrial relationships, excessively high oil production costs, and above all the oil price fell to its lowest level of since the 1980s. The future of the industry looked somewhat bleak. For sustainable development of the industry it became very important to reduce costs and develop new technology (Bower & Young, 1995). There was recognition that by working together rather than having traditional adversarial relationships with other companies, the UK oil industry could lower its costs and increase its chances of long term survival. Since 1990 many of the industry players adopted alliances and partnering strategies, and several alliances have been created in the UK upstream (exploration and production) oil and gas industry (Green and Keogh, 2000).

‘Alliances and Partnering’ are on-going relationships between organisations that involve a commitment over an extended period of time and a mutual sharing of risks and rewards (Ellram, 1995). Spekman (1998) defines a strategic alliance as “a close, long-term, mutually beneficial agreement between two or more partners in which resources, knowledge, and capabilities are shared with the objective of enhancing the position of each partner”. Lamming (1993) suggests that from the partnering relationship the suppliers gain increased order security, improved forward order cover, reduced uncertainty, and other benefits. At the same time, purchasers hope to achieve advantages, including improved supply continuity, a better match between the supplier’s sale specification and the purchaser’s purchase specification, and reduced long-term costs. Alliances and partnering strategy can be of value to an organisation by reducing transaction cost and providing the benefit of integration without ownership (Macbeth and Ferguson, 1994, pp. 32-95)).



However, it has also been suggested that formation of alliances can entail a number of problems. For example, alliances are difficult to manage, require considerable time and effort of top management as well as others in the organisation and may decrease organisational flexibility. Alliances often fail, and it may be claimed that benefits are never exploited owing to lack of trust or co-operation, goal incongruency, and environmental change (Drago, 1997). Bleeke and Ernst (1993) mentioned that, despite nearly exponential growth, the landscape is littered with failures; success rates are low, with estimates suggesting that as many as 60 per cent of alliances fail. Cox *et.al* (2000, pp. 1-19) suggest that there are many circumstances under which buyers do not benefit by making collaborative agreements with suppliers and argue that in many circumstances buyers need to use power for leveraging value appropriation from buyer-supplier exchange relationships

## **1.2 Rationale of the Study**

Over the last 12 years, the UK upstream oil and gas industry has experienced different types of alliances and partnering relationships depending on the purpose and scope of the projects. North Sea alliances may be characterised by long term relationships, typically 3-5 years, in some cases intended to last for “life of field” which could be 15 to 20 years. The majority of the relationships were or are concerned with facilities or subsea engineering (design through fabrication, installation and maintenance) or with provision of well construction services (drilling and well maintenance). However, there are alliances for provision of other services including management of production chemicals, accounting services, information management and information systems, supply management etc. Different types of companies have been involved in those alliances: there are alliances between contractors and contractors, contractors and operators, or operators and operators.

There have been a number of highly successful alliances e.g. development of the Andrew field facility. The estimated cost to develop Andrew’s facilities was £450



millions. With the formation of a facilities alliance between BP and seven other contractors, and their commitment to work collaboratively, the cost was reduced to £290 millions and production of oil commenced six months ahead of schedule (Knott, 1996). However there are also occasions when an alliance in the North Sea Industry has been terminated before it has run its term, and therefore could be said to have failed. For example, several alliances were created to undertake the development of BP's Schiehallion oil field. The "Atlantic Frontier Alliance" between BP, Brown & Root, Harland & Wolff and Single Buoy Mooring to construct a floating production, storage and off loading vessel (FPSO) was terminated in December 1996 because "the parties did not feel comfortable working with that contractual arrangement" (Cresswell, 1997). The alliance was replaced by a conventional contractual arrangement between the companies, with Brown & Root as the lead contractor. Again, of the several alliances created to undertake BP's Eastern Trough Area Project (ETAP), the well construction alliance is said to have run into difficulties because "the challenges were somewhat under-estimated and problems were encountered with drilling these highly technologically advanced wells. There have been considerable cost overruns ... the risk/reward part of the alliance was cancelled..... the old fashioned style of contracts was introduced but with a revitalised and modern way of operating them" (Potter, 1998). On occasions, members of a long running alliance have been changed as the results of a re-tendering exercise (e.g. BP's replacement of Brown & Root by the Wood Group in May 1999).

It has been suggested, however that in general, alliances in the UK oil and gas industry have gained considerable success. Green and Keogh (2000), after analysing relevant oil industry papers, suggested that the majority of the oil and gas companies and their contractors now embrace, at least partially, a more collaborative style of working. Furthermore, Segal Quince Wicksteed Ltd (1997), after surveying the Small and Medium Enterprises in the UK oil industry, concluded that "Alliancing is here to stay and broadly welcomed by operators and contractors."



Now, the questions may be raised as to how the success and failure of alliances have been measured in the UK oil and gas industry? What are the distinguishing features of alliancing and partnering in the UK oil and gas industry? What are the factors that enable success or are barriers to success? To what extent have success or failure factors been present in alliances in the UK upstream oil and gas industry?

Little academic research appears to have been carried out to answer these questions for the oil and gas industry. The literature review shows that many articles have been written on collaborative relationships. For example, Sako (1992, pp.221-245) characterised “obligational” (collaborative) relationships compared with “arms length” relationships as the presence of single or very few suppliers, long lasting good working relationships, good communication, and high degree of good will trust. Green (1994) suggested that an essential feature of collaborative relationships is that the involved parties should have common objectives and shared risk and reward to improve overall performance. Vangen and Huxham (1998) suggest that commitment, resources, trust, aims/objectives and priorities, are the five typical areas where people should be concerned in collaborative relationships. However, most of the literature on alliancing and partnering is based on theory, and very little empirical data is available on perceived distinguishing characteristics or critical success and failure factors of alliancing and partnering in the UK oil and gas industry. It was considered that availability of that information would be very useful for organisations that have been adopting an alliancing and partnering strategy. It would also provide a valuable source of guidance for organisations wishing to create alliancing and partnering both within and outside the industry. As has been mentioned, some alliances in the UK upstream oil and gas industry were cancelled before they had run their term. It may have been informative to study what was going on in those ‘cancelled alliances’, however that was not what we planned to do. Thus the PhD study was undertaken with the following initial objectives:

1. To identify criteria for assessing the success of alliances or partnering in the upstream oil and gas industry
2. To determine the factors which are present in successful alliances or partnering in the UK upstream oil and gas industry
3. To explore the role of small and medium enterprises in successful alliances or partnering.

### **1.3 Initial Survey**

The Offshore Europe '99, a biennial oil and gas exhibition and conference, took place in Aberdeen in September 1999 and it presented a situation where many knowledgeable people from the industry were concentrated in one place. The opportunity was taken to carry out an early initial survey in order to gather data on the research topic. Data was also collected from two other sources i.e. the CRINE (Cost Reduction Initiative for the New Era) champions group and people at supervisory level or below who attended safety training courses at Robert Gordon Institute of Technology for this opportunistic survey. These two groups were included in the survey to increase the number of respondents, obtain experts' opinions as well as to incorporate the types of people who were not sufficiently represented in the Offshore Europe Exhibition survey.

### **1.4 Second Phase Study**

The initial survey produced many interesting findings on the distinguishing characteristics, criteria of success and failure, and critical success and failure factors of alliancing and partnering in the UK oil and gas industry. From the survey it appeared that 'presence of trust' was perceived as the vital factor for making collaborative relationships successful by the oil and gas industry. The literature review also showed that, in general, trust was viewed as fundamental to the existence of any collaborative working arrangement (Spekman, 1988; Wolff, 1994; Parkhi, 1998; Vangen and Huxham, 1998). However, the literature review showed



little evidence of detailed work on the perceptions of the people actually involved in collaborative relationships, of what is meant by trust and what are the effects of low and high levels of trust particularly in the oil and gas industry. Therefore, it was decided to conduct another survey to investigate perception of trust and its effects on collaborative relationships in the UK oil and gas industry. The change of direction had the following effects on the original objectives:

- Objective 3 (the role of SMEs) has not been pursued
- A new objective “ To explore the perception of trust and its role in alliances and partnering relationships in the UK upstream oil and gas industry” was added.

### **1.5 Ultimate Objectives of the PhD Research**

As will become evident the whole PhD research is divided into two phases. The first phase study identifies the distinguishing features, criteria of success, criteria of failure, critical success factors, critical failure factors of alliances and partnering in the UK oil and gas industry. The second phase study investigates the perception of trust and its effects in alliancing and partnering in the upstream oil and gas industry and aims to answer the following research questions: What do people, who work in alliances in the UK upstream oil and gas industry, mean when they talk about trust? What are the components of trust in oil and gas industry? What do people perceive as the effects of presence or absence of trust in relationships? What do people consider needs to be done to maintain or increase levels of trust in relationships? What is the relationship between perceived level of trust within an alliance and its perceived level of success? Having made the changes in the original objectives, the final objectives of the PhD study turned out to be as follows:

1. To identify criteria for assessing the success of alliances or partnering in the upstream oil and gas industry
2. To determine the factors which are present in successful alliances or partnering in the UK upstream oil and gas industry



3. To explore the perception of trust and its role in alliances and partnering relationships in the UK upstream oil and gas industry

## **1.6 Brief Summary of the Path Through the Research**

This section gives an overview of the route taken by the research and introduces some of the methodological decisions taken along the way. Detailed discussions of the work done and of the decisions taken are available in the appropriate chapters (4, 5 & 9).

The research set out to study the phenomenon of the collaborative relationships, between oil companies and their major contractors in the North Sea Oil and Gas Industry, which were popular in the 1990s and which tended to have the label “partnering” or “alliancing”. Many such relationships were set up at the time and were a topic of great interest, but the style of implementation of the ideas and the success of the relationships varied with the companies and people involved. The location of the major companies in Aberdeen further encouraged the study of the topic.

The first phase of the work was exploratory and started with a review of literature on collaboration, on strategic alliances, on the evolution of the structure of the North Sea Oil and Gas Industry, and on the implementation of “alliances and partnering” in that industry (see Chapters 2 & 3).

As part of the first phase, the opportunity was taken to gather opinions from the people who attended the Offshore Europe '99 exhibition and conference in Aberdeen in September 1999. This event provided a rare situation when a large number of people from the North Sea Oil and Gas Industry would be gathered together. The main aim of the survey was to gather opinions on:-

- Characteristics which might distinguish “alliances and partnering” from conventional relationships

- Criteria which might indicate success of a “alliances and partnering” relationship
- Criteria which might indicate failure of a “alliances and partnering” relationship
- Factors whose presence might encourage success of a “alliances and partnering” relationship
- Factors whose presence might lead to failure of a “alliances and partnering” relationship

To conduct the survey, a short self-administered questionnaire, with mainly open questions, was used because this seemed the most appropriate and convenient way to access a large number of people at an exhibition. To increase the sample size the questionnaire was also given to two other defined groups of people, “CRINE Champions” and attendees at a series of oil industry safety courses. (see Chapter 5 ).

A method of coding and analysis of the large number of unstructured “free text” responses arising from the survey was developed. The analysis yielded tables of the most popular concepts used as distinguishing factors, success and failure criteria and success and failure factors. (see Chapters 6 & 7).

The study suggests that people in the industry perceive that trusting attitudes/behaviour, shared aligned goals, presence of open behaviour, presence of shared knowledge, clear role, commitment, co-operative behaviour and honesty are important critical success factors for collaborative relationships. Among the critical success factors for collaborative relationships indicated in the literature and arising from the phase 1 survey, “presence of trust” was mentioned frequently. When considering the options for the second, and more focussed phase of the research it was therefore decided that the role of trust in collaborative relationships should be the area of concern. Although it was recognised that many of the other ‘issues’ deserved to be investigated further and were to be left for other social scientists. Again, the “collaborative relationships” in the North Sea Oil and Gas Industry were



the potential source of empirical data on the topic. The hope was that this study might help to illuminate the links between trust and success.

The second phase commenced with a review of the literature on trust, especially trust within organisations, which identified a range of types of trust, the likely effects of high or low trust and ways in which trust can be encouraged or discouraged (see Chapter 8). As a result of the literature review, it was decided to study the following aspects of the role of trust, using a set of current “collaborative relationships” in the North Sea Oil and Gas Industry :

- The types of trust which apply to these relationships i.e. what people mean when they talk about trust
- The effects of the presence of trust
- Factors which encourage trust
- Factors which threaten trust
- Correlation between trust and success in the relationships under study

After some searching, a set of five relationships were selected for the study. It was realised that information on the role of trust in current relationships could only be collected through the opinions and perceptions of the people involved, and it was decided that another self-administered questionnaire should be used to gather this information. This questionnaire used “attitude statements” rather than open questions (see Chapters 9 and 10). The choice of attitude statements was informed by the literature review and by some of the concepts arising from the responses to the phase 1 survey.

A description of the analysis of responses to the second survey can be found in chapters 11 & 12. A key result from the analysis was that there appeared to be a strong correlation between perceived level of success and perceived level of trust.



During the analysis it was realised that responses to one of the sets of questions could also be used as a measure of a person's propensity to trust.

The concluding chapters of the thesis bring together the overall conclusions and recommendations, and reflect on the lessons learned during the research process.

### **1.7 Organisation of the Thesis**

This thesis is composed of 15 chapters and each of the chapters is again divided into sections to separate issues illustrated in the chapter. The thesis begins with an introductory chapter which discusses background and rationale of the research, enumerates objectives of both the studies of the PhD research and a brief summary of the path through the research. Chapter 2 gives an overview of the UK upstream oil and gas industry, where two separate surveys were conducted for the research, including a short summary of the industry makeup, activities, and economic importance.

Chapter 3 provides a review of related articles on alliances and partnering. The principal objective of this chapter is to provide a holistic overview of partnering, alliancing and similar types of relationships within and out with the oil and gas industry. First of all it discusses different theories behind formation of collaborative relationships. Then it discusses the views of different social scientists on definitions, benefits, drawbacks, and management issues of alliances and partnering. Then it takes some practical examples of alliances and partnering or similar kind of relationships from different industries and examines how they got success or failures. This is followed by an examination of the circumstances in the UK oil and gas industry which encouraged adoption of alliances and partnering strategy. Some examples of alliances and partnering are also given. At the end it sets out the logic of conducting the first phase study.

Chapter 4 and 5 are about research methodologies. Chapter 5 takes a general look at different methods, approaches, and techniques used in social science research e.g.



deductive and inductive method; descriptive, analytical, evaluative research; qualitative and quantitative research, grounded theory approach etc. Then it examines different scaling techniques, sampling techniques and data collection methods with their pros and cons. Three other important issues i.e. validity, reliability and ethical issues are also considered in this chapter. After examining general research methods, chapter 5 discusses different methods which were used in the first phase study. Finally it illustrates the methods adopted in managing and analysing the data, which was mainly qualitative in nature.

Chapter 6 presents the findings of the first phase study and interprets the results. First of all the respondents' demography including their company types, job levels, company sizes, and alliance involvement are presented. Then it presents respondents' opinions on distinguishing characteristics, criteria of success, criteria of failure, critical success factors, critical failure factors of alliancing and partnering in the oil and gas industry. Respondents' opinions on the usefulness of alliances and partnering are presented at the end of the chapter.

Chapter 7 provides a discussion of the findings of the first phase study. It compares and contrasts the respondents' opinions on distinguishing characteristics, criteria of success and failure, critical success and failure factors, in the light of other researches, the theories, propositions, opinions that have been put forward by different social scientists on the subject matter and researchers own opinions. Some weak points of the study are also discussed in this chapter.

Chapter 8 critically analyses the relevant literature on trust and its impact on collaborative relationships. First of all it reviews the meaning of trust, that is, how trust has been defined and classified by different social scientists. Then it examines the effects of presence or absence of trust in collaborative relationships. Finally it explores different conditions or factors which enable trust to grow as well as the conditions which are barriers or diminish trust between collaborative parties.



Chapter 9 is about the research methodologies used in the second phase study. First of all it illustrates a sample selection process and its rationale. Then it describes the steps followed in data collection methods i.e. development and distribution of questionnaires and their follow-up. This is followed by an illustration of different issues of data management e.g. database design, data entry, dealing with missing values and use of connectivity software. Different statistical analyses/tests which were used to analyse data of the second phase study e.g. analysis of variance, Friedman's test and cluster analysis are illustrated in this chapter. The chapter ends with a short description of the steps taken to minimise measurement errors.

Chapter 10 gives a brief profile of different relationships surveyed in the second phase study.

Chapter 11 presents the findings of the second phase. It begins with the presentation of respondents' demography in terms of their job levels, organisation types, working environments and involvement with collaborative relationships. Then it provides respondents' opinions on the meaning of trust and illustrates how those opinions were used to divide them into different groups depending on their trusting attitudes. This is followed by the presentation of respondents' opinion on the effects of presence of trust in collaborative relationships. Then findings on the factors which enable trust and factors which diminish trust are presented with their relative importance. Findings on the relationship between trust and success in collaborative relationships are shown at the end of the chapter.

Chapter 12 makes a critical analysis of the findings of the second phase study. It discusses how people give priority to one group of trust over other, when they think or speak about trust. Then it offers an interesting discussion on peoples' attitude to trust and how it influences their behaviour. The effects of trust are discussed by dividing them into different groups according to their priority. This is followed by

discussions on the factors which enable trust and the factors which can threaten trust between collaborative partners. Finally, relationship between trust and success are discussed in the light of the finding.

Chapter 13 illustrates possible shortcomings of the PhD research namely use of non-random sampling, absence of interviews, and limitations of questionnaire. Then it outlines the contribution of the PhD research to knowledge.

Chapter 14 concludes the thesis by providing a summary of the findings. Then it illustrates the reflection and lessons learned from the research. Recommendations for future research are also made in the light of the findings of the present research. Finally chapter 15 cites the references which were used in the thesis.



## **CHAPTER 2**

### **THE UK UPSTREAM OIL AND GAS INDUSTRY**

#### **2.1 Introduction**

Oil and gas are the most important natural resources to be discovered in the UK in the 20th century. Oil and gas and their derivatives enable the production of most of the goods used by people in their home, including plastics, cleaning products and synthetic fibres for clothing and furniture. They provide energy and essential chemicals for transport, industry, and homes, as well as earning valuable tax and export revenues to support the UK economy. The first commercial discovery of petroleum was made in 1918 in Nottinghamshire, Central England UK. In 1965, the first significant discovery of offshore gas was made in the West Sole Field located in the Southern Basin which is off the coast of England near Hull. It was the first UK offshore gas field to come into production. The first offshore oil was found in the Arbroath field, Scotland in late 1969 (DTI, 1999). The UK offshore oil and gas industry has grown gradually and is now in its mature stage. Many of the fields have been developed using highly advanced engineering techniques. According to United Kingdom Offshore Operators Association (UKOOA) a record number of 223 offshore fields were in production at the end of 2000. Of the 223 fields, 112 were producing oil, 93 gas and 18 condensate (UKOOA, 2002).

#### **2.2 Industry Activities**

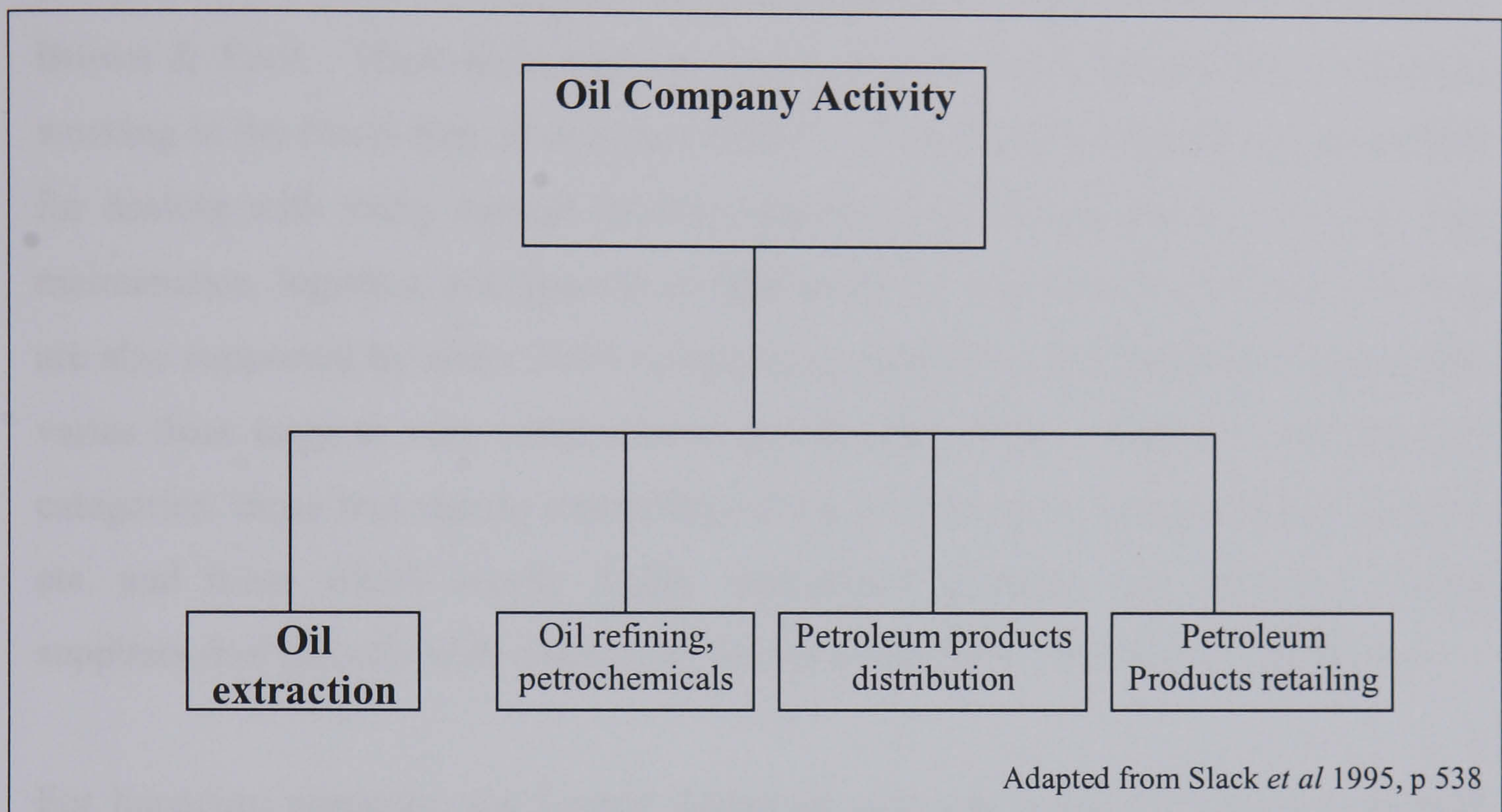
The UK offshore oil and gas industry is involved in a highly complex business. This includes identifying and developing reserves in one of the world's most inhospitable environments, extraction of oil and gas from the developed reserves usually located thousands of metres beneath the sea bed, refining the oil and gas products, and distributing final product to the customers. Activities of the UK oil industry are shown in Figure 2.1. Activities up to extraction of oil from offshore environment are at the 'upstream' end of the industry. Refining, distribution and retailing are at the 'downstream' end. It is the 'upstream' end of the industry which is the focus of



the PhD study. The offshore upstream oil and gas industry is a multifaceted production system, involving highly sophisticated technologies. Within this area there exists a diverse and complex network of organisations, representing a wide range of industrial cultures and

Figure 2.1

UK oil and gas industry activities



expertise capable of working in extremely harsh environments. The offshore industry production facilities have to be designed to withstand wind gusts of 180km/hour and waves 30 metres high. Other problems include the ever-present salt water corrosion, and fouling by marine organisms. Some of the offshore activities are seismic surveys, geological and geophysical surveys, drilling, construction, testing and maintenance of wells, construction and maintenance of platforms, support services, helicopter services etc (Bower and Keogh, 1996).

### 2.3 Makeup of the UK Upstream Oil and Gas Industry

Within the industrial network of the oil and gas industry in the UK, the players can be broadly organised into three categories, operators, contractors and sub-contractors/suppliers. The operators are the companies which both license the oil and gas rights to acreage, and also take direct legal responsibility for exploiting



them. They include such organisations as BP, Shell, Total Fina Elf, Exxon. About 32 large multinational operating companies have been working in the North of Scotland area. The operators' activities heavily rely on specialist contractors and suppliers who provide many services needed for the offshore operations. Contractors include a number of large companies which contract directly with the operators to arrange and provide services. Contractors include, for instance, Schlumberger, Halliburton, Brown & Root. There have been approximately 50 major contracting companies working in the North Sea oil and gas industry. These contractors take responsibility for dealing with many aspects of field operations including drilling, construction, maintenance, logistics, and general oil-field support. Further, the industry activities are also supported by some 2000 companies (contractors and suppliers) whose size varies from large to very small (Green and Keogh, 1998). Suppliers fall into two categories: those that supply commodity items such as nuts, bolts, delivery services etc. and those which supply highly specialised products and services. These suppliers deal directly with contractors and in some cases, directly with operators.

For licencing purposes, the United Kingdom continental shelf (UKCS) is divided into quadrants, the area of one degree latitude by one degree longitude. Each quadrant is further divided into thirty blocks of approximately 250 square km. Companies are invited to apply for the right to explore blocks selected by the Department of Trade and Industry. Licenses are awarded to British registered companies judged to have good operational records, well-prepared exploration and environmental plans, and financial soundness (DTI, 1999).

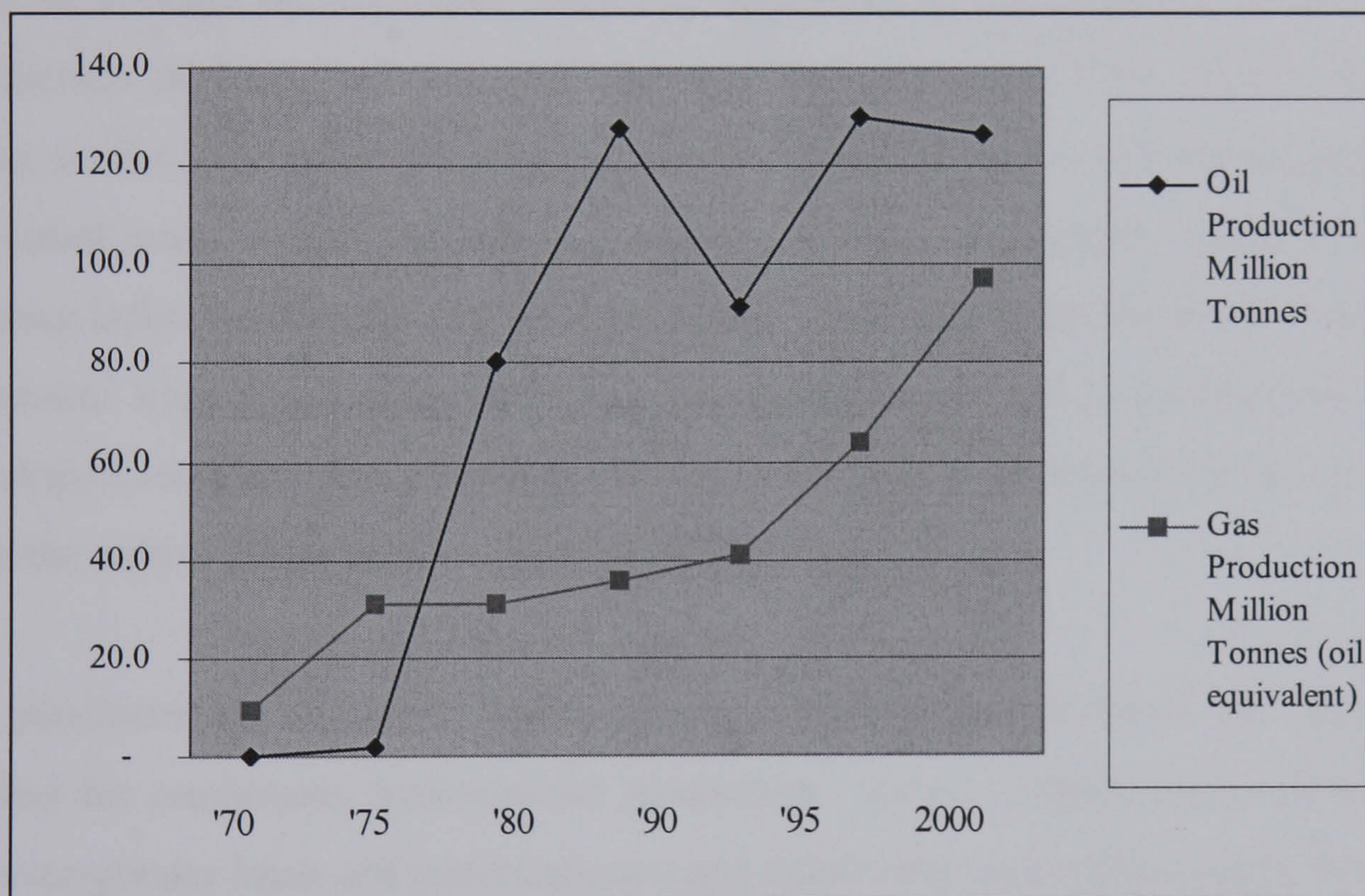
## **2.4 UK Offshore Oil and Gas Production**

In 1965, the first significant discovery of offshore gas was in West Sole Field located in the Southern Basin. Gas production remained fairly static until 1989, and since then it has increased each year to reach a new annual level. Oil was first produced, in any significant quantity in 1976. Production climbed sharply between 1976 and the mid 1980s, but fell back because of the Piper Alpha tragedy in 1988 (The Piper Alpha oil production platform was destroyed in a series of explosions on



the night of 6 July 1988. In the inferno, 165 of the 226 persons on board perished). Oil production began to recover in 1992 and, with a particularly strong rise in 1994, reached a peak in 1995. Over the next two years, oil production fell back slightly, but grew to a new record level in 1998. The record levels of production were maintained in 2000, with 126 million tonnes of oil and natural gas liquid (NGLs), and 115 billion cubic metres gas being produced. Although oil production was 8% lower than 1999, increased gas production helped to ensure that combined production in 2000 was only 1% lower than the previous year (DTI, 1990; DTI, 2000). Trends in both oil and gas production are illustrated in chart 2.1.

**Figure 2.2** Trends of oil and gas production from 1970 to 2000 in the UK



Source UKOOA, 2000

#### **2.4.1 Production platforms**

The offshore production facilities are supported by offshore platforms or floating, production, storage and offloading (FPSO) vessels. Most oil and gas production platforms in offshore Britain rest on steel supports known as 'jackets'. A small number of platforms are fabricated from concrete. The steel jacket, fabricated from welded pipe, is pinned to the sea floor with steel piles. Above it are prefabricated



units or modules providing accommodation and housing various facilities including gas turbine generating sets. Towering above the modules are the drilling rig derrick, the flare stack in some designs and service cranes. Horizontal surfaces are taken up by store areas, drilling pipe deck and the vital helicopter pad. Several platforms may have to be installed to exploit a large field, but where the capacity of an existing platform permits, sub sea collecting systems linked to it by pipelines are used employing the most modern technology. Alternatively, a sub sea collection system may be linked via a production riser to a FSPO vessel (UKOOA, 2002).

The scale of oil and gas construction projects is vast, especially for the oil fields of the northern North Sea. The large fields discovered, for example, in the early 1970s took an average of five years from the beginning of development to the date of production start-up, and each cost over a billion pounds in 1987 prices. In recent years, as the North Sea industry has reached maturity, most new developments do not entail massive new production platforms. Instead, the tendency has been to use existing infrastructure for new developments. This has two benefits - it extends the economic life of that infrastructure, and means that small accumulations can be developed economically. Most North Sea finds now are relatively small compared with the earlier giants such as Forties and Brent.

Oil platforms are industrial towns at sea, carrying the personnel and equipment needed for continuous hydrocarbon production. Giant floating cranes designed to lift ever-greater loads are commissioned and many other specialised crafts have to be developed to establish and service the offshore industry. The most important functions are drilling, preparing water or gas for injection into the reservoir, processing the oil and gas before sending it ashore, and cleaning the produced water for disposal into the sea. The maintenance of platforms involves a wide range of services including engineering, electrical work, painting, diving, catering, medical, and helicopter transportation. The development of new oil and gas fields, installation and maintenance of platforms and production and transportation of gas and oil requires hundreds of people, with a typical cost of hundreds of million



pounds. The offshore activities are supported by onshore supply bases, which communicate with platforms, transfer personnel and ensure delivery of food and equipment. A typical large oilfield platform complex houses a staff of about 100 men and women offshore, supported by other staff onshore. The logistics involved are phenomenal. One major operator transports more than 5000 people every month to and from their offshore installations; the same operator transports around 300,000 tonnes of cargo every year - everything from stationery, fresh food and vegetables to computers, gas turbines, generators and specialised well equipment. The same operator segregates and disposes of 35,000 tonnes of waste annually. All rubbish is brought back to shore for responsible disposal (UKOOA, 2000; UKOOA 2000 a).

#### ***2.4.2 Extraction of oil and gas***

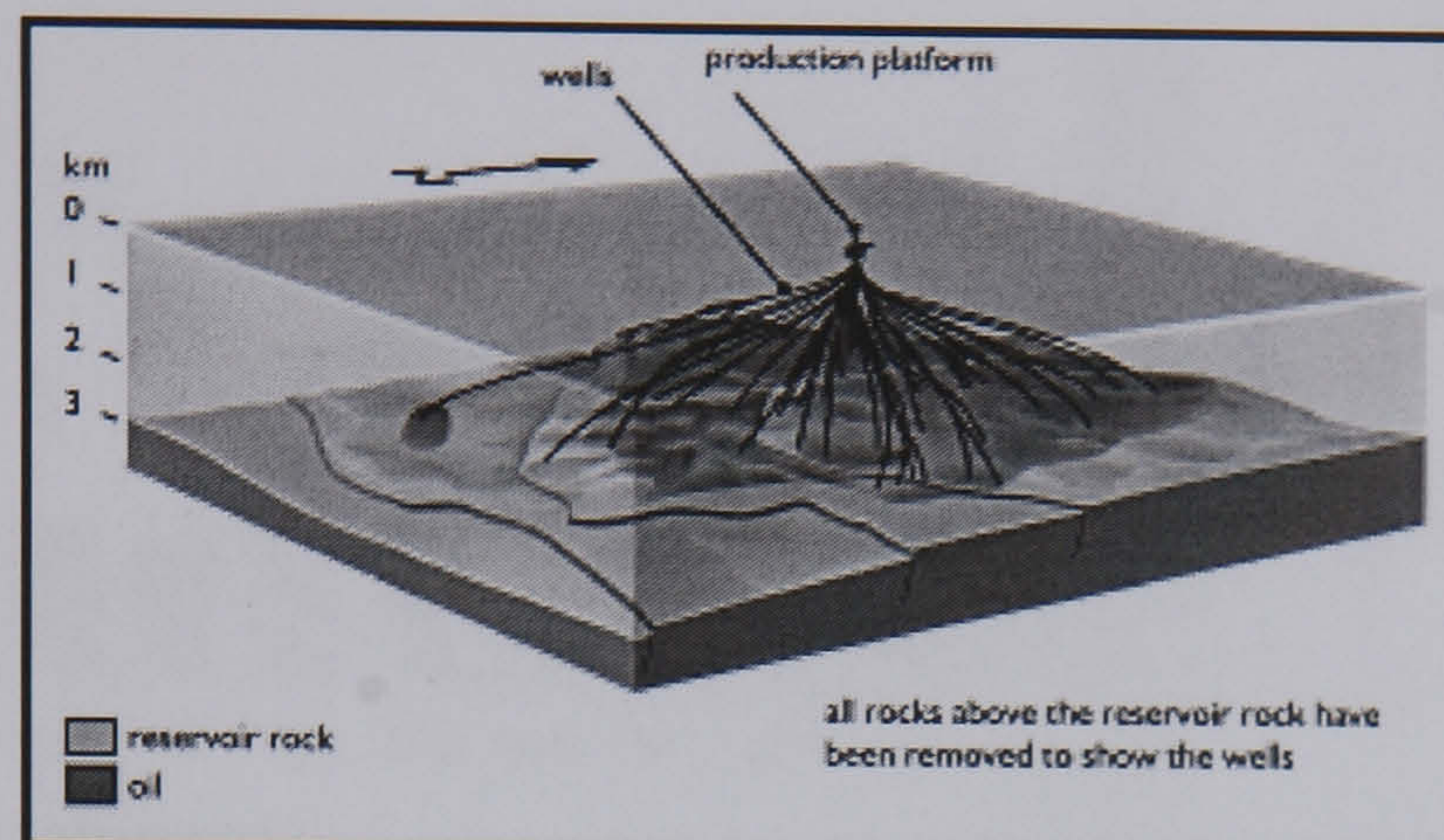
Large-scale geological structures that hold oil and gas reservoirs are located beneath non-productive rocks below the sea. Geological methods e.g. geomagnetic survey or seismic surveys are used to produce pictures of the patterns of the hidden rocks that might hold oil and gas reservoirs. The seismic maps are used to describe the topology of rock unit to help improve the position of production wells, and to enable the fields to be drained with maximum efficiency. Two basic types of drilling rigs - fixed platform rigs and mobile rigs are used to construct the wells. Fixed platform rigs are installed on large offshore platforms which remain in place for many years. Mobile rigs comprise two types: jack-up rigs used in shallow water and semi-submersible rigs used in deeper water. In very deep water drilling ships are used. To develop offshore oil fields as economically as possible, numerous directional wells radiate out from a single rig to drain a large area of reservoir (Figure 2.2).

Most offshore crude oil and gas is brought to shore by pipelines for processing. In onshore terminals, carefully landscaped to minimise their environmental impact, crude oil and gas undergo further processing. Any remaining water and gas are removed from oil which is stored at the terminal before transport to refineries. Gas is dried and then given its characteristic smell before entering the national grid (UKOOA, 2002)



Figure 2.3

### Numerous wells from a single platform



(Source UKOOA, 2002)

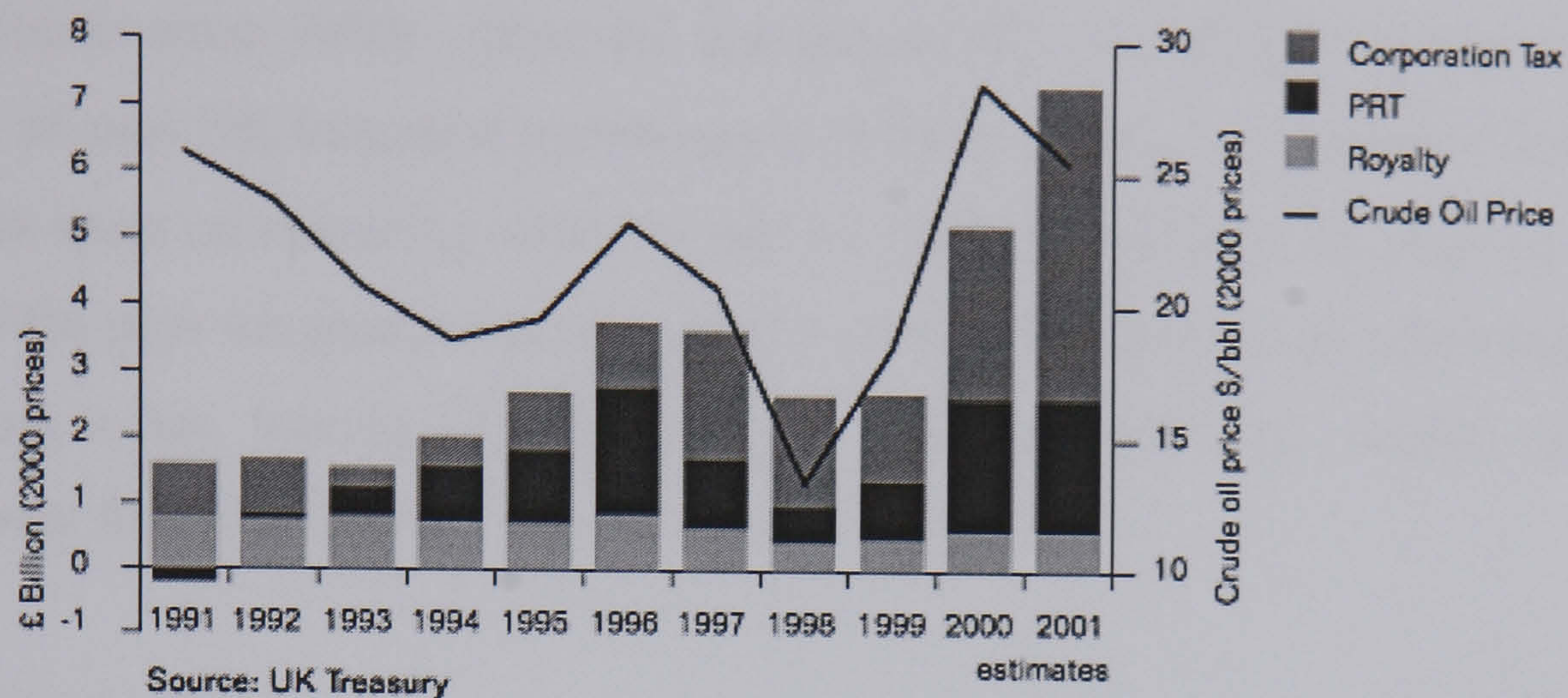
## 2.5 Economic Importance of the Industry

### 2.5.1 Government revenue

There is little doubt about the importance of the oil and gas industry to the UK economy. The oil and gas sector's share of total Gross Value Added (GVA) rose between 1992 and 1996 with increased production but fell to 1.7% by 1998 (Figure 2.3). Oil and gas GVA rose with the rise in prices to 1.9% in 1999, and to an estimated 2.7% in 2000. The direct impact of the oil and gas production has improved the UK balance of payments considerably. The net contribution of the trade in oil was £0.3 billion in 1980, rising steadily to £8 billion by 1985. It has not reached that level since then due to the fall in prices, but has always remained positive. The contribution to the balance of payment is estimated to have risen from around £4.0 billion in 1999 to some £6.0 billion in 2000 (DTI, 2001) and £4.3 billion in 2001 (UKOOA, 2002 a). Since mid 1960s the Government has received a total £175 billion (2001 prices) in taxes from the industry.



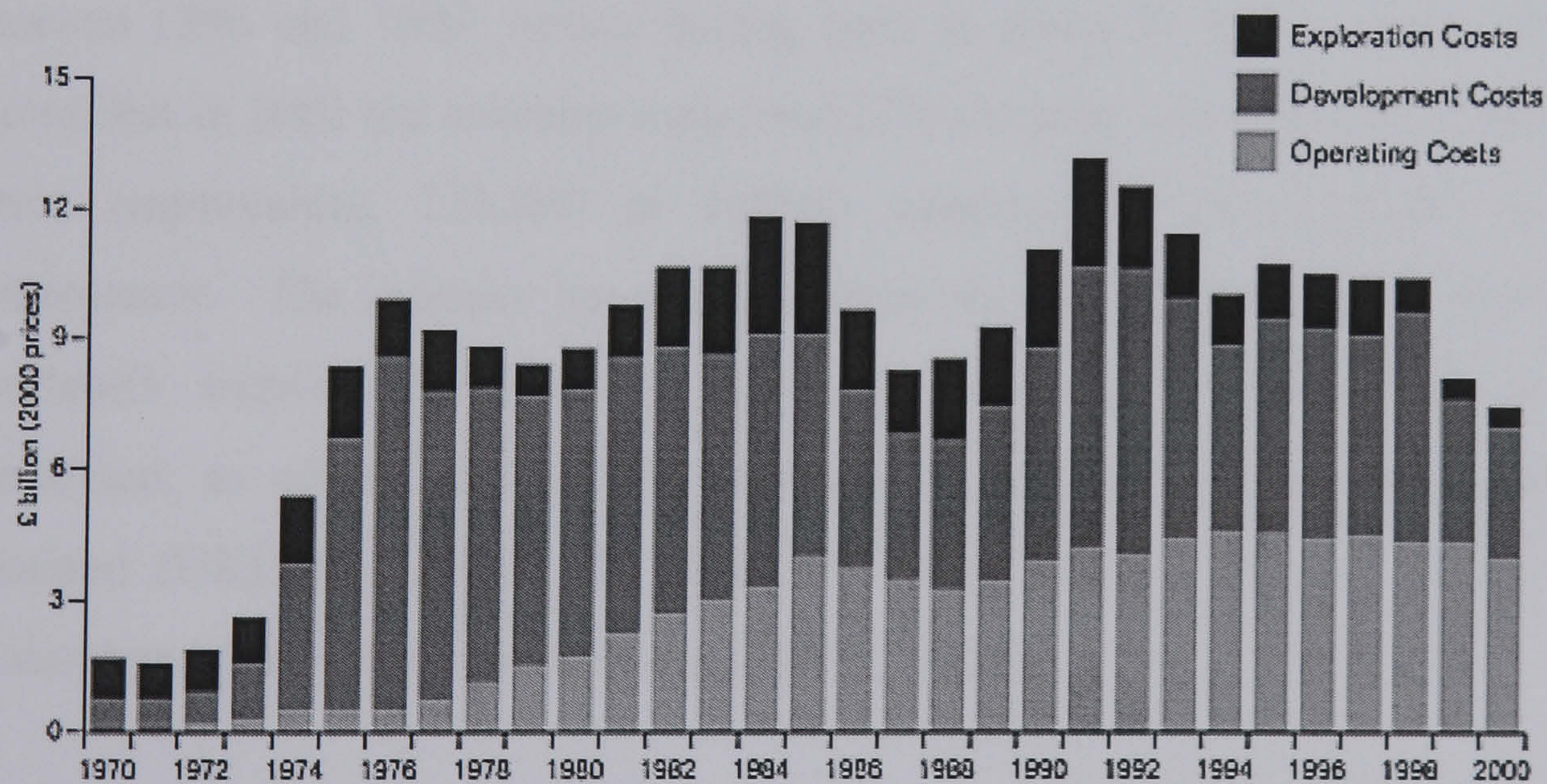
**Figure 2.4** Government revenue from oil and gas industry



The UK Economy has benefited by some £170 billion in offshore taxes since UKCS production first started. Fiscal revenues are affected by oil and gas prices as well as expenditures. UKCS production is subject to Royalty, Petroleum Revenue Tax and Ring-fenced Corporation Tax, at aggregate rates from 30% to 70%.

Source UKOOA, 2002

**Figure 2.5** Investment from oil and industry



The UKCS has received £190 billion (2000 prices) of investment since exploration began. A further £100 billion has been spent on operating costs which, at £4 billion/yr, now make up half annual expenditure. We expect operating costs to continue at some £4 billion/yr for the next 5 to 10 years. In 2000, the industry accounted for over 13% of all UK capital investment (17% over last 10 years).

Source: DTI/UKOOA



### ***2.5.2 Investment***

The industry has invested £200 billion (2001 prices) in exploration and development since 1960s. Over the last decade the industry has accounted for 18 percent of total UK industrial investment (UKOOA, 2002 a). A further £100 billion has been spent on operating costs. It may be noted that of the total price of a barrel of oil, 71% pays for production cost (exploration, development and operating), some 16% goes to tax, leaving 13% for producer (UKOOA, 2002 b). Figure 2.4 shows investment from the industry since exploration began.

### ***2.5.3 Employment***

The industry also makes a significant contribution to employment. The industry supports 270,000 jobs directly or indirectly throughout the UK in around 6,000 businesses (UKOOA, 2002). The office for National Statistics (ONS) gives figures for employment classified to the oil and gas extraction sectors, which includes not only those engaged in extraction offshore and onshore but also certain classes of services peculiar to the industry. Statistics from ONS show employment at some 27,000 in 1978, peaking near 37,000 in 1990 and 1991, before falling sharply to around 25,500 in 1994 and 1995. Employment then recovered to near 29,000 between 1996 and 1998, before falling back to about 26,400 in 2000. Figure 2.5 shows that in 2001 the industry supported 270,000 jobs, out of which 26,000 were in direct employment, 131,000 in indirect employment and 113,000 in induced employment. The industry has made a particular contribution to the North East of Scotland's employment market, where the research for this PhD study was conducted, as nearly half of UK upstream oil and gas related employment is in Scotland (UKOOA, 2000). In terms of energy supply, 85% of nation's energy production is dependent on oil and gas (DTI, 2001).



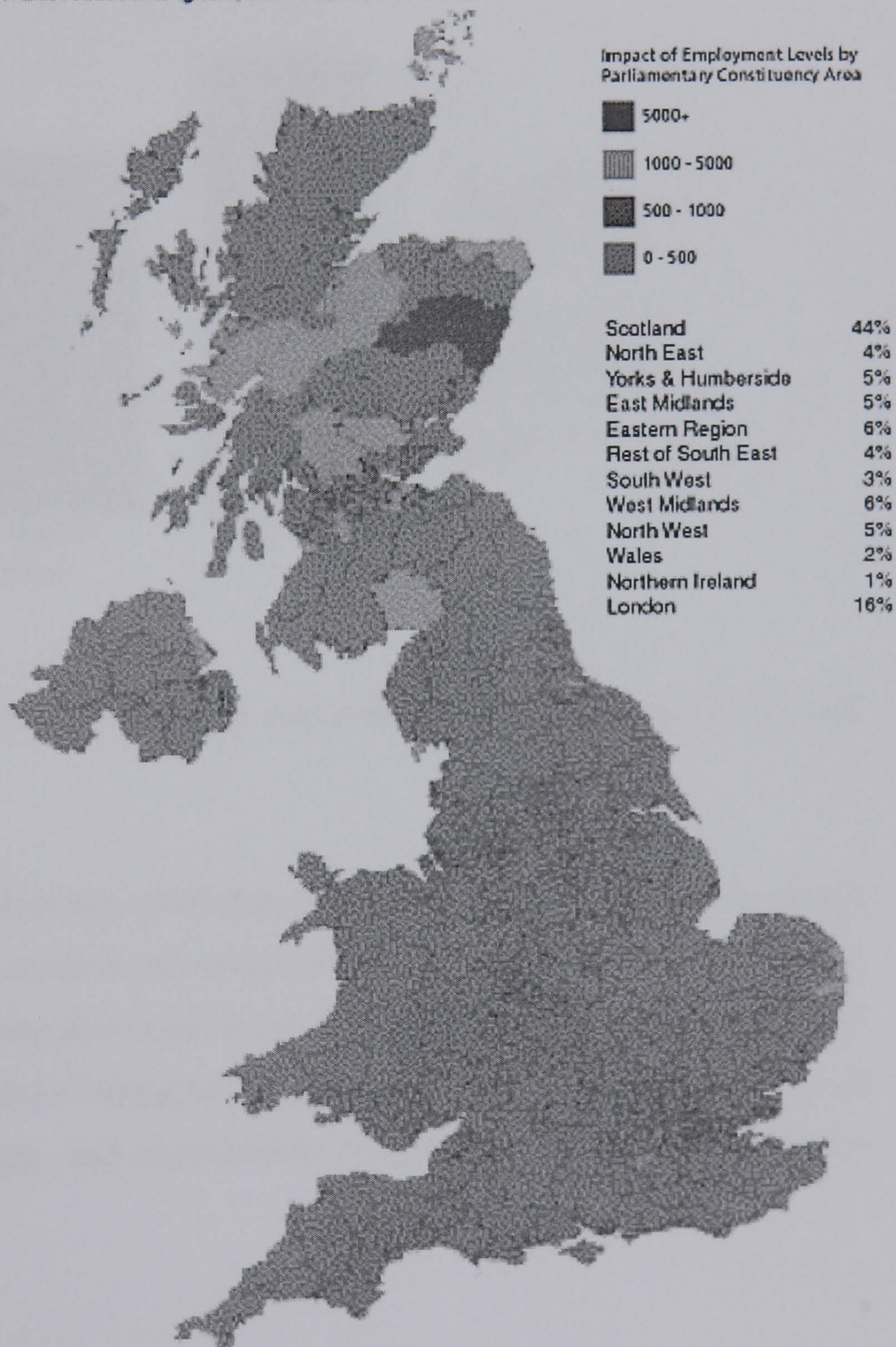
Figure 2.6

# Breakdown of UK employment supporting the offshore oil and gas industry

Breakdown of UK employment supporting the offshore oil and gas industry

Direct	Oil & gas companies - direct employment	26,000
Indirect	Suppliers & contractors employed	131,000
Induced	Induced employment	113,000
TOTAL		270,000

Close to half of UK upstream oil and gas related employment is in Scotland.  
Other areas concentrate on East coast of England, the Midlands and London.



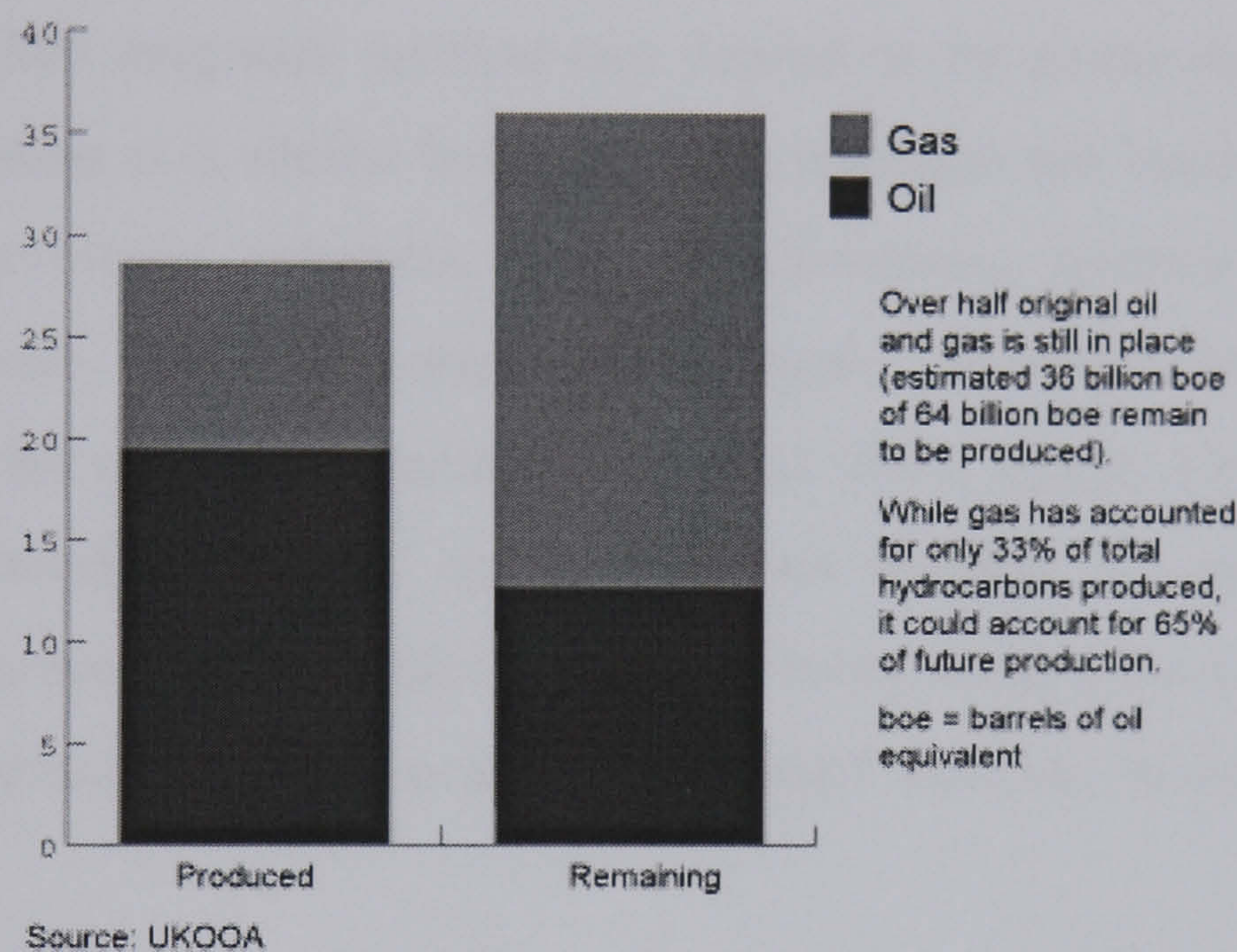
Source: PACEC/UKOGA



2.5.4 Future prospects

Estimates suggest that over half the original oil and gas reserves is still in place and that over 2,000 million tonnes of oil and almost 2,000 billion cubic metres of gas remain for extraction from the UK oil and gas reserves. With continued investment and technological advances, Britain will remain self sufficient in oil and gas for

Figure 2.7 UK oil and gas reserves



many years to come. Thus the industry will continue to be important to the UK economy.

In the 1990s many operators and contractors in the UK offshore oil and gas industry began to work together much more collaboratively with the aim of reducing the overall costs and increasing the value of the industry. The companies which were surveyed for this PhD study belong to this group and are involved in exploration, production of oil and gas, and maintenance of oil fields and logistical support businesses.



## CHAPTER 3

### LITERATURE REVIEW ON ALLIANCES AND PARTNERING

#### 3.1 Introduction

Forming strategic alliances appears to have become an increasingly popular strategic move by businesses, in this time of globalisation and radical technological change, to improve their competitive position (Hagedoorn, 1993). Many companies are discovering that their long-term survival may depend on the partnerships they build with other companies in a similar business. This approach has become the key to success in fast-evolving industries, such as electronics, telecom, automotive, computer hardware and software, entertainment, pharmaceuticals, biotech, construction and the oil and gas industry (Ali *et al*, 1997, Drago, 1997). However, some writers consider that this approach is not suitable for many business relationships, because it fails to take account of many circumstances to eradicate waste and inefficiency; they advocate power based business transactions (Cox, 2000).

The literature review examines some of the theories of collaborative relationships along with the benefits and drawbacks; critical success and failure factors; criteria of success and failure and other management issues of alliances and partnering. It also reviews the circumstances, which encouraged the adoption of alliances and partnering strategies and their effect on the oil and gas industry. The review is divided into three parts; it commences with an overview of the theories surrounding collaborative relationships. Then it examines social scientists' opinions on the definition, possible benefits, drawbacks and the ingredients that make alliances successful with some industry examples. Finally it analyses the development of alliances and partnering strategy in the UK upstream oil and gas industry and its effects in the industry.



### **3.2 Theories of Collaborative Relationship**

This section reviews different theories of collaborative relationships primarily in the light of the Child and Faulkner view. These writers put forward four main viewpoints, which contribute to the understanding of co-operative strategy (Child and Faulkner, 1998, pp17-44). These are (1) Market power theory (MPT), (2) Transaction cost economics (TCE), (3) Agency theory and (4) Increasing return theory.

#### ***3.2.1 Market -power theory***

Market power theory (MPT) is concerned with the ways in which firms can improve their competitive success by securing stronger positions in their markets (Pearce and Robinson, 1994, Johnson and Scholes, 1993). MPT provides several insights into co-operative relationships. One is that greater market power, with consequentially enhanced returns, can be attained through co-operative strategies. Co-operation may be a quicker and cheaper way to gain market power. This market power can be achieved by gaining access to scarce resources e.g. technology, human resources networks etc as well as by reducing various forms of waste and thereby delivering exceptional value to the end customers. The co-operation may be of two types, offensive co-operation and defensive co-operation (Hymer, 1972). Offensive coalitions are intended to develop firms' competitive advantages and strengthen their position by diminishing other competitors' market share or raising their production and/or distribution cost. On the other hand, defensive coalitions are formed by firms to construct entry barriers which are intended to secure their position and stabilise the industry so as to increase their profits. Defensive coalitions may also be sought by firms that have a weak position in the market in order to defend themselves against a dominant player (Faulkner, 1992; Child and Faulkner, 1998).



### ***3.2.2 Transaction-cost economics***

The perspective on strategic alliances offered by transaction-cost economics (TCE) views them as potentially cost-reduction methods. Oliver Williamson (1975, 1979) has been the main proponent of TCE. Williamson suggests (1996, pp 54-92) that transactions occur “when a good or service is transferred across a technologically separable interface”. With a well-working interface, as with a well-working machine, these transfers occur smoothly. In mechanical systems we look for friction: do the gears mesh, are the parts lubricated, is there needless slippage or other loss of energy? The economic counterpart of friction is transaction cost. Jones (1983) suggests that transaction costs are incurred when exchanges have to be negotiated, monitored or enforced. According to Williamson (1975, pp. 20-40) a combination of bounded rationality (the recognition that actors are limitedly rational) and opportunism is the core cause of why transaction costs are incurred. Sako (1992) suggests in the context of an alliances and partnering relationship, that transaction costs to be borne by alliance partners may include:

- Search costs associated with finding new partners
- Costs of drafting and negotiating agreements once trading partners are identified
- Costs associated with managing the product flow from the supplier to the buyer company
- Costs of servicing on-going trading relationships, mainly associated with inducing compliance or mutual observation of contractual terms
- Costs of adjustment associated with changing business or technological conditions, which include costs involved in changing product design, in renegotiating prices and contractual terms, and in switching or not switching trading partners

That is it can be argued that transaction costs encompass virtually everything besides production costs. Now how can transactional efficiency be attained? One approach, taken by Williamson (1975, 1985, 1993), is to choose an organisational form



(governance structure) which safeguards against people's advantage taking behaviour. He argues that difficulty in identifying trustworthy individuals makes it necessary for organisations to structure themselves as if individuals cannot be trusted. An agent copes with risk of opportunistic behaviour of a potential business partner by employing control mechanisms and by making opportunism costly. An alternative approach is suggested by Sako (1992, pp. 30-48) who assumes that transaction costs can be affected by the conscious action of trading partners over time. In particular, current transaction costs can be lowered by past investments into generating trust, establishing trading norms and institutions. Again, Macbeth and Ferguson, (1994, pp 96-117) suggest that alliances and partnering strategy can be of value to an organisation by reducing transaction costs and providing the benefit of integration without ownership.

### ***3.2.3 Agency theory***

Agency theory was first developed by Jensen Meckling in 1976. Its framework is concerned with the contractual relationship of stockholders, managers, and employees in an organisation where stockholders are treated as principals and managers are treated as agents. Agency models examine the relationship that exists when the agent is engaged to act on behalf of the principal. In agency theory it is assumed that both principals and agents are rational, economic individuals who act in their own self interest. A conflict will occur between agents and principals because of individual self-interest.

The theory is concerned with governance mechanisms which limit the agent's self-serving behaviour, including various control and incentive mechanisms. The focus of agency theory has been on determining the most efficient contract governing the relationship between principal and agent. More precisely, the question becomes one of whether a behaviour-oriented contract is more efficient than an outcome-oriented contract. Behaviour-oriented contracts include those which offer a salary in return for being available to work during stated hours, or in given circumstances.



Outcome-oriented contracts include commission, stock options, and having rewards or returns subject to performance within a market place. According to agency theory, a co-operative relationship is one in which each partner becomes the agent of other(s). There is the risk that one partner will engage in self-seeking opportunistic behaviour at the expense of the other, and this raises the question of what monitoring may be appropriate within a co-operative partnership. A combination of monitoring and incentive mechanisms may be put in place to ensure that an agent's behaviour remains consistent with the principal's objectives. Partners of a co-operative relationship are advised to make clear the basis on which each will share the returns (risks and rewards) from effective co-operation, and to put into place the systems for information to be shared between them. This provision should reduce suspicion between the partners and so provide a basis for mutual trust to develop through their working relationship (Child & Faulkner, 1998).

#### ***3.2.4 Increasing returns theory***

Economic theory has traditionally operated on the assumption that after a certain point there are diminishing returns from investments. In knowledge-based industries, however, the economists have observed the phenomenon of continuing increasing returns (Arthur, 1989). In this situation companies able to get a large share of the market early on may lock in their customers, with the result that these companies are able ultimately to dominate the market without decreasing returns setting in.

The existence of this characteristic of increasing-returns markets leads companies to develop intense technological networks, and to form alliances to achieve sufficient critical mass to be a major player in the market and to become first movers, lest they be pre-empted by rivals (Child and Faulkner, 1998).

As we shall see later the types of collaborative relationships on which the study concentrates are driven more by transaction cost reduction than by market power or



increasing returns. The idea of clear basis of share returns incorporated in agency theory is also relevant.

### ***3.2.5 Some opposite/contradictory views to collaborative relationships***

The review in the preceding and subsequent sections suggest that there has been a developing consensus among the practitioners, consultants, and academics about the importance of alliances and partnering or collaborative ways of working. However, despite the widespread acceptance, these ideas are opposed by some writers. These writers argue that while close collaborative working relationships or integrated supply chain management can be made to work successfully in some circumstances, this approach may not be appropriate in other circumstances, as it fails to take account of the many situations when a buyer is not in a position to create extended supply relationships.

It is also mentioned that many firms have found that partnerships with their suppliers have failed to deliver the expected benefits in terms of cost reduction, quality improvement or innovation. Even when such benefits have been achieved, firms have discovered that not everyone has benefited (or at least not benefited equally) from their association with the other supply chain members (Cox; Sanderson and Watson, 2000, pp.1-10).

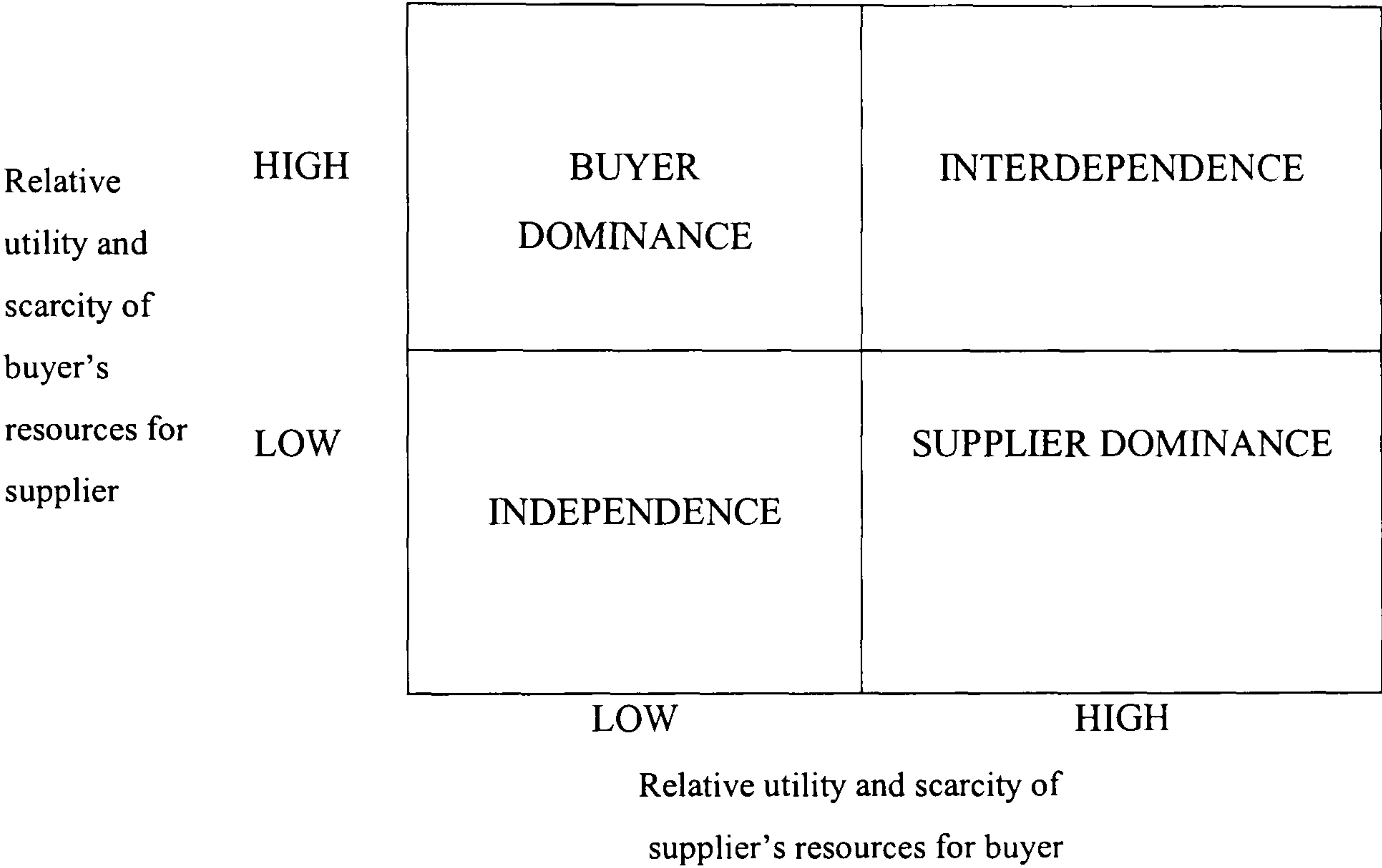
These writers argue that power is at the heart of all business-to-business relations. There are a range of different power circumstances in which buyers and suppliers may find themselves. Only by properly understanding the embedded objective power circumstances within the close collaborative working relationship, and the range of relationships and management choices available to them, will the buyers be able to manage their business efficiently (Cox, 2001 A).

Cox outlines a power matrix which could be used by the buyers to understand the circumstances they are in and what scope exists for them to augment their power



relative to supplier. The power matrix is basically constructed around the idea that all buyer and supplier relationships are predicated on the relative utility and the relative scarcity of the resources that are exchanged between the two parties (Cox, Sanderson, and Watson, 2000). There are fundamentally four power circumstances that buyers may find themselves in which they engage in exchange relationships with suppliers.

**Figure 3.1            Potential Buyer and Supplier Business to Business Exchange Relationships**



Adapted from Cox, 2000, p18

As figure 3.1 shows, a buyer can be located in any one of four power positions. A buyer would have power over a supplier in two situations. First, when buyer offers the supplier relatively scarce and high utility resources, and second when the supplier's resources are relatively plentiful, and are of relatively low utility for the buyer. Logically, a supplier would have more power if the exact opposite were true in terms of resource utility and scarcity. In the interdependence box, both the buyer and supplier possess resources that are required by the two parties and there is no power relation between them. Finally a situation of buyer-supplier independence is



created where neither of them has significant leverage opportunities over the other party, and the buyer and supplier must accept the current prevailing price and quality levels.

An analysis of these power regimes suggests that there are some similarities between the 'collaborative relationships' we studied and the power situation which exists between buyer and supplier in 'interdependence' quadrant. In both the circumstances buyer and supplier manage their exchange relationship with mutual understanding and mutual respect. Under 'interdependence' circumstance both buyer and supplier possess scarce and high utility resources i.e. the resources which are critically important for operations and commercial purposes. In this situation both buyer and supplier are dependent on each other, and should not be in a position to take actions which disadvantage the other. However, in the case of changed circumstances buyers and suppliers may find themselves in different power situations. In collaborative relationships buyer and supplier cooperate with each other for mutual benefits. It is assumed that with the changes of circumstances or in case of temporary adverse conditions, one party would not take advantage of the other in this kind of business to business relationships.

The writers who are in favour of power based business to business relationships argue that if buyers want to improve ways of leveraging value appropriation from exchange relationships they should not always employ the existing suppliers and remain in the current power circumstances. Rather they should find ways of moving supply relationships from the existing power situation to one that will provide them with effective leverage over quality and cost. The ideal situation for buyers is logically to force all the suppliers into the buyer dominance box. This box must be the preferred location from which supplier relations should be managed.

Some of these writers take view that the primary purpose of any business exchange is to make money. They argue mainly in favour of buyers (big companies) and



suggest that suppliers (small companies) should be forced to operate in highly contested markets (Adam Smith, 1987, Cox, 2001). This will create a situation where buyers will be able to buy products or services at a minimum cost at the expense of suppliers' profits.

This argument cannot be considered impartial as it fails to consider the other side of the coin i.e. the suppliers' perspective. There are many more suppliers than powerful buyers in an industry and these small companies make great contributions to businesses and society as a whole by creating employment and through innovations. Without their contribution no industry would be able to succeed. If the big companies (buyers) adopt an authoritarian strategy and squeeze the profits of small businesses, this may drive many small companies out of business. Rather the big companies should adopt strategies which support their suppliers, because in addition to making money for their shareholders, the bigger companies have also other social and ethical responsibilities.

As the objective of this research is to study collaborative relationships (alliances and partnering) in the UK oil and gas industry, power based relationships are not explored further. The following sections explore different issues concerning alliances and partnering.

### **3.3 Alliances and partnering**

#### ***3.3.1 Definition***

Different authors have defined alliances and partnering differently. However, most of them agree on the point that alliances and partnering is the way of doing business where a number of organisations work together for mutual benefit. Macbeth and Ferguson (1994, pp. 60-95) characterised a partnering relationship as one in which the partners engage in activities like shared design process, open book costing, interchanging of staff, long term commitment, joint improvement projects, and have shared visions of their business. Ellram, (1995) defines alliances and partnering as an



ongoing relationship between organisations that involve a commitment over an extended period of time and a mutual sharing of risks and rewards of the relationship. Green (1997) suggests that alliances and partnering is a way of doing business that unlocks the benefit of collaborative working and eliminates the disbenefits of adversarial working. Spekman *et al* (1998) define “a strategic alliance is a close, long-term, mutually beneficial agreement between two or more partners in which resources, knowledge, and capabilities are shared with the objective of enhancing the position of each partner”. Several types of alliances may be formed including collaborative advertising, research & development partnering, lease service agreements, shared distribution, technology transfer, cross manufacturing, resource venturing, cross licensing, co-operative staff or facilities sharing (Pekar and Allio, 1994).

After reviewing alliances and partnering in different industries particularly in the UK oil and gas industry, the National Economic Development Council (NEDC) (1991) suggests that “partnering is not a single unified concept, nor in its loosest form is it a new concept. Partnering appears to have evolved rather than having begun life as the realisation of a specific idea. Its precursors are probably much looser arrangement, such as strategic alliances or preferred supplier managements, in industries other than construction.”

From the NEDC finding it can be assumed that it is rather difficult to have a precise or unified definition of ‘alliances and partnering’ in the UK upstream oil and gas industry. Alliances and partnering in the UK oil and gas industry were formed between customers (oil companies) and first line contractors to improve performance, reduce costs and gain mutual benefit. The implementation of the relationships varied between the groupings of companies involved, and they evolved differently under the influence of the different people in the teams involved. Departing from the clinical definition, the key characteristics of the ‘alliances and



partnering or ‘collaborative relationships’ in the UK oil and gas industry, which were studied for this PhD programme were:

- Oil Company (customer) was part of relationship which involved one or more first line contractors.
- Relationship was for a long term.
- Intent to collaborate was understood by the companies involved.
- There was some mechanism for sharing of benefits of improved performance between the companies involved.

More discussions on the UK oil and gas industry collaborative relationships are made in section 3.7 and 3.8.

### ***3.3.2 Benefits of alliances and partnering***

Richardson (1993) believes that long-term partnerships lead to improved quality and lower cost. Parker and Hartley (1997) suggest that partnership sourcing may have the following advantages over competitive supply: reduced costs by avoiding unnecessary tendering and frequent competitions, fewer dedicated suppliers, long term contracts, co-ordinated strategies between buyers and suppliers, trusting relationships, single sourcing, and win-win outcomes. This is in agreement with Sako (1992) who argued that in an Obligational Contractual Relationship (OCR) transaction costs may be significantly lower than an Arm’s-length Contractual Relationship (ACR). Transaction costs are the costs of running an economic system, which may include costs involved in finding new partners, drafting and negotiating agreements, negotiating price, and costs involved in negotiating contractual terms (Niehans, 1987).

Alliances and partnering may also provide a link into global networks and markets at a low cost, as well as rapid access to technologies, skilled manpower and other resources. Lamming (1993) considers customer-supplier partnerships as the most beneficial and effective method of organising the purchase of goods and services. From the partnering relationship the suppliers get increased order security, reduced



uncertainty, and other benefits. At the same time, purchasers hope to achieve advantages, including improved supply continuity, a better match between the supplier's sale specification and the purchaser's purchase specification, and reduced long term cost. Alliances reportedly improve competitiveness of firms by providing access to external resources, by providing synergies and by fostering rapid learning and change (Hoffman & Schlosser, 2001). Alliances may enable firms to gain access to partners' advanced technology or share a high cost of developing new capabilities through research and development (Child and Faulkner, 1998, pp. 65-83).

According to Burgers *et al.* (1993) strategic alliances reduce uncertainty for the parties involved in alliances, and the benefits of strategic alliance can be divided into two general categories:

- a) those that come about through the reduction of external environmental uncertainty which arises from the unpredictability of customer/consumer purchasing behaviour, or by competitive interdependence where the actions of one firm has a direct and significant effect on the market positions of others in the industry.
- b) those that reduce internal organisational uncertainty through gaining access to scarce resources.

### ***3.3.3 Difficulties of alliances and partnering***

Social scientists have also suggested that there are numbers of difficulties alongside the benefits of forming strategic alliances for example, alliances are difficult to manage, require considerable time and effort of top management as well as others in the organisation and may also decrease organisational flexibility. Alliances often fail, and it may be claimed that benefits are never exploited owing to lack of trust/co-operation, goal incongruency, or environmental change. Environmental change can also hold back the capacity of strategic alliances to be effective (Drago, 1997). Again, alliances may not be beneficial for all parties involved. As Ramsay (1996) suggests, the efforts to form a partnership will frequently be met by supplier



indifference or resistance, and the strategy itself is high risk, high cost, and involves purchasers in an undesirable net loss of power. This is supported by Ellram and Edis (1996) and Doz and Hamel (1998, pp. 33-92) who add that formation of partnerships entails increased risk, cost and a loss of power for purchasers, and should not be considered in circumstances where the benefits arising from the relationship do not clearly outweigh the costs. For example let us consider a circumstance where a British company 'A' considers doing business in China. To gain access, learn about unfamiliar market and become an insider the company may decide to form alliances with one or more Chinese companies. However, before adopting alliancing strategy it is important that 'A' weighs up the costs of forming the alliance e.g. finding alliance partners, capital investment, staff recruitment and training, research and development, termination costs, as well as the long term consequences of getting stuck with certain companies. Then compare them with possible short and long term returns from the business. If the appraisal shows that rather than forming alliances 'A' could gain more benefits by hiring or contracting Chinese companies, an alliance strategy should not be pursued. Cox (2001) emphasises the need for taking a holistic and cautious approach and mentions "Rather than focusing on the development of one approach, as appears to have been the case with partnering or alliancing in recent years, it is essential for practitioners and academics alike to understand the full range of relationship management choices available and to choose wisely from among them".

#### ***3.3.4 Ingredients of successful alliances***

In order to make an alliance successful or to prevent its failure, the alliance parties have to be aware that there are some obvious managerial and financial reasons which can lead to alliance failure. These need to be given serious consideration from the very beginning of the alliance formation in order to avoid failure and are summarised below:



*Clearly defining strategy-* Alliances, albeit fraught with complexity, can be a valuable strategic weapon. However, there must be a valid driving force to justify forming an alliance (Eisenhardt and Schoonhoven, 1996). In an alliance, each partner must consider how its short-term actions will affect the others' long term success. Strategy development must meet the needs of all partners to ensure long term success. The success of an alliance may also depend on the degree to which strategy and operations are integrated (Kemeny and Yanowitz, 1998). In most of the organisations two different groups are responsible for these two perspectives. The strategic thinkers may have a clear picture of what they want to achieve from an alliance. However, when the operational teams do not have a clear idea and do not act accordingly, the alliance will not benefit the organisation - rather it will create problems. Alliance strategy should tie in closely to the corporate strategy. Flexibility should be built-in to allow for renegotiating or restructuring the alliance if the need arises, especially in a dynamic environment.

*Trust in the relationship-* Trust is one essential element of strategic alliances that cannot be written into the contract. Research to date suggests that the concepts of trust and commitment are pivotal to the relationship's success. Trust is defined as "the willingness to rely on an exchange partner in whom one has confidence" (Moorman *et al*, 1992). Another view could be that "trust is the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer *et al*, 1995). Trust can be regarded as a mechanism of control and of coping with uncertainty in inter-organisational collaboration (Vangen and Huxham, 1998). For instance, the notion of governance structure such as formal arrangements, hierarchies, is closely linked to the idea of 'safeguard' against opportunistic behaviour. Trust as a social norm lessens the need to use such a safeguard to deter opportunism. In other words trust may act as a governance mechanism, albeit an informal one, to enhance the



effectiveness of transactions whether they take place in markets or within hierarchy (Heide and John 1990, Sako 2000).

*Cultural change*- According to Mintzberg (1979), an organisational culture is the set of norms, values, beliefs, and conventions that influences the behaviour and goals of its employees. Developing a shared culture is central to the success of the alliances. In an alliance, partners may come together with different organisational cultures and start with no negative preconceptions. They may find that variations in their behavioural norms may lead to mutual misunderstanding, poor follow-through, and eventual distrust (Kemeny and Yanowitz, 1998). Ohmae (1989) points out that the conflict in corporate culture is one of the key reasons for relationship failures. The alliance team needs to establish its own norms and practices which may, or may not, be a mixture of the culture of the partner companies. The members of the alliance team will experience cultural change while the overall culture of the partner companies may not change. There are limits as to how much a company should change to accommodate the demands of an alliance. The potential value of the relationship must be weighed against the value of all other company activities. Again, in some situations differences in culture are not considered a problem, as companies from different cultural background are willing to work together for common goals (Haque *et al*, 2000 a).

*Shared goals* - successful alliances are built on the fundamental premise that all the partners must be winners. Without the presence of this condition, no strategic plan, no formal agreement, and no operational schedule will overcome such a fundamental deficiency (Maron, 1993). A partner who believes he is losing will not perform well and may eventually undermine the alliance itself. Ellram (1995) also found that the lack of shared goals contributes heavily to failed partnerships. Lewis (1992) suggests that, it is important to have a clear and agreed set of aims which allow the partners to be clear about why the collaboration exists, why they are part of it and



what their roles are within it. This mutual objective stretches the alliance partners together in the same direction to fulfil their goal.

#### *Risk and reward structure*

Risk and reward structure also plays an important role in the success of alliances and partnering. Green (2001) argues that, it is very important that people are aware and understand how achievement of shared objectives will benefit them. Such an understanding will influence people's behaviour when they deal with their colleagues from the other companies. The risk/reward structure in the UK oil industry alliances attempts to measure the savings or shortfall from target, which would then be split in some fashion among collaborative partners. It provides the motivation for companies to work together to achieve the shared objectives and allows collaborative companies to feel comfortable with the outcome of their joint work. If extraordinary performance is achieved then all companies share the monetary benefits. If performance is poor then the companies do not expect to receive additional payment and may be expected to share some of the additional costs. In the UK oil and gas industry alliances, the most common form of sharing upside potential between contractors and client is to split any savings 50/50. In some alliances, where there are many contractors, savings are shared 25% to the client and 75% split equally among the contractors. The treatment of downside risk appears to be somewhat more variable among contracts and dependent upon the perceived amount of risk in the project. For example, in large integrated offshore projects almost all of the downside risk is carried by client, with contractors losing only the profit on the first 10% overrun (Farrell and McDermott, 1995). Whereas as in a long term onshore service contract, where perceived risk is very little, no downside risk is carried by the client, with the contractor bearing 100% of cost overruns.

### **3.4 Management Issues and Strategic Alliances**

In order to be successful, strategic alliances demand considerable attention and management skills throughout the entire period of their existence. They need to be



clearly focused in their aim and in the deliverables anticipated from the alliance by the partners involved (Stiles, 1994). Lyons *et al* (1990) suggest that it is essential that all partners thoroughly understand the cost and benefits, as well as the short and long term impact, of these relationships. Again Hamel *et al* (1989) suggest that alliance management is a wonderful test of general management skills where purpose and flexibility, analytical powers, entrepreneurial instincts, and organisational and political skills must come together. Walters *et al* (1993) suggest that managing strategic alliances is often a difficult task, particularly when alliance partners have different or conflicting agendas, as we have previously seen that without shared goals no alliance could be made successful. The effective management of relationships to make alliances and partnering successful requires managers to be sensitive to political, cultural, organisational, and human issues (Kanter, 1994). Managers should be prepared to reassess their relationships, adjust and even renegotiate as the situation changes.

Measurement of performance in alliances and partnering is another issue which needs to be discussed. There is not always a straightforward measure of the performance improvement which can be attributed to alliances and partnering. Companies in an alliance may not gain direct economic benefit, but they may share their knowledge, learn from each other or use the communication channels in future for opening new markets. Successful companies view each alliance as a window on the other partners' broad capabilities. They use the alliance to build skills in areas outside the formal agreement and systematically diffuse new knowledge throughout the organisations. As a result, the establishment of procedures by which organisations can learn from the past experience of collaborative management is very important (Littler and Levererick, 1995).

Doz and Hamel (1998, pp. 33-89) report that the measurement of success in alliances is a difficult task. Scorekeeping should be defined against value creation expectations of the partners. Increased competitive strength, success in co-



specialisation tasks (i.e. the synergistic value creation that results from combining previously separate resources, position, skill, and knowledge sources), and learning effectiveness cannot be measured solely in terms of the alliance's short term financial performance, rather they should be measured in very different ways e.g. competitive market position, long term financial benefits, accomplishment of goals, elimination of waste, satisfaction of alliances members and innovation. Doz and Hamel (1998) also suggest that what the alliance contributes over time to the competitiveness of each of its partners should be considered more important than its longevity. An alliance would be a success when all the shared targets are met or exceeded and all the parties are happy with the outcome, and with the benefits they receive. An alliance could also be claimed as a success if the shared targets were not met as a result of some unexpected event, but the alliance members worked together to recover the situation and deliver the best possible outcome in the circumstances. Again, when we talk about success it is important to recognise that there may be two types of success i.e. relationship success and business success. An alliance should only be considered successful if it creates value for the business. If a relationship survives or lasts long without having any short or long term effects which create value for the business, it can be considered as success.

Alliances may not always be successful for a variety of reasons. An alliance would be recognised as a failure for the following reasons: if there is a serious breakdown in collaboration; the customer terminates the relationship because of serious non-performance by the contractor(s); the contractor terminates the relationship because of an unresolvable disagreement with the customer; or the parties end up in court. Ending a partnership is a difficult task and may result in substantial economic and other losses. However, the losses may be minimised by addressing the termination issue at the onset of the agreement. The partnering contract could provide for the liquidation or distribution of partnership assets, including any technology developed by the alliance.



### 3.5 Alliances in Practice

As mentioned above, alliances have been practised in different industries. The following examples from the automobile and upstream oil and gas industries illustrate effective and ineffective alliances and highlight reasons for the outcome.

#### 3.5.1 *Alliance in the UK automotive industry*

The advent of global recession, coupled with rapid technological change and increased competition forced Western automobile assemblers to fundamentally re-examine their strategic position (Ali *et al*, 1997). One key shift has been in the structure and nature of buyer-supplier relations. This includes reducing the number of direct suppliers, making long term contracts to preferred suppliers, introducing just in time, lean supply production systems, and forming strategic alliances (Turnbull *et al*, 1992). These strategies were adopted by Japanese car companies in the first instance, and have helped them to obtain extraordinary results in respect of productivity, product quality, and responsiveness to changing market demand (Womack *et al* 1990). According to Lamming (1993), “lean supply is a strategic model for assembler-supplier relationships” and he provides a model of these relationships. He includes the following characteristics in his model: nature of competition; basis of sourcing decisions; role mode of data/information exchange; attitude to quality; role of R&D; and level of pressure. Although different initiatives have been adopted by the automotive industry in the UK, it cannot yet claim to practice lean supply in any comprehensive sense. Lamming (1993) also indicated that Japanese relationship between customers-suppliers has been held by a ‘strong national determination’ to rebuild and this has also resulted in protection for key industries. However, the situation is different in the West “In the stressful Western automotive industry of the 1980s, it would evidently not be easy to create a common concern for mutual benefit, or even survival”. In the UK automotive industry one of the greatest barriers stems from its turbulent and acrimonious history. There is a lack of the vital factor necessary for industrial alliance; inter-firm trust. Of the various forms of trust which may be said to exist between firms e.g. contractual trust,



competence trust, goodwill trust to form good alliances, none is sufficiently present in the UK automotive industry (DTI, 1994). Poor communication is another problem. Bower and Keogh (1997) suggest that inter- and intra-organisational communication is very important to make partnering successful. Generally communication may be improved by cutting a chain of command or by allowing key people in partnering organisations to talk directly, or by breaking down formalised, hierarchical systems of communication.

### ***3.5.2 Alliance in the Eastman Kodak Company***

An example of a successful partnering implementation involves the international company, Eastman Kodak (Ellram and Edis, 1996). The Eastman Kodak Company made an alliance with its suppliers with a view to achieving total life-cycle cost savings, early supplier involvement for better solutions and to reducing cycle times. A number of steps were taken to make the partnering strategy successful. The Eastman Kodak team clearly established goals for the partnership. The company's senior management were not only fully supportive but also helped to change old business practices that would otherwise undermine the world-wide partnering programme. Inter-organisational communication was excellent. There were regular presentations and conferences. Guidelines and brochures were distributed when necessary. The alliance suppliers were involved in the change process and they gave presentations, answered questions and addressed concerns. In addition, an on-line, electronic newsletter was established to answer questions and to update the status of agreements. Suppliers were treated with mutual trust and respect which was the most important element in the success of the relationship. The worldwide team appointed by Kodak was fully empowered to act upon any decision or activity that they deemed necessary. The results for Kodak have been more impressive than expected in respect of worldwide purchase and cost management. The suppliers have secured long-term business, and have been better able to plan for their future investment resource use as well.



### **3.6 Alliances in the UK Upstream Oil and Gas Industry**

Before examining the alliances and partnering in the UK upstream oil and gas industry it may be useful to have some background knowledge on the traditional clients-contractors relationships and the occurrences in the 1990s and their effect on the oil and gas industry which brought profound change in the industry, and persuaded the industry players to adopt alliances and partnering strategy.

#### ***3.6.1 Occurrences/Changes in the oil and gas industry in late 90s***

In the 1990s the British offshore oil and gas industry underwent a profound change of direction. This shift irrevocably altered the character of the production regime on the United Kingdom Continental Shelf (UKCS). The impulses of the changes came from a number of political, social and economic factors which made a great impact on the industry in the 90s. First of all the crisis of industrial relationships which erupted after the world's worst offshore disaster, Piper Alpha in 1988, in which 167 oil workers died. The strikes which followed in 1989 and in 1990, were a very special type. They did not immediately seek direct material gain. Rather, they raised questions about the managerial authority and legitimacy in the area of health and safety which had been practised in the offshore production system since the 1970s (Woolfson *et al*, 1997, pp. 133-327). Since the 1970s the production regime may be characterised as decentralised, highly competitive, based on multiplicity of supply firms, short-term contracts, domineering managements, with weak or non-existent unions and compliant state regulation (Cullen, 1990).

Another important factor was economic, the cost of oil production was seen to be excessively high, 4 to 6 times greater than its lower cost counterparts in other oil and gas provinces. For example, in Saudi Arabia oil could be produced at a much cheaper cost from its on shore fields. At the same time, the oil price started to tumble and continued to fall through 1991 and 1992 back to the lowest levels of the 1980s which were likely to remain low for at least the next decade.



### ***3.6.2 Cost Reduction Initiative in the New Era (CRINE) Network***

It was recognised by the Government and the industry players that a fundamental change was needed in the UKCS production regime for its sustainable development, which gave rise to the establishment of CRINE and its successor CRINE Network in 1993 and 1997 respectively. CRINE was the pan-industry forum of the UK's upstream oil and gas industry formed by volunteer industry participants. CRINE promoted ideas of culture change and collaboration across the industry. Its purpose was to move the industry to a position of global competitiveness by year 2000. CRINE Network functions were transferred to Leading Oil and Gas Industry Competitiveness (LOGIC) in 1999. CRINE objectives were partly technical, aimed at elimination of wasteful duplication of effort by encouraging the use of standard equipment and specifications, and partly legal, aiming to simplify, clarify and ultimately standardise contract language and to eliminate adversarial clauses. Reinforcing these ideas, the CRINE guidelines specially stressed the need for co-operation, openness and non-adversarial attitudes based on mutual trust. Through CRINE, a standard contract for construction of platforms, model contracts for offshore services, pipe laying, mobile drilling rigs and design were issued.

CRINE identified 'industry culture and business practice' as the root cause of the distrust and adversarial relationships which were commonplace. Those basic problems led to technical complexity, adversarial management, unnecessary and unbalanced risk of financial exposure and inadequate communications, education and development. The report of CRINE produced by United Kingdom Offshore Operators Association (UKOOA) in 1993 mentioned, "The UK oil and gas industry is facing a number of fundamental challenges to its future prosperity. Real oil prices are expected to continue to remain at historically low levels in the short and medium term.... Against this background, capital and operating costs have continued to escalate. Unless urgent action is taken to reverse the trend, the future of oil and gas development in the UK North Sea will be in serious jeopardy..... There are



individual and multi-company initiatives underway but only with a truly industry-wide, collective effort, the full potential for reducing costs can be realised”.

The culture envisioned by CRINE was one characterised by teamwork and openness. It was one where the full potential of people working together towards common objectives can be realised and all parties have the opportunity to prosper. The CRINE report called for a fundamental change in culture and the ways business was conducted in the industry and mentioned “A shift is required, not only in the way industry conceives, designs, and builds hardware, but just as importantly in the way the industry interacts and relates as a whole”. The report also called on the requirement for cutting cost and stated. “North Sea development costs can be in the order of 4-6 times greater than their lowest cost counterparts in other oil and gas provinces, such as the Gulf of Mexico and the Pacific Rim.... In contrast with engineering practice in other areas, North Sea projects are founded on highly complex specifications and use non-standard materials, equipment and procedures...”

DTI (1993) report of the working group on UKCS competitiveness also emphasised that “A profound change of culture is necessary for all parties in the offshore related industry if the costs of the UKCS are to be controlled. Change on the scale that is needed will require the development of high degree of trust and confidence between all parties.... We must move away from adversarial contractual relationships and nurture changes in attitude wherein people learn to work together in a common direction and purpose”. This report had a similar view on industrial structure as CRINE. Competitive, adversarial relations had to be replaced by co-operation and partnership within the industry and between different contractors and suppliers.



### ***3.6.3 Moving towards collaboration***

Traditional client and contractor relationships in the oil and gas industry are said to be characterised by a lack of openness and a chronic lack of communication. Again, this is considered to be the inevitable result of a relationship based strictly upon legal certainty as opposed to mutual trust (Woolfson *et al*, 1997). The move towards collaborative relationships emerged as one of the responses to the North Sea Industry's need to change its business process and to the realisation that adversarial relationships add cost rather than add value. The main force which drove the operator to build collaborative relationships with their contractors was the need to reduce the costs of developing and operating their fields. If the industry could reduce the costs substantially then lives of the existing fields could be extended, return on investments in the UKCS would remain attractive and new fields would continue to be developed (Kemp, 1995). The idea of collaboration also arose in an attempt to combat the rigid, legalistic atmosphere generated by traditional contracting.

The term 'alliances and partnering' is widely used to describe the collaborative relationships in the industry. The term "alliances and partnering" came into use perhaps because it allowed people to avoid using the word "partnership" which has a distinct legal meaning. What ever they might originally have meant, neither "partnering" nor "alliancing" is a prescriptive term; each can be used to describe a variety of arrangements between operators. The common factor is an intention to conduct a more co-operative relationship often involving a particular type of management and incentive structure. In some cases, the partnering agreement may amount to little more than a framework agreement stating the basic philosophical aims of the relationship. In other cases, partnering could be described as a deliberate initiative to facilitate the completion of a project in the most efficient and cost effective manner possible (Beggs, 1998).



Alliances and partnering in the oil and gas industry was intended to inspire parties to conduct their relationship in an open and co-operative manner. They viewed their obligations in a positive context, emphasising their goals as opposed to the sanction for failing to meet such goals. As Beggs (1998) argued partnering set an enthusiastic tone, which trickled down to all levels of the project. Kemp and Stephen (1998) argued that alliances and partnering had been advocated as a contracting device which would reduce or remove adversarial behaviour between oil companies and contractors. A stronger relationship between these parties might stimulate innovation and facilitate cost reducing initiatives.

The drive for improved performance supported by collaborative relationships involved changes in business process which sometime came under the label of business process re-engineering, BPR (Hunt, 1996). Hence the perceived link between BPR and alliances and partnering. In the early days, the creation of alliances and partnering relationships was often accompanied by severe restructuring of the operator's organisation coupled with outsourcing of functions, and loss of jobs (downsizing). Much of the engineering works were tied up in long-term contracts between operators and the larger (first-tier) contractors. Many operators deliberately reduced the number of contractors they dealt with, and relied on the first-tiers to procure the services they formally managed directly. Smaller companies were no longer able to deal directly with operators and had to rely on larger contractors for their work.

### **3.7 Classical Strategic Alliances and North Sea Alliances**

In general terms classical strategic alliances bring together two or more organisations in partnership whose core competencies are complementary, enabling them to reduce cost, gain access to new markets, overcome trade barriers, introduce new products or develop complex systems and solutions, and offer economies of scale. In the North Sea Industry, some contractors have formed alliances themselves to satisfy better the demands from the market. This kind of alliance is very close to the classical



strategic alliance. However, the alliances between the clients and the contractors in the North Sea industry appear different from the classical form because, the end customer is part of the alliance, the shared aim is to complete a set of tasks more efficiently by working collaboratively, there is a stronger emphasis on collaboration and team working, and the remuneration of the contractors involves some sharing of risks and rewards. The contractors collectively provide services and goods for contractual periods of up to some five years or beyond. The client companies provide a number of necessary resources including project information, access to sites, technical assistance where suppliers are less expert, and financial support. Although transfer of information may carry real or perceived risks for the partners (Crabtree *et al*, 1996), this allows the suppliers to link their activities to that of the client's needs. The supplier firms are required to have two types of knowledge, i.e. industry knowledge and technical knowledge. This enables them to develop technologies suitable for the complex production systems of oil and gas, which require continuous maintenance and modification. Developed technology also helps to cut the cost. Thus the shared aim is to complete a set of tasks more efficiently.

Generally, both the terms 'alliancing' and 'partnering' are used interchangeably to indicate ongoing mutually beneficial relationships between organisations. However, some writers suggest that the term 'alliance' refers to a long term, all-encompassing relationship, and partnering refers to individual projects (Halliburton, 1994). Some companies use the word alliance to describe an incentivised contract, which can be far from collaborative. Beggs (1998) suggested that the idea of 'partnering' arose in an attempt to combat the rigid, legalistic atmosphere generated by a traditional 'partnership contract'. By and large, the industry avoids the word "partnership" because that word has strong legal connotations where all the members of a partnership can be jointly and severally liable for the consequences of the actions of all the members of the partnership. Normally the architects of alliances and partnering take great care that the relationship between the companies cannot be interpreted as a partnership in legal terms.



In the North Sea alliances, contractors are selected on the basis of their values, policies, and behaviour and not on the lowest bid (Green and Keogh, 1998). There is a stronger emphasis on collaboration and team working, and the remuneration of the contractors involves some sharing of risks and rewards. Emphasis is placed on involving the alliance parties from the beginning of a project and forming a working team with the best persons for the job, with the aim that all parties benefit from the alliances. Most importantly, in many North Sea alliances, the customers are part of the alliances with the contractors whereas in the classic form of alliances, companies work together to serve the market. A study by Coolidge (1995) on the North Sea oil industry suggests that there are four main types of alliances, which are practised in the oil and gas industry:

- a. *for a specific product or service.* The operator commits all or most of its business to a single contractor, in return it gets price discounts or technology access
- b. *with the preferred contractors.* Works contracts are established with the intention of reducing purchasing or administrative cost
- c. *the operators and contractors form an alliance.* This facilitates clearer communication, efficiency and cost reduction. The alliance team members agree to work closely, increase efficiency, and share the risk and reward
- d. *contractors manage subcontractors.* An alliance is formed between the operator and with the lead contractors who manage subcontractors. The contractors often share a substantial portion of the risk.

That is to say, customers' involvement in alliances, clearer shared aims, communication, training, sharing of information, proper participation, working in a



team, sharing risk and reward are the common features of the North Sea partnering and alliance strategy.

### **3.8 Alliances and partnering in Action in the UK Upstream Oil and Gas Industry**

Over the last 12 years, the upstream oil and gas industry has experienced different types of alliances and partnering relationships. The majority of the relationships were or are concerned with facilities or subsea engineering (design through fabrication, installation and maintenance) or with provision of well construction services (drilling and well maintenance). However there were alliances for provision of other services including: management of production chemicals, accounting services, information management, and information systems, supply management etc. Different types of companies have been in those alliances; there are alliances between contractors and contractors, contractors and operators, or operators and operators (Green, 1997). Some examples of various kinds of alliances are shown in the following boxes.

#### *Contractor/contractor alliances*

- The TAPS alliance between Schlumberger, Coflexip Stena & ABB Vetco Gray.
- The Prism Alliance between Schlumberger and Baker Hughes Inteq for service to the Schiehallion project or the worldwide alliance between Schlumberger and Baker Hughes to work together and to use each other's products.
- The alliance between Maersk, AMEC and SBM to bid for FPSO design and construction work.
- The alliance between Brown & Root and AOC International to provide a complete engineering and maintenance and modification service.



### *Operators/ contractors alliances*

- BP Exploration and Brown & Root partnering for provision of engineering services for the Forties field.
- BPX with Brown & Root, AOC, Santa Fe, Baker Hughes Inteq, Schlumberger, Aramark to manage the continuing operation of Andrew field.
- Shell Expro's Maintenance, Modification and Service Contracts (MMSCs) or Engineering Services Contracts (ESCs) with a variety of contractors depending on the Shell field unit involved.
- Shell's Sub sea Vertical Alliance for the provision of subset well construction services which was made up of Shell Expro (Well Engineering Department), Sedco Forex, Diamond Offshore Drilling, Halliburton Energy Services, ABB Vetco Gray and Cooper Cameron.
- BP Exploration and ASCO for the provision of an integrated supply logistics and Marine operations.
- BP Andrew Facilities Alliance (BP Exploration, Brown and Root, Trafalgar John Brown Oil and Gas, Barmac, Saipem, Santa Fe, Allseas, Emtunga).
- BP Andrew Well Construction Alliance (BP Exploration, Transocean, Santa Fe, Baker Hughes Inteq, Schlumberger, ABB Vetco Gray, Cooper Cameron).
- Britannia Field pre-drilling project (Chevron, Conoco, Sedco Forex, Baker Hughes Inteq, Schlumberger Wireline and Testing, Baroid, Halliburton Energy Services).
- Britannia field development - platform construction (Chevron, Conoco, Kvaerner Oil and Gas, AMEC Process & Energy, SLP Engineering, Nabors Drilling and Energy Services).
- British Gas Armada Field topsides (British Gas, Kvaerner Oil and Gas, AMEC Process & Energy, AOCI ).
- Development of the ETAP Fields (BP, Shell, Brown & Root, Kvaerner Oil and Gas, Kvaerner FSSL, AMEC Process Energy, Coflexip Stena Offshore, EMC, Santa Fe, Noble Drilling, Schlumberger and others).



#### *Operators/ Operators alliances*

- The “Team Marine” alliance to provide a shared logistics service for ELF Exploration, Texaco and Amerada Hess.
- An alliance between Shell and BP Exploration for exploration and field developments in the Atlantic margins.
- The alliance between Chevron and Conoco to develop the Britannia field.

#### ***3.8.1 Development of the Andrew Field: An example of a successful alliance***

An alliance would obviously be a success if all the shared targets are met or exceeded and all the parties are happy with the outcome and with the benefits they receive. An alliance could also be claimed as a success if the shared targets were not met as a result of some unexpected event, but the alliance members worked together to recover the situation and deliver the best possible outcome in the circumstances. The following example illustrates a successful alliance in practice.

In 1990 BP Exploration along with its seven partners i.e. Brown & Root, Trafalgar John Brown Oil and Gas, Barmac, Saipem, Allseas, Santa Fe, and Emtunga, embarked on a project to develop the Andrew field’s facilities in the North Sea. The estimated cost to develop Andrew’s facilities was £450 million. With the formation of the facilities alliance between BP and seven contractors, and the commitment to work collaboratively, the cost was driven down to £373 million (Knott, 1996). He mentioned “Surprisingly, step by step, the power of the alliance not only discovered the means to reach the target, but it regularly revised its forecast, reducing to £320 million, then £290 million. The final cost for delivering Andrew’s facilities rested just below £290 million and production of oil commenced six months ahead of schedule”.

Why was the Andrew project so successful? Because, from the beginning, the partners worked on the principle of “No business as usual”. In other words they worked in a different way. The motto of the project was cost reduction and the



delivery of a high standard of performance. The partners agreed a comprehensive target cost. The habit of building in added contingencies was eliminated. The integrated team work contributed to the cost reduction process by standard products design; reducing project documentation; using minimum offshore lift; topsides innovation i.e. offshore working and accommodation facility; no growth in the fabrication stage; and avoiding duplication of inspection. Traditionally, extra cost would be borne solely by the client but, in an unequivocal move, the alliance companies had proposed that under the project risk and reward approach they would share such an overrun, should it occur, up to a cost of £50 million. For example, some £373 million pounds were estimated to build the Andrew facilities. In essence the gain share meant that if the Andrew facilities were delivered for less than £373 million the contractors and BP along with its partners would split the saving in the ratio 54% to 46% (Knott, 1996).

As already noted, it is very important to have trust between the partners in order to make an alliance successful and this was demonstrated in the Andrew project. A major element promoting such success had been co-operation and trust within the core team and consultation with the work force. “Traditional client-contractor hierarchies were eliminated by the formation of the integrated management team. There were no tiers of authority, cross checking or need of approval. The alliance partners were trusted to carry out their own quality control, thus avoiding unnecessary client interference. The drive was to create a ‘total team’ where everyone was valued equally” (Knott, 1996). It is obvious that all these steps gave the feeling that the project belonged to all partners, irrespective of client or contractors. The success of the project would be the success of everybody, any savings would be saving for all. This encouraged every one involved to make the project successful and thus the alliance was successful.



### ***3.8.2 Examples of difficulties in alliances in the UKCS***

An alliance would obviously be a failure if there is a serious breakdown in collaboration, the customer terminates the relationship because of serious non-performance by the contractor(s), the contractor terminates the relationship because of an unresolvable disagreement with the customer or the parties end up in court. There seem to be very few occasions when an alliance in the North Sea Industry has been terminated before it has run its term, and therefore could be said to have failed. Some possible examples of alliance failures include Schiehallion Oil Field FPS, Britannia Field Control Systems, BP's Eastern Trough Area Project (ETAP) Well Construction.

#### ***3.8.2.1 Schiehallion Oil Field FPS***

Several alliances were created to undertake the development of BP's Schiehallion oil field. The "Atlantic Frontier Alliance" between, BP, Brown & Root, Harland & Wolff and Single Buoy Mooring to construct a floating production, storage and off loading vessel was terminated in December 1996 because "the parties did not feel comfortable working with that contractual arrangement" (Cresswell, 1997). The alliance was replaced by a conventional contractual arrangement between the companies, with Brown & Root as the lead contractor. The Schiehallion field successfully came on-stream in July 1998, close to its target time. The other alliances associated with the development appeared to have worked well.

#### ***3.8.2.2 Britannia Field Control Systems***

In the project to develop Chevron and Conoco's Britannia field, the contract to develop the platform control system originally included a risk/reward element. However, it was reported by members of project team that the scope and complexity of the work was under-estimated, and the targets set for the risk/reward elements were unrealistic. It was therefore decided to revert to a conventional contractual relationship.



### *3.8.2.3 BP's Eastern Trough Area Project (ETAP) Well Construction*

Of the several alliances created to undertake BP's Eastern Trough Area Project (ETAP) the well construction alliance is said to have run into difficulties because "the challenges were somewhat under-estimated and problems were encountered with drilling these highly technologically advanced wells. There have been considerable cost overruns ... the risk/reward part of the alliance was cancelled ..... the old fashioned style of contracts was introduced but with a revitalised and modern way of operating them" (Potter, 1998). The development project was completed successfully and came on-stream in 1998.

### *3.8.3 Small to medium enterprise involvement in the UK upstream oil and gas industry*

Small companies are rarely involved in the formal alliances with operators. Most of the time a small company's relationship with the customers depends on informal connections i.e. personal contact which occasionally leads to their inclusion on approved supplier lists (Keogh and Bower, 1995). Some small companies may well be subcontractors to the first-line contractors in the alliance, but they will have a conventional relationship with their immediate customer. Sometimes small companies may well group together, or perhaps form an alliance of their own, jointly to market their products and services. The Sub Sea Technology Group is an example of such a grouping (Gray, 1995). Generally operators tend to form alliances with their contractors where:

- the potential benefits from working collaboratively far outweigh the additional costs of setting up and managing the alliance;
- the contractors feel able to accept some share of the (risks) penalties for cost-overruns or other non-performance;
- the contractors are able to commit the time of their senior managers to setting up and maintaining the alliance.



This situation tends to arise in activities which involve a high spend and where the contractors have a strong ability to influence the outcome. Small companies rarely fulfil these criteria. They are not normally able to accept a share of the risks (Bower and Keogh, 1997) and their management is not normally able to devote the time necessary to support a complete alliance. Nevertheless, it is possible for a small company to have a long term, collaborative relationship with a larger customer. Such a situation may occur, for instance, when the small company provides a specialised consultancy service. In this case, very few people would be involved and the effort to set up and manage the relationship would not be great. It is unlikely that remuneration of the small company would involve sharing of risks and rewards (Haque, *et al* 2000).

#### **3.8.4 Current situation**

Over the last 12 years, the industry has gained considerable experience of alliances and partnering. There are many examples of completed or ongoing collaborative projects in the industry. There have been collaboration for different types of projects, including subsea engineering (design through fabrication, installation and maintenance) or with provision of well construction services (drilling and well maintenance), management of production chemicals, accounting services, information management, and information systems. However there is evidence that some of the oil companies are moving away from the typical alliance and partnering contracts. In some cases operators have taken back control of the planning and execution of activities to accomplish their own agenda and that shared objectives, risk reward structures are less popular now (Green, 2001). For instance, Andrew field development, having had a very successful collaboration in development stage, the collaboration was extended to the maintenance stage, but recently BP has taken back control to run the project (BP, 2002).

Nevertheless, the industry does believe that there is benefit to be gained from collaboration across the whole supply chain, and collaborative relationships continue



to be formed between the companies working in the North Sea oil and gas industry, although the term ‘alliances and partnering’ is not always used. UKOOA are examining opportunities for inter-company sharing and cross-industry agreements in the area of logistics. Through LOGIC, arrangements for sharing marine logistics (supply boats) and helicopters were made in March 2001, with economic and environment benefits for all participants. An industry-wide Person on Board (POB) service is also being developed, via an application service provider, under the umbrella of this group, with some 14 operating companies involved. Initiatives have been taken to adopt a co-operative approach in abandoning and decommissioning over 300 suspended wells (UKOOA, 2002). It is suggested that there is significant potential for Norway and the UK to unlock value through increased co-operation to promote safe, timely, economic and sustainable development of gas resources across the North Sea (Ian Wood, 2002). Discussions have been taking place to initiate collaboration between the two countries. Issues for discussion include harmonisation of standards, co-operation over research and development, operational synergies, joint branding of North Sea technology overseas and greater use of combined infrastructure of gas transport (UKOOA, 2002).

### **3.9 Conclusion**

This literature overview has highlighted some of the key aspects of collaborative relationships (alliances and partnering) in the UKCS and other industries. It has also reviewed some contradictory views to collaborative relationship. However, detailed examination of issues such as whether ‘collaborative relationships’ or ‘power play’ is the way forward for business success was beyond the scope of this research. Rather the intention was to study alliances in practice in the North Sea oil and gas industry. The review suggests that alliances in the North Sea upstream oil and gas industry are not the same as in other industries. Unlike other forms of alliances, in the North Sea, the end customers are part of alliances, which are formed to complete a set of tasks more efficiently, and the remuneration of the contractors involves some sharing of risk and rewards. There are signs that the oil and gas industry



collaborations are taking new shapes in recent years. However, the review suggests that, with some exceptions, alliance and partnering strategies have worked well in the UK upstream oil and gas industry and, by adopting the strategy, the involved parties can benefit substantially.

Questions arise however, on what are the criteria of measuring success, what are the factors which make an alliance successful and what are the barriers to success of alliances and partnering in the UK oil and gas industry. Although, the review provides some answers of these questions, most or all of them are based on theory and are supported by very little empirical data. In order to explore these issues further, it is apparent that research is needed to comprehend the perceived criteria for success and failure of alliances and partnering and those factors which enable success of an alliance as well as the factors which are barrier to success. This led to the survey carried out in the first phase of the study.



## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

A research method is a strategy of inquiry which moves from underlying philosophical assumptions to research design and data collection. The choice of research methods influences the way in which data is collected (Myers, 1999). Research methodology involves analysis of principles and procedures in a particular field of inquiry that, in turn, govern the use of particular methods (Schwandt, 1997). Before choosing the methodology for a study it is necessary to have a clear idea of different techniques and approaches in social science research, their advantages and limitations and the occasions and situations when they can be most valued, the sort of problems to which that type of research is applicable, and how to make the most use of its findings (Gilbert, 2001).

The purpose of this chapter is to provide a synopsis of different issues, which were considered before and during data collection and analysis process for the research. The chapter begins by defining different types of research methods in social science and their implications in this study. This is followed by a discussion of different scaling methods and their application in the research. Then it reviews different sampling and data collection techniques to assist in the choice of selecting appropriate sampling and data collection techniques for the research. Finally the chapter ends by discussing different ethical issues concerning the research. Detail of the methodology adopted for phase 1 and phase 2 is discussed in chapters 5 and 9 respectively. In both phases data was collected by questionnaire and the data was mainly qualitative in phase 1 and quantitative in phase 2.



## **4.2 Deductive and Inductive Research Methods.**

In social science research, there are broadly two methods of reasoning, deductive and inductive reasoning (Trochim, 1999; Jackson, 1995) which are discussed below.

### ***4.2.1 Deductive method***

A deductive method of reasoning is typically characterised as thinking from general to the particular, and involves the formal steps of logic, which leads from valid premises to valid conclusion (Bright, 1991). Sometimes this is informally called a “top-down” approach. It might begin with thinking up a theory about a topic of interest and then narrowing it down into more specific hypotheses. Hypotheses are addressed by observations and finally are tested by specific data (Trochim, 1999). A deductive research method entails the development of a conceptual and theoretical structure prior to its testing through empirical observation. In a deductive explanation, a phenomenon is explained by demonstrating that it can be deduced from an established universal law. The deductive process begins with abstract conceptualisation and then moves on to testing through the application of theory so as to create new experience and observations (Gill and Johnson, 1991).

Given the nature of this method of thinking, deductive reasoning is often used in scientific explanation to examine the detailed implications and consequence of general laws that have been established empirically. When social scientists use deductive explanation, they try to show that the phenomenon to be explained is a logically necessary consequence of the explanatory premises. For example: if  $A = B$  and  $B = C$ , then  $A = C$  (Jackson, 1995).

### ***4.2.2 Inductive method***

The logical ordering of induction is the reverse of deduction as it involves moving from specific observations to broader generalisation and specific theories. Sometimes this process is called bottom-up approach. Inductive reasoning, by its very nature is more open-ended and exploratory. Inductive reasoning begins with



specific observations and measures, then it detects patterns and regularities, formulates some specific hypotheses and finally ends up developing some general conclusion or theories (Trochim, 1999).

Inductive reasoning involves the transition from the particular empirical instance to the general principle - encompassing the notion of a gradual assessing of empirical data from which general principles can be discerned and elaborated (Bright, 1991). If the results of data analysis are consistent with the prediction of the conceptual hypothesis, then the researcher has inductive evidence to support the chosen operational methods, the derived conceptual hypothesis and theoretical proposition themselves. However, if the results of the data analysis do not accord with the prediction of conceptual hypothesis, inductive reasoning does not enable the researcher to identify the cause of inconsistency. The problems may lie in the theoretical propositions, the conceptual hypothesis, the operational methods, or even the technique used for selecting the sample, or for analysing the data (Jackson, 1995).

This PhD study follows the inductive research method as the study explores different issues concerning successes and failures of alliances and partnering in the UK oil and gas industry.

### **4.3 Nature of Enquiries**

Rossi and White (1983) advocate other three broad types of classification of applied social research i.e. descriptive, analytical and evaluative research.

#### ***4.3.1 Descriptive research***

Descriptive type research is the most basic one. It emphasises the accurate portrayal of a population. The overall purpose of descriptive research is to provide a “picture” of a phenomenon as it naturally occurs, as opposed to studying the impacts of a phenomenon or intervention. Fundamentally, the descriptive research enquires about



‘what’ and how many of ‘what’ (Jackson, 1995). It helps to understand issues like, what events or outcomes are occurring? What are the characteristics of a category of persons or organisations? How prevalent or widespread are the events or phenomena? From the ‘intelligence and monitoring’ function of descriptive research it is possible to gain an insight on social, economical or cultural changes within a population, which may help to identify new areas of policy intervention.

#### ***4.3.2 Analytical research***

Analytical research is problem oriented and researchers attempt to model different social phenomena with empirical evidence. As a form of strategic applied research it goes beyond simple intelligence and monitoring functions. Its purpose is to illuminate a problem in such a way that action could be taken to resolve the problem.

#### ***4.3.3 Evaluative research***

Evaluative research is characterised by its focus on collection of data to understand or ascertain the effect of some social programme or phenomena. The primary aim of evaluative research is to determine the impact or effectiveness of a policy, social programme, social phenomena or a planned intervention (Gilbert, 2001). Evaluative research makes full use of the methodological techniques, concepts, theoretical insights provided by social sciences. In evaluative research either qualitative or quantitative methods or some combination of both types can be used.

From the definition and scopes of the three types of research it became apparent that the two studies of the PhD programme fall under two different categories namely analytical and evaluative research. The first phase study aimed to identify the distinguishing features, criteria of success, critical success factors of alliances and partnering in the UK oil and gas industry. In that way, the study is analytical in nature. The first phase study identified that ‘presence of trust is one of the most important success factor of alliances and partnering’ in the industry along with other findings. The finding of the first phase study encouraged me to undertake an



elaborate study on trust in the second phase. The second phase research explores the meaning of trust, the conditions under which trust is developed or diminished in collaborative relationships. The study also evaluates the role of trust in collaborative relationships in the UK oil and gas industry i.e. the relationship between level of trust present in a relationship and its level of success. Thus the second phase study may be considered as both analytical and evaluative type of research.

#### **4.4 Qualitative and Quantitative Research**

A distinction is usually made between two approaches of data collection and analysis in social science research; quantitative and the qualitative. The distinction is based on the degree to which the analysis is done by converting observations to numbers. The distinction also reflects differences in the types of questions asked, the kinds of evidence considered appropriate for answering a question, and the methods used to process this evidence (Jackson, 1995).

##### ***4.4.1 Qualitative approach***

Information gathered by research which is not expressed in numbers is known as qualitative, or soft data (Tesch, 1990). Qualitative techniques allow researchers to share in the understandings and perceptions of others and to explore how people structure and give meaning to their daily lives. Researchers using qualitative techniques examine how people learn about and make sense of themselves and others. Qualitative methods facilitate study of issues in depth and detail. Approaching fieldwork without being constrained by predetermined categories of analysis contributes to the depth, openness, and detail of qualitative inquiry. Rather than concerning itself primarily with representative samples, qualitative research emphasises careful and detailed description of social practices in an attempt to understand how the participants experience and explain their own world. At the macro level, a qualitative researcher tends to look at whole organisations; however, at the micro level the focus is on individual behaviours (Silverman, 2000).



The qualitative researcher uses methods such as participant and non-participant observation, unstructured interviews and questionnaires, documents or an in-depth analysis of a single case as a way of getting close to the data and studying social interaction in its natural surroundings (Gilbert, 2001).

#### ***4.4.2 Quantitative approach***

Quantitative research seeks to quantify, or reflect with numbers, observation about human behaviour. It emphasises precise measurement, the testing of hypotheses based on sample of observations, and a statistical analysis of data. The quantitative researcher attempts to describe relationships among variables mathematically, and to apply some of the numerical analysis to the social relations being examined (Jackson, 1995). Quantitative investigation entails adopting a numerical approach to the collection and analysis of data. This usually involves large-scale empirical studies using social survey techniques to collect data from representative samples of the population drawn from a wide geographical area. The aim is to produce useful factual data from which generalisation, often about characteristics of the society as a whole, can be made.

#### ***4.4.3 Research in the present study***

Qualitative and quantitative research are complementary not competitive techniques. The strength of each matches the weakness of the other (AQRP, 1999). Both quantitative and qualitative approaches have an important part to play in social research. It is probably best to think of qualitative/quantitative distinction as a continuum (Jackson, 1995). They can be used to highlight different dimensions of problem. Bullock *et al* (1995) suggest that in social science research, qualitative and quantitative approaches can be combined in number of ways. In fact, contemporary social research is essentially pluralistic; researchers often combine qualitative and quantitative methods within the same study (Robson, 1997; Pawson, 1989).



Qualitative and quantitative methods involve differing strengths and weakness, they constitute alternative, but not mutually exclusive, strategies for research. Both qualitative and quantitative data can be collected in the same study (Patton, 1990).

Likewise both qualitative and quantitative research approaches were taken for the research programme. Qualitative and quantitative research methodologies were combined to investigate different issues related to collaborative relationships in the oil and gas industry, with an emphasis on 'the role of trust in the collaborative relationships'. Qualitative data/information which were collected for the study were analysed in a quantitative fashion to illustrate, explain, and provide in-depth insight on the issues under investigation.

The first phase study aimed to understand perceived distinguishing characteristics, criteria of success, criteria of failure, critical success factors and critical failure of alliances and partnering in the UK oil and gas industry. It was important to understand respondents' emotion, thoughts about what was happening, their experience and their basic perceptions on those issues. Considering the type of information required to answer the research questions, a mainly qualitative approach was adopted in the first phase study, because this provides a framework within which people could respond in a way that represents accurately and thoroughly their points of view on the area of investigation and enabled understanding and capture their points of view without predetermining those points of view through prior selection of questionnaire categories. As Lofland (1971) put it: "To capture participants' views in their own terms one must learn their categories for rendering explicable and coherent the flux of raw reality. That, indeed, is the first principle of qualitative analysis". It is also argued that relative weakness of fixed designs (quantitative design) is that they cannot capture subtleties and complexities of individual human behaviour (Robson, 2002).

A quantitative approach was adopted in the second phase where respondents' opinions on the role of trust in collaborative relationships were gathered through a



number of sets of standardised questions. This method allowed the collection of opinions of a great many people, and facilitated comparison and statistical aggregation of systematic data collected through questionnaire survey.

## **4.5 Grounded Theory and its Implication to the Present Research**

### ***4.5.1 Introduction***

Social researchers try to answer two fundamental questions about society. What is going on (descriptive research) and why is it going on (explanatory research). The development of good explanations involves two related processes: theory construction and theory testing. Although theory testing is a common practice, however, often, social scientists begin constructing a theory through the inductive method by observing aspects of social life, and then seeking to discover patterns that may point to more or less universal principles. This method for analysing diverse, non-standard texts, transcripts or other kinds of qualitative scientific data was pioneered by Glaser and Strauss and described as ‘grounded theory’ which was further developed by Strauss and others (Glaser and Strauss, 1967; Martin and Turner, 1986; Richards and Richards, 1987). Grounded theory may be defined as research strategy whose purpose is to generate theory from data. The important point to make is that grounded theory is not a theory at all. It is an overall strategy for doing research. It is a method, an approach, and a strategy.

### ***4.5.2 Elements of grounded theory***

Three basic elements of grounded theory are concepts, categories and propositions. As an analytical tool, grounded theory involves breaking down the qualitative data into concepts, linking the concepts and integrating them in a way to give a new meaning to the data. Schwandt (1997) mentions grounded theory methodology as a concept-indicator model of analysis, which in turn employs the method of constant comparison. Empirical indications from data are looked at for similarities and differences. From this process the analyst identifies underlying uniformities in the indicators and produces coded categories or concepts. Concepts are compared with



more empirical indicators and with each other to sharpen the definition of the concept and to define its properties. Theories are formed from proposing plausible relationships among concepts and sets of concepts. Categories are higher in level and more abstract than the concepts they represent. They are generated through the same analytic process of making comparisons to highlight similarities and differences that are used to produce lower level concepts. Categories are the “cornerstone” of developing theory. They provide the means by which the theory can be integrated. The third element of grounded theory is a proposition, which indicates generalised relationships between a category and its concepts and between discrete categories. The generation and development of concepts, categories and propositions is an interactive process.

Analysis in grounded theory is composed of three major types of coding: a) open coding b) axial coding c) selective coding

Open coding: Open coding is the first stage of the qualitative analysis process. In this process collected data is desegregated into conceptual units and provided with a label. The same label or name is given to similar units of data. However, because this process commences without a basis in existing theory, the result may be the creation of a multitude of conceptual levels related to the lower level of focus. These code levels then need to be compared and placed into broader related groupings or categories. Strauss and Corbin (1990) suggest that there are three sources for deriving names for these categories: researcher creates them, they come from terms used in existing theory and the literature, or they are based on terms used by respondents.

Axial coding: In this stage the researcher tries to find relationships between the categories, which have emerged from open coding. As relationships between categories are recognised, they are rearranged into hierarchical form, with the emergence of subcategories. The essence of this approach is to explore and explain the phenomenon (subject of the research project) by identifying what is happening,



and why and how it is happening. This analysis helps to understand the relationships between categories (Saunders *et al*, 1997). Whereas open coding fractures the data into concepts and categories, axial coding puts that data back together in new ways by making connections between a category and its sub-categories. Thus axial coding refers to the process of developing main categories and their sub-categories (Pandit, 1996)

Selective coding: Selective coding involves the integration of the categories that have been developed to form the initial theoretical framework. Corbin and Strauss (1990) termed it as “the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development.” This is intended to identify one of those principal categories, which becomes known as the core category, in order to relate the other categories to it with the intention of developing a grounded theory. In the previous stage the emphasis was on recognising the relationships between categories and their subcategories. In this stage the emphasis is on recognising the relationships between the principal categories which have emerged from this grounded approach in order to develop an extraordinary theory (Saunders *et al*, 1997).

#### ***4.5.3 The use of literature in grounded theory***

Regarding the use of literature, grounded theory has a different perspective from the other research approaches. Guided by some research questions, with an open mind, the researcher collects data. The analysis is done by finding categories and concepts within the data, not by bringing them to the data from literature or anywhere else. Literature is used at a stage in the data analysis when theoretical direction become clearer and here the literature is seen as further data to be fed into the analysis (Punch, 1999).



#### ***4.5.4 Efficacy of grounded theory***

Grounded theory can be very helpful in analysing qualitative data where there is no preconceived theoretical framework. There may be a number of good reasons for adopting a grounded theory approach (Glaser and Strauss, 1967; Saunders *et al*, 1997, Punch, 1999, Pidgeon, 1991).

- exploring qualitative data without pre-determined theoretical or descriptive framework
- commencing an exploratory research project seeking to generate a direction for further work
- give the research process the rigour necessary to make the theory ‘good’ science
- help the analyst to break through the biases and assumptions, that can develop during the research process
- provide the grounding, and develop the sensibility and integration needed to generate a rich, tightly woven, explanatory theory that closely approximates the reality it represents

#### ***4.5.5 Implication of grounded theory to the present research***

Comparisons of the research methods adopted for the present PhD research programme and grounded theory methodology suggest that there are some associations between the them which are summarised below.

The first phase of the two phase studies conducted for the PhD programme, was exploratory in nature as it aimed to understand different issues related to alliances and partnering in the UK oil and gas industry. The study did not follow an established theory, or seek to prove any theory. Rather, through the exploratory nature of study, qualitative data was collected by using open questions on some significant aspects of alliancing and partnering in oil and gas industry i.e. its distinguishing characteristics, criteria of success and failure, critical success and failure factors. Although some closed questions were used to collect factual data, however five questions which asked opinion about these issues were open, albeit



with an example of the type of response sought. The purpose of the example was to provide guidelines so that the respondents could think in the right direction when answering the questions. This approach is identical to grounded theory methodology. In grounded theory approach qualitative data is also collected to investigate social phenomena. However, in grounded theory methodology data collection is a long-term process. The researcher collects some data on his area of interest with an open mind, analyses them and goes to the field to collect more related information and analyse it. This process continues as long the researcher gets a clear picture of the phenomenon which leads him to develop hypotheses. Generally data collection and data analysis go on simultaneously. However, unlike grounded theory approach the phase 1 study went through the data collection/data analysis cycle only once.

For this research programme, the first phase study leads to the second phase study where one of the identified issues was studied in more detail. Like grounded theory methodology, in the first phase study respondents were asked to provide their opinions on different issues related to alliances and partnering. Respondents expressed their views in a form of key words or phrases in a limited space in the questionnaire. However, in grounded theory methodology participants have the opportunity to speak or write in detail so that they can express their complete views on the matter under investigation. The researcher extracts the key words or ideas from scripts or texts for analysis purpose.

In the grounded theory methodology, analysis of the data begins with the development of concepts and categories. This process helps to build up ideas on how the categories or concepts relate within them or how they relate to the research questions, which leads to development of propositions or hypotheses. In the present study qualitative data was used to develop concepts and categories, but they were not used to develop hypotheses or propositions. Rather, concepts and categories were used to obtain answers to the research questions i.e. to understand issues like 'critical



success factors’ or ‘criteria of success’ of alliances and partnering in the UK oil and gas industry.

## **4.6 Scaling Methods**

‘Scaling is a method of measuring the amount of a property possessed by a class of objects or events’ (Nachmias and Nachmias, 1982). Social science research is mainly concerned with four levels of measurements i.e. nominal, ordinal, interval, and ratio level of measurement. The appropriateness of use of the measurement depends on the type of study and the type of research question used for collecting data. All of the four levels of measurements are discussed below.

### ***4.6.1 Nominal level***

The lowest level of measurement is nominal level where numbers or symbols are used to classify objects or observations into a number of categories. These numbers or symbols constitute a nominal, or classificatory scale. By means of the symbols 1 and 2, for instance it is possible to classify a given population by sex i.e. male or female with 1 representing male and 2 female population. The same population can be classified by nationality; British might be represented by the numeral 3 American by 4, Spanish by 5 and so on. It is possible to change the symbols without altering any information, if it is done completely and consistently.

### ***4.6.2 Ordinal level***

Social scientists study many variables that are not only classifiable but also exhibit some kind of relation. Typical relations are ‘higher’ ‘greater’ ‘stronger’ ‘more desirable’ ‘more difficult’ and so on. Whenever we evaluate a phenomenon or a process along a range such as excellent to terrible or highest to lowest we have an ordinal measurement. A number of human characteristics for example, attitudes, social classes, school grades etc can be measured at the ordinal level. Ordinal scale rank the individuals along the continuum of the characteristics being scaled, but again carries no implication of distance between scale positions- the step from



position 1 to position 2 may be greater, smaller or the same as from position 4 to position 5 (Moser and Kalton, 1989). The ordinal level of measurement is amenable to any monotonic transformation no matter how the numbers are manipulated; that is, the information obtained does not change. As long as it is consistent, it does not also matter what numbers are assigned to a category of objects. Transformation that does not change the order of properties is permissible at the ordinal level. Accordingly researchers can perform any mathematical and statistical operations that do not alter the order of properties (Nachmias and Nachmias, 1996).

#### ***4.6.3 Interval level***

An interval of measurement is characterised by a common and constant unit measurement that assigns a real number to all pairs of objects in the ordered set. Interval level measurement allows us not only to rank a set of observations in term higher or lower but also to specify exact distance between each of the observations. For example, with interval level it is possible to measure not only Susan earns more than Thomas, but also that Susan earns, say £300 more than Thomas. To make these quantitative comparisons, we must have a precise unit of measurement. Any change in the numbers assigned to the observations must preserve not only their ordering but also their relative differences. Thus the information at this level is not altered if, for example, we multiply each number by a positive constant and then add a constant to the product (Nachmias and Nachmias, 1996).

#### ***4.6.4 Ratio level***

The highest level of measurement is a ratio scale. When variables have natural zero points, they can be measured at this level. Variable such as weight, time, length, all have natural zero points and are measured at the ratio level. With a ratio scale one can compare both differences in scores and the relative magnitude of scores; for instance the difference between five and ten minutes is the same as between ten and fifteen minutes. A ratio level of measurement, most commonly encountered in the physical sciences where it is possible to attain all four of these relations;



equivalence, greater than, known distance of any two interval, and a true zero point (Moser and Kalton, 1971).

For the PhD research programme, peoples' opinions were gathered and their attitudes on different issues related to collaborative relationships and trust were measured. Considering the type of study and suitability of different methods of measurements, the two lower levels of measurement i.e. nominal and ordinal level of measurement were used for the studies. As Moser and Kalton suggest, (1989) most opinion/attitude scaling is not so ambitious, attempting nothing higher than the interval level of measurement.

## **4.7 Validity and Reliability**

### **4.7.1 Validity**

Validity is defined as the extent to which a measure reflects a concept, reflecting neither more nor less than what is implied by the conceptual definition (Jackson, 1995). That is to say validity is an estimate of accuracy of an instrument or of the study results. It is concerned with whether the findings are 'really' about what they appear to be about. Are any relationships established in the findings 'true', or due to the effect of something else? Campbell and Stanley (1966) invoked two types of validity in social science research i.e. internal and external validity.

*4.7.1.1 External validity:* External validity refers to the approximate validity with which we can infer that the presumed causal relationship can be generalised to and across alternative measures. The generalisability refers to the extent to which a finding of an enquiry is more generally applicable for example, in other contexts, situations, or times, or to persons other than those directly involved (Robson, 1997). That is, external validity is concerned with the extent to which the findings of a study can be applied to a wider population.



In population research, a study has good external validity if the subjects are selected using random sampling methods and if a high response rate is obtained so that the results are applicable to the entire population from which the study sample was recruited, and to other similar populations. If the results of a study can be applied to a wider population, then the study has external validity, that is it has good generalisability (Robson, 1997). Jackson, (1995) argues in qualitative research, the issue of external validity perhaps needs to be thought about in a slightly different way from quantitative research. Given the small number of cases typically studied in qualitative projects, the issue of validity is perhaps better thought in terms of credibility. 'A qualitative study is credible when it presents such faithful descriptions or interpretations of a human experience that the people having that experience would immediately recognise it from those descriptions or interpretations as their own. A study is also credible when other researchers or readers can recognise the experience when confronted with it after having only read about it in a study' (Sandelowski, 1986)

#### *4.7.1.2 Internal validity*

Internal validity is the extent to which a study method is reliable. A study has internal validity if its measurements and methods are accurate and repeatable, that is if the measurements are good estimates of what they are expected to measure. If a study can plausibly demonstrate the causal relationship between treatment and outcome, it is said to have internal validity (Robson, 1997). Cook and Campbell, (1979) suggest internal validity refers to the approximate validity with which we infer that a relationship between two variables is causal or that absence of a relationship implies the absence of cause. They also mention some specific threats which can operate independently or together to diminish the internal validity of a study. Examples of the threats to the internal validity are:



*History* – Things that have changed in the participants' environments other than those forming a direct part of enquiry (e.g. discovery of a huge oil or gas field in the UK).

*Testing*- Changes occurring as result of practice and experience gained by participants on any pre-tests (e.g. asking opinion on safety issue after occurrence of a terrible disaster).

*Instrumentation*- Some aspect(s) of the way participants were measured between pre-test and post-test (e.g. raters in observational study using a wider or narrower definition of a particular behaviour as get more familiar with situation).

*Regression* – If participants are chosen because they are unusual or atypical (e.g. high scorers).

*Mortality* – Participants dropping out of the study (e.g. selective dropping drop-out of those who are making little progress in a study of adult literacy programme).

*Maturation*- growth and development in participants unrelated to the treatment in the enquiry (e.g. evaluating extended athletics training programme with teenagers, intervening changes in weight or general maturity).

*Selection*- Initial differences between the groups prior to involvement in the enquiry (CRINE champions may have more knowledge than other groups).

*Selection by maturation interaction* – predisposition of groups to grow apart (use of groups of boys and girls initially matched on physical strength in a study of fitness programme).

*Ambiguity about causal direction* – Does A cause B, or B cause A? (e.g. does trust between collaborative partners bring success in a relation or successes bring trust between partners?).

*Diffusion of treatments*- When one group learns information or otherwise inadvertently receives aspects of a treatment intended only for a second group.

*Compensatory equalisation of treatments* – If one group receives 'special' treatment, there will be organisational and other pressure for a control group to receive it (nurses in a hospital study may improve the treatment of a control group on ground of fairness).



Linclon and Guba (1985) discuss various possible threats to validity of qualitative research, dividing them into the three broad headings of reactivity, respondents' biases and researcher's biases. Reactivity refers to the way in which the researcher's presence may interfere the setting which forms the focus of the study. Respondents' bias can take various forms, ranging from obstructiveness and withholding information - when, for example, the researcher is seen as a threat – to the 'good bunny' syndrome, when the respondent tries to give the answers or impressions which they judge that the researcher wants. Researcher bias refers to what the researcher brings to the situation in terms of assumptions and preconceptions, which may in some way affect the way in which they behave in the research setting, perhaps in terms of kind of questions asked, selection of data for reporting and analysis.

#### **4.7.2 Reliability**

Reliability is an indication of the extent to which a measure contains variable errors, that is, errors that differed from observation to observation during any one instance and that varied from time to time for a given unit of analysis measured twice or more by the same instrument. Factors such as momentary absent-mindedness, ambiguous instructions, and technical difficulties may cause the introduction of variable errors. These errors are called variable errors because the amount of error varies from one observation to another and also because the amount of error is different for a given observation each time it is measured (Nachmias and Nachmias, 1982). A scale or test is reliable to the extent that repeat measurements made by it under constant conditions will give the same result (assuming no change in the basic characteristic e.g. attitude being measured). Reliability has several forms, depending on the nature of data collected, though all of them are concerned with consistency (Black, 1999).

- Within the instrument. How uniform are the responses to questions that make up operational definition? Lack of consistent answers due to misinterpretation can introduce error in measurement.



- Across time. For example, when there are multiple observations using an observation schedule, is there consistency in applying criteria pre-treatment and post-treatment observation? Alternatively, with many observations over a long period of time, was the observation at the beginning consistent with those at the end?
- Across observers. In studies that involve a team of observers, are all observers ‘seeing’ the same thing, agreeing in their conclusion? Is there consistency across observers?

Reliability is one attribute needed in the scale, validity is another. A definition of validity has already been given earlier but the context demands a wider explanation. By validity is meant the success of a scale in measuring what it sets out measure, so that differences between individuals’ scores can be taken as representing true differences in the characteristic under study. To the extent that a scale is unreliable it also lacks validity. But a reliable scale is not necessarily valid, because it could be measuring something other than what it was designed to measure (Moser and Kalton, 1971).

#### ***4.7.3 Validity and Reliability of the Current Study***

Maintaining increased validity and reliability was an important area of concern and numbers of steps were taken in this respect. For example, in the first phase study respondents were selected randomly from different groups of people working in the industry with a view to increasing the validity. While for the second phase study, the random selection method was not employed, priority was given to the experience and knowledge of the respondents, as knowledge of the subject matter was important in order to respond to the questions used for the survey, which also contributed towards the increased validity of the research.

For both the studies self-administered questionnaires were used to collect information/data. To increase the reliability of the questionnaire, questions were



worded in such a way that they are easily understood by the respondents and that they measure what is intended to measure. Consideration was given to minimise abstract terms or jargon which might create confusion or ambiguity. The questions were worded in such a way that they had the same meaning for each respondent. The questionnaires were piloted and subsequent necessary changes were made, before conducting the survey.

Again great care was taken in coding data appropriately, entering data into database, conducting a range of visual checks, making necessary corrections, and checking duplicated or incorrect records in key fields before performing analysis of the data in both the studies. Steps which were taken to increase validity and reliability of phase 1 and phase 2 studies are further discussed in chapter 5 and chapter 9 respectively.

However there areas of concern where validity and reliability might have been affected which are:

Respondents bias- In phase 1 respondents were asked question about partnering and alliancing and in phase 2 respondents (not same) were asked to give their opinions on collaborative relationships. In the oil and gas industry different types of collaboration were practised during the study period. Some were of shorter term than others, some collaborative relationships were formed to complete specific projects, whereas some were for maintenance of completed projects, some had more close relationships than others. Hence, due to differences in circumstances and experience, respondents might have responded differently. However, a holistic view was taken by making average of the responses.

Researcher's bias might have occurred especially in phase 1 study during interpretation of some of the respondents' opinions. The responses might have been wrongly interpreted during analysis and grouped under incorrect concepts. To reduce this bias supervisors were frequently consulted and other colleagues were involved during analysis of the data.



Another possible threat would be difference of experience and knowledge of different groups selected which could influence the responses. Some groups were more knowledgeable than others, for example CRINE champion group in phase 1 study. Their responses might have caused a threat to validity because of the initial differences between the groups. Nevertheless their expert opinions have made a great contribution to the findings.

Compensatory rivalry may have also occurred in phase 2. Some of the respondents might have over valued the level of trust present or over stressed the success level of their collaborative relationship to demonstrate that their relationship was a more successful one.

Again for both phases information was collected through self administered questionnaire survey. Ambiguities and misunderstandings might have occurred, or the respondents may not have treated the exercise seriously which obviously could reduce the validity and reliability of the study.

Lastly respondents for the phase 2 study were selected using a non-probability sampling method. The prospective respondents were selected subjectively on the basis of their knowledge and experiences of either managing or working in collaborative relationships. This may have reduced a degree of external validity, however by adopting a purposive sampling method it was possible to select the respondents who possessed the desire characteristics of the population. A detailed discussion the rational of selection method has been made in section 9.2.3.

Obviously the types of validity and reliability vary in different types of studies. Estimating the validity and reliability of a relationship is a deductive process in which the investigator has to think whether any of the threats of validity and reliability has influenced the data. When all the threats can plausibly be eliminated, only then it is possible to make confident conclusions about whether a relationship is



probably causal. However, in social science research it is not possible to eliminate all the threats because many things are not within the control of the researcher. Therefore, the researcher has to take care before making a confident conclusion that a relationship between two variables is causal (Jackson, 1995).

#### **4.8 Sampling Techniques**

Sampling is an important aspect of scientific research. It is often impossible, impractical or extremely expensive to collect data from all potential units of analysis covered by the research problem. In order to save money and time researchers normally draw inferences on all units (a set) based on the relatively small number of units (a subset). The entire set of relevant units of analysis is called the population (Nachmias and Nachmias, 1996). And a sample is a special subset of a population observed for the purpose of making inferences about the nature of the total population. There are two major categories of sampling procedures: probability sampling procedures and non-probability sampling procedures. In probability sampling procedures each sampling unit has a known chance of being selected, while in non-probability sampling techniques it is not possible to specify the probability that any sampling unit will be included in the sample. The selection methods for non-probability samples contrast with the methods used for probability samples, which are selected by random mechanisms that assure selection independent of subjective judgements. Both of the sampling techniques have different forms and procedures of selecting samples which are discussed below.

##### ***4.8.1 Probability sampling procedures***

Probability samples have the distinguishing characteristic that each unit in the population has a known, nonzero probability of being selected for the sample. To have this characteristic, a sample must be selected through a random mechanism. Random selection mechanisms are independent means of selection that are free from human judgement and the other biases that can inadvertently undermine the independence of each selection. Randomisation serves two principal functions in the



social sciences. The first is to draw samples that are representative of a known population within limits of sampling error; the second is to draw samples that are comparable to each other within known limits of sampling error, which helps to facilitate causal inferences (Cook and Campbell, 1979).

#### *4.8.1.1 Simple random sampling*

This involves selection of sample at random from a list of population (known as the 'sampling frame'). A lottery method, random number tables, or a computer can be used. If properly conducted, this gives each person an equal chance of getting selected. The importance of randomness in the selection procedure cannot be overemphasised. It is an essential part of protection against selection bias. If it is not possible to assign to each population unit a calculable probability of selection, then precision of a sample estimate cannot properly be assessed (Moser and Kalton, 1971).

#### *4.8.1.2 Systematic sampling*

This involves choosing a starting point in the sampling frame at random, and then choosing every *n*th person. Thus if a sample of fifty is required from a population of 2,000 then every fortieth person is chosen. There would have to be a random selection of a number between one and forty to start off the sequence. Both random and systematic samplings require a full list of the population. Getting this list is often difficult.

#### *4.8.1.3 Stratified random sampling*

This involves dividing the population into a number of groups or strata, where members of a group share a particular characteristic or characteristics; e.g. stratum A may be female, and stratum B males. There is then random sampling within the stratum. Sampling theory shows that in some circumstances stratified random sampling can be more efficient than simple random sampling, in the sense that for a given sample size, the mean of stratified samples is likely to be closer to the population mean. Stratification does not imply any departure from the principle of



randomness. All it means is that, before any selection takes place, the population is divided into a number of strata; then a random sample is selected within each stratum. Stratified sampling does not require that the sampling fraction is the same within each stratum, but this is in fact a common design (Moser and Kalton, 1971). If there is such a uniform sampling fraction, the design is known as proportionate stratified sample; the sample size from a stratum is proportional to the population size of the stratum. If there are variable sampling fractions, the sample is a disproportionate stratified sample.

#### 4.8.1.4 *Cluster sampling*

This involves dividing the population into a number of units, or clusters, each of which contains individuals having a range of characteristics. The cluster themselves are chosen on a random basis. The sub-population within the cluster is then chosen.

#### 4.8.1.5 *Multi-stages sampling*

This is an extension of cluster sampling. It involves selecting the sample in stages; i.e. taking samples from samples. Thus one might take a random sample of schools; then a random sample of the classes within each of the schools; then from the selected classes choose a sample of children. As with cluster sampling, this provides a mean of generating a geographically concentrated sampling. The key point of the selection method is that at each stage of the sampling process, every unit must have a known chance of being selected.

### 4.8.2 *Non-probability Sampling*

Non-probability samples are used for many social science researches. These samples can be chosen for convenience or on the basis of systematically employed criteria. Non-probability sampling actually comprises a collection of sampling approaches that have the distinguishing characteristic that subjective judgements play a role in sample selection (Bickman and Rog, 1998). In non-probability sampling, it is not possible to specify the probability of inclusion of any sampling unit in the survey.



These procedures do not provide potential respondents with known chances of being asked to participate in a study. There are four types of non-probability techniques used in social research.

#### *4.8.2.1 Quota sample*

In a quota sampling respondents are selected on the basis of meeting certain criteria. Here no list of potential respondents is required: the first respondent to meet the requirement(s) is asked to participate and sampling continues until all the categories have been filled - until the quota for each has been reached. The objective of this sampling is to select a numerical quota of persons with specific characteristics, usually resulting in numbers that are proportional to the identified population. This approach is an inexpensive way of providing an adequate number of subjects with appropriate characteristics, but it is not possible to prove that the samples are representative of designated populations.

#### *4.8.2.2 Snowball sampling*

This is an interesting approach where subjects with desired traits or characteristics give names of further appropriate subjects to be contacted. It is of value when there is difficulty in identifying members of the population, e.g. when this is a clandestine group. This approach might be a way to select subjects for drugs study. If a researcher is able to find few drugs users willing to talk, they might be asked for the names and locations of others they know who might also be willing to be interviewed.

#### *4.8.2.3 Purposive sampling*

The principle of selection in purposive sampling is the researcher's judgement as to typicality or interest. A sample is built up which enables the researcher to satisfy his specific needs in a project.



#### *4.8.2.3 Convenience samples*

Convenience samples involve selection on the basis of ease or convenience. If a researcher was to 'poll' people entering a shopping mall on their attitudes towards an upcoming election, he would be selecting a convenience sample.

### **4.9 Data Collection Techniques**

In social science, a number of research techniques may be used to collect data/information e.g. secondary data collection, experiment, quasi-experiment, and case studies and survey. Data which is collected by persons other than the researcher is called secondary data. For example, a researcher who wishes to monitor changes of oil price or production level may rely on existing government statistics. The objective of the first phase study was to understand success factors of alliances and partnering, and the second phase aimed to explore the role of trust in collaborative relationships which required collection of primary data from the field. Therefore, the option remains to focus on three methods which are usually used to collect primary data social science research i.e. experiment, case studies and survey.

#### ***4.9.1 Experiment***

Experimental research attempts to measure the effects of manipulating one variable on another variable. Typical features of experiments are: selection of samples of individuals from known populations; allocation of samples to different experimental conditions; introduction of planned change on or more variables; measurement on small number of variables; control of other variables; usually involves hypothesis testing. A researcher might be interested to find out performance levels of workers with different levels of supervision. For this he would possibly use an experimental design by dividing the workers into different groups. The study did not intend to measure the effect of manipulating one variable on another variable, or to introduce some form of change in the experience of participants with a view to producing a resulting change in their behaviour, hence this technique was inappropriate and we



are left to adopt one (or more than one) of the non-experimental data collection techniques such as case study, or survey.

#### ***4.9.2 Case study method***

‘Case study is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence’ Robson (1996). In case study, the case is the situation, individual, group, organisation or whatever it is that a researcher is interested in. Case studies tend to allow one to answer ‘why’ and ‘how’ questions more thoroughly of a phenomenon (Black, 1999). Yin (1994) stated that ‘the case study allows an investigation to retain the holistic and meaningful characteristics of real life events, such as individual life cycles, organisational and managerial process, neighbourhood change, international relations and the maturation of industries, He suggests that case studies are a sound research approach to adopt, which can uniquely contribute to our knowledge of individual, organisational, social and political phenomena.

For many purposes and situations in which enquiry in the real world takes place, a different strategy which concentrates on studying ‘cases’ is worth serious consideration. Rather than seeking to carry out weak versions of laboratory experiments, or assuming that the alternative is necessarily a survey, it may be preferable to conduct a case study (Gummesson, 1991).

#### **Advantages**

One of the greatest advantages of case study research is that, it provides greater opportunity than other available research methods to take a holistic view of a process. It enables the researcher to study different aspects, examine them in relation to one another, and to view the process within its total environment (Gummesson, 1991)



Case studies allow the researcher the opportunity to pursue issues to greater depth in more realistic situations (assuming the researcher does not become a variable through his or her actions). Case studies enhance the investigation of subjects in real situations where interaction is of paramount interest and they encourage greater depth of study of chains of events.

### Disadvantages

Although case studies have gained some popularity as an analytical tool in social science research, there are some arguments against case studies as a scientific method e.g.; they lack statistical validity, case studies can be used to generate hypotheses but not to test them and generalisation cannot be made on the basis of case studies (Hagg *et al*, 1978). Another difficulty with a case study is that it requires negotiation of prolonged access to several people in each organisation.

The present research did not try to answer any 'why' question; rather it tried to answer some 'what' questions. Phase 1 investigates what the criteria of success, criteria of failure, critical success factors, critical failure factors are of alliances and partnering. Phase 2 investigates what the role of trust in collaborative relationship is. Again any of the phases did not intend to develop detailed and intensive knowledge about a single 'case' or small number of related 'cases'. Rather they tried to gather peoples' views on some important issues of oil and gas industry collaborative relationships. Therefore, use of a case study method for collecting data was ruled out. However it may be argued that some of the issues which were studied in phase 2 e.g. 'what do people mean by trust', what causes increase or decrease in trust between people in collaborative relationships, could have been better investigated by observing peoples' behaviour i.e. by doing case studies in collaborative relationships. At certain level this argument may be true. However, conducting case studies in one or a few relationships requires a considerable number of researchers and a substantial amount of time and other logistics. Neither was available for this



PhD research project and therefore it was not feasible to perform case studies, which left us to depend on survey methodology to collect information for the studies.

#### **4.9.3 Survey**

Survey research is a method of collecting data in which a specially defined group of individuals are asked to answer a number of identical questions. Surveys can be used to test accepted explanation or theories as well as to develop new theories. According to a number of researchers survey research is probably the best method available to the social scientist interested in collecting original data, gathering opinions, and measuring attitudes in a large population (Goode and Hatt, 1952; Babbie, 1995). Baker (1998) suggests that survey research tends to be the method of choice for those who want look at the broad pattern of social life or who want to describe widespread social reaction. Survey is a method of collecting information by having respondents complete a questionnaire. Questionnaires can be completed in group settings, mailed to respondents, or read to respondents by interviewers either over the phone or in person. There are many variants of the survey and the differences are determined by how the data are collected. Each method has a distinctive set of advantages and disadvantages.

##### **4.9.3.1 Individually delivered questionnaires**

Individually delivered questionnaires are delivered to the respondent by a researcher. A brief explanation is offered, any questions are answered, and arrangements are made for the return of the completed questionnaire. This method of handling out questionnaires may be used in community surveys, social or business gatherings, or studies in organizations where questionnaires are handed to selected respondents. In conducting this kind of survey, care should be taken to provide everyone with an equal chance of participating in the survey.



#### 4.9.3.2 *Group-administered questionnaires*

In this kind of survey, the questionnaires are administered to groups of people, either in a classroom or group setting environment. In group administered questionnaires, researchers have the opportunity to explain the purposes of the survey, provide instructions and answer questions of the prospective respondents. Group-administered questionnaires usually have good response rates, because there is considerable informal pressure on individuals to cooperate with the researcher.

#### 4.9.3.3 *Mail questionnaires*

The mail questionnaire is an impersonal survey method. It is a method of collecting information from respondents who complete the process themselves. Under certain conditions and for a number of research purposes, an impersonal method of data collection can be useful. It could be used to gather both qualitative and quantitative information. As with any method, however, mail questionnaires have both advantages and disadvantages.

##### Advantages of mail questionnaire

Low cost: Economy is one of the most obvious appeals of mail questionnaires. The lower cost of administering a mail questionnaire is particularly evident when the population under study is widely spread over a large geographical area. It does not require trained staff of interviewers; all it entails is the cost of planning, sampling, duplicating, mailing, and providing stamped, self-addressed envelopes for the returns.

Accessibility: Mail questionnaires allow for a wider geographic coverage since they can be mailed anywhere within a country or around the world.

Larger sample: The low unit cost of mail questionnaire combined with its ability to cover a wider geographic area with little additional cost enables the study of a larger sample of persons or groups.



Reduction in biasing errors: The use of mail questionnaire reduces biasing errors that might result from the personal characteristics of interviewers and variability in their skills.

Greater anonymity: It is believed that people are more likely to provide complete and truthful information when it is collected by mailed questionnaires. The assurance of anonymity that a mail questionnaire provides is especially helpful when the survey deals with sensitive issues, such as sexual behaviour or child abuse.

Considered answers and consultations: Mailed questionnaires are also preferable when questions demand a considered (rather than immediate) answer or if an answer requires respondents to consult personal documents or other people. It also allows respondents to see the context of a series of questions (Jackson, 1995).

#### Disadvantage of the mail questionnaires

Requires simple questions: Researchers can use the mail questionnaire as an instrument for data collection only when the questions are straightforward enough to be completed solely on the basis of printed instructions and definitions.

No opportunity for probing: The answers have to be accepted as final; researchers have no opportunity to probe beyond the given answer, to clarify ambiguous answers, or to appraise the nonverbal behaviour of the respondents.

No control over who fills out the questionnaire. With a mail questionnaire, researchers have no control over the respondent's environment; hence, they cannot be sure that the appropriate persons complete the questionnaire. An individual other than the intended respondent may complete it.

Inferior data quality: Respondents may not treat the exercise seriously; and the researcher may not be able to detect this.

Low response rate: Low response rate is one of the greatest disadvantages to the mail questionnaires. The typical response rate for a mail survey without follow-up is between 20 and 40 percent. (Nachmias and Nachmias, 1996). Although the use of pre-mailings, follow-up contacts, incentives, targeted populations and other



factors do contribute towards increasing response rates, on the whole, these rates will be lower than those received by telephone and personal interviews.

#### *4.9.3.4 Personal Interview.*

The personal interview is a face-to-face, interpersonal role situation in which an interviewer asks respondents questions, designed to elicit research answers. Personal interviews are regarded as important data collecting tools for conducting surveys. This method comprises a directed conversation, whereby the purpose is to gather information by means of administering an identical set of questions in a consistent way to all respondents. The questions, their wording, and their sequence define the structure of the interview. Generally face-to-face interviews are of two kinds; structured interview and interview schedule.

Structured interview involves face-to-face interviews where questions are read to the respondents. Such interviews ordinarily will provide for in-depth probes on some questions. An interview schedule outlines the major questions that are to be raised. The interviewer has greater autonomy in exploring questions in detail. Interviewing skills are important to obtain the right information. Care must be taken not to 'lead' the respondent. Furthermore, the responses are filtered through the interviewers and if there are a number of interviewers, one must realize that some of the variations in responses will be due to differences between interviewers and not solely to differences between the respondents. Interview schedules are used for in-depth interviews in field studies.

#### Advantages of personal interview

Flexibility: The interview allows greater flexibility in the questioning process. Some interviews allow the interviewer to determine the wording of the questions, to clarify terms that are unclear, to control the order in which the questions are presented, and to probe for additional and detailed information.



Control of the interview situation: One major advantage of the interview is that it gives the researcher greater control over the interviewing situation. An interviewer can ensure that the respondents answer the questions in the appropriate sequence. Researchers can also stabilize the research environment in order to ensure that the interview is conducted in private; thus the respondents do not have the opportunity to consult one another before giving their answers.

High response rate: The personal interview results in a higher response rate than the mail questionnaire. Respondents who would not ordinarily take time to reply to an impersonal mail questionnaire will often respond to a request for a personal interview. This is also true of people who have difficulties in reading or writing or do not fully understand the language.

Collection of supplementary information: An interviewer can collect supplementary information about respondents. This may include background information about respondents' personal characteristics and their environment that can aid the researcher in interpreting the results. Moreover, an interview situation often yields spontaneous reactions that the interviewer can record and that might be useful in the data analysis stage.

#### Disadvantage of personal interview

High cost: The cost of interview studies is significantly higher than that of mail surveys. Costs are involved in selecting, training and supervising interviewers; in paying them; and in the travel and time required to conduct interviews. Furthermore, the cost of recording and processing the information obtained in the non-structured interviews is also high.

Interviewer bias: The very flexibility that is the chief advantage of interviews leaves room for the interviewer's personal influence and bias. The lack of standardization in the data collection process also makes interviewing highly vulnerable to interviewer bias.



Lack of anonymity: The interview lacks the anonymity, respondents may feel threatened or intimidated by the interviewer, especially if the respondent is sensitive to the topic or some of the questions (Robson, 1997).

#### 4.9.3.5 *Telephone Interview*

The telephone interview also called the telephone survey, can be characterised as semi personal method of collecting information. With the technological changes and improvements in telephone equipment, telephone surveys are gaining popularity. It has become possible to draw a random sample of telephone numbers by a process called random-digit-dialing (RDD).

#### Advantage of telephone interview

Speed: Telephone interviewers can reach a large number of respondents in a short time. Interviewers can code data directly into computers, which can later compile the data.

High response rate: Telephone interview provides access to people who might be unlikely to reply to a mail questionnaire or refuse a personal interview.

Quality: High quality data can be collected when interviewers are centrally located and supervisors can ensure that questions are being asked correctly and answers are recorded properly. It also provides opportunity to probe and clarify response.

Economy: This approach is less costly and time consuming than personal interviews. It also can be used to follow up non-responses (Babbie, 1995; Goode, 1952).

#### Disadvantage

Reluctance to discuss sensitive topics: Respondents may be hesitant to discuss some issues over the phone.

The 'broken-off' interview: Respondents can terminate the interview before it is completed.



Less information: Interviewers cannot provide supplemental information about the respondents' characteristics or environment.

Considering the advantages, disadvantages and the suitability of different data collection methods, the survey method was adopted to collect data/information in phase 1 and phase 2, details of which are discussed in chapter 5 and 9 respectively. It must be mentioned here that interviews were not conducted in any of the studies other than some telephone calls to be clear about some confused responses to the questionnaire survey. It is fully recognised that similar information could be collected by interview and that interviews would have allowed the researcher to discuss some issues in greater depth. It could have also allowed the researcher to check the validity of the responses, remove confusion, and add new information to the research findings and thus allowing increased triangulation to the research process.

However, the idea of interviewing people was not pursued because it was considered difficult to get access to different levels of people in the five relationships involving the 21 companies where the questionnaire survey was being conducted. Even if access was given to the people of the surveyed companies there would not have been enough time and other resources to conduct the interviews. The survey generated a sufficient amount of data to answer the research questions and the number of respondents was satisfactory.

#### **4.10 Piloting the Questionnaires**

A pilot investigation is a small-scale trial before the main investigation, intended to assess the adequacy of the research design and the instruments to be used for data collection. Piloting the data collection instruments is essential, whether interview schedules or questionnaires are used (Sapsford and Jupp, 1998). In both the studies questionnaires were piloted before conducting the final surveys. The following areas were considered in the pilot studies:



- Did the respondents understand the question as initially phrased? Were the potential respondents able to think of the whole range of possible responses to the questions used in the questionnaire?
- Was the order of the questions right?
- Were instructions for completing the questionnaire clear and enough to the respondents?
- Was there any ambiguity in any of the statements used in Likert questions to gather respondents' opinions?
- Did the questionnaire take too long to complete?

#### **4.11 Ethical Concerns**

Research ethics are important in all types of research. When the research involves or affects human beings, the researcher must attend to a set of ethical and legal principles and requirements that can ensure the protection of the interests of all those involved. As the scope of the social sciences has expanded and as our methods of research and analyses have become more sophisticated and penetration, concern over the ethics of conducting social science research has grown. Issues related to research participants' rights and welfare and researchers' obligations have been discussed in some of the social science professions, and most scientific associations and research organisations have adopted ethical codes that cover their particular domains (Nachmias and Nachmias, 1996). From the ethical point of view researchers must follow some general principle in conducting social research which includes informed consent, respect for privacy, safeguarding the confidentiality of data, harm to subjects and researchers, deceit and lying in the course of research.

Conflicting pressures often emerge in designing studies, as the researcher may be torn between the desire to use the 'ideal' design for a study and the desire to use a less effective design that does not entail activities and techniques that goes beyond what is 'ethically possible' especially with human subjects. However researchers have obligations to their subjects, to themselves, to their disciplines, and to their



society. Researchers need to recognise their different roles and obligations. What is convenient for a researcher may be unacceptable ethically. Furthermore, Jackson (1995) argues that researchers have not only an ethical responsibility to preserve the anonymity of respondents, but also a practical interest in doing so: their ability to collect accurate information would be impaired if the public believed that the responses were not kept in confidence.

Ethical issues were taken into consideration in both the studies described in this thesis. The participants were assured that their information would be treated as confidential: even if we would be able to identify a particular respondent's and his organisation's information, they would not be revealed publicly. Anonymity of the respondents and their organisation was maintained by giving the respondents a code number and the relationships an alias to keep the promise of confidentiality. No pressure was placed on any respondent to cooperate in the study. Respondents were free to refuse participation, or refuse to answer any particular question. However, follow-up letters and emails were sent to the prospective respondents who did not respond in time. As Jackson (1995) suggests, it is appropriate in a mail survey to follow up on those who do not respond, with a letter or phone call. According to the commitments which were given during data collection, five separate complete reports were supplied to the relationships concerned.



## **CHAPTER 5**

### **RESEARCH METHOD EMPLOYED IN THE FIRST PHASE STUDY**

#### **5.1 Introduction**

Chapter 4 gives a general description of research methods available to social scientists. This chapter will describe the detail of the methodology adopted in first phase study which was conducted with the following objectives:

1. To determine the distinguishing features of alliances and partnering in the UK oil and gas industry
2. To determine the criteria of success and criteria of failure of alliances and partnering in the UK oil and gas industry
3. To determine the critical success factors and the factors which cause failure of alliancing and partnering in the UK oil and gas industry.

#### **5.2 Opportunistic/Exploratory nature of the first phase study**

Selecting a research method is one of the most critical decisions in social research. There is no straightforward rule to guide the decision for the researcher. Many factors influence the choice of research design and there is no ‘best method’ for a study (Robson, 1995). The selection of a research method was driven by the kind of research questions this study was seeking to answer. This was moderated by what was feasible in terms of available resources and was also influenced by an occurrence which occurred in 1999 involving the UK oil and gas industry.

The Offshore Europe ‘99, a biennial oil & gas exhibition and conference took place in Aberdeen from 7-10 September 1999, where some 1800 exhibitors from the oil and gas industry exhibited their products. About 24000 people including delegates, professionals, oil and gas business people and others who had an interest in the oil



and gas industry attended the exhibition (Offshore Europe 99 Exhibition Catalogue). That is to say, the exhibition gathered a huge number of people together from and across different sectors, who have stakes in the oil and gas industry. It was recognized that the exhibition would provide a unique opportunity of having a very good representative sample from the UK oil and gas industry, and with minimum resources, a survey could be conducted to gather people's opinions on alliancing and partnering in the industry. After having consultation with the supervisors it was decided to conduct a questionnaire survey among the people who attended the Exhibition. In that way this phase can be considered as an opportunistic study.

### **5.3 The Sample**

Sampling, as stated above, is the process of selecting units (e.g. people, organizations) from a population of interest so that by studying the sample, research results may be fairly generalized to the population from which they are chosen (Trochim, 1999). The major question that motivates sampling in the first place is "To whom do we want to generalize?" Here the purpose of the study was to obtain opinions and views about alliancing and partnering from the UK oil and gas industry. Hence, the population was the people who had a stake in the UK oil and gas industry namely operators, contractors, consultants, business persons, and others. As stated above the Offshore Europe '99 provided an excellent opportunity to capture those kinds of people in one place and, therefore, the first survey was conducted among the people who attended the exhibition. A simple random sampling method was used to select the sample from the exhibition. There were 1536 stands in the exhibition belonging to different types and sizes of companies. They were involved in varying types of business in the oil and gas industry including exploration, production, reservoir management, construction, drilling, topside maintenance, technology development, consulting, safety and environment management and others. Those companies represented different types and sizes of business e.g. operators, contractors, consultants, large companies, small and medium size enterprises etc. Depending on the type of business and size of the stand there



were around 2 to 50 people in a stand. Out of 1536 stands, 150 stands were selected randomly to be offered the questionnaire. The selected stands were personally visited by the researcher to conduct the survey.

Having done the survey from the exhibition and a preliminary investigation of the returned questionnaires, it was recognized that the survey lacked views of one group of people i.e. the people who work at shop floor level as a very negligible number of individuals at supervisory level or below were captured in the survey. It was also recognized that the total number of responses was not sufficient for reaching valid conclusions. Hence it was decided to expand the survey to other groups.

The Robert Gordon Institute of Technology (RGIT) organized/ran some safety training courses during September 1999 to January 2000. The duration of each course was two weeks, and each was attended by approximately fifteen trainees, working in different types and sizes of companies at supervisory level or below in the oil and gas industry. It was recognized that those groups would provide a sampling frame representing the shop floor level people from the industry who were more familiar with the day to day activities and could understand the impact of alliancing and partnering at the frontline business environment. A sampling frame is a list of the population from which a sample is drawn (Trochim, 1999).

Other than those two groups, a survey was also conducted among the CRINE (Cost Reduction Initiative for the New Era) Champions group. CRINE was an industry-working group which attempted to introduce different standards with a purpose of reducing the costs of the oil and gas industry. The CRINE Champions group consisted of those who were recognized by CRINE for their positive contributions in different CRINE initiatives. The CRINE champions group was taken as a sampling frame for different reasons. Firstly, CRINE champions would belong to the target population, and a list of CRINE champions was readily available, Secondly, they would be able to share their valuable knowledge on collaborative relationships.



Finally their inclusion would increase the number of responses. Three hundred names of CRINE champions were collected from the CRINE web site. From the group two hundred individuals were selected at random for the survey.

#### **5.4 Constructing the Questionnaire**

Goode, W. J, (1952) suggested that developing a questionnaire can be thought of as moving from the 'inside' outward. This means the researcher should first lay out tentatively the logical implication of his problem and then draw upon his own experience and the literature for questions which are relevant to those logical implications. They can consult colleagues, and friends, on his problem. For the present study, a logical implication of the problem was drawn from literature review and experience. During construction of the questionnaire, issues like scope and purpose of the survey, question content, wording, format, and placement of the questions were taken into consideration, as all those have important consequences on the entire study (Trochim, 1999). A number of rough questions were developed which were relevant to those logical implications. Supervisors and colleagues were consulted to get their thinking on those questions and their relationship with the problem. Both reliability and validity of responses were sought during the development of the questionnaire. Reliability and validity are very important to extract desired information from a population as "Reliability refers to the likelihood that a given measurement procedure will yield the same description of a given phenomenon if that measurement is repeated". "Validity refers to the extent to which a specific measurement provides data that relate to commonly accepted meaning of a particular concept" (Babbie, 1995, p.129). Attention was given in designing individual questions, and lay out of the questionnaire form, as the design of questionnaire affects the response rate and the reliability and validity of collected data (Saunders *et al*, 1997). Clear explanation of the purpose of the questionnaire and assurance of the confidentiality of the supplied information was given at the



beginning of the questionnaire. The questionnaire was designed to be only two sides so that it did not appear difficult to complete.

The questionnaire for the first phase study was constructed with structured, open and Likert type questions. Structured questions were used to collect factual data e.g. company size, company type, involvement with alliances and partnering. A forced choice format, that is a response format in which respondents must choose between discrete and mutually exclusive options, was used to find out factual data e.g. whether the respondents were involved with alliances or not. Finally Likert type question was used to obtain respondents' opinions on the usefulness of alliancing and partnering

The key questions were designed so that people could write their responses in their own words, because we did not want restrict responses to choices from a predefined list. However to aid understanding of the key questions, one example was given of the type of response which might be given. In the key questions respondents were requested to put forward their opinions, ideas or comments about the distinguishing characteristics, criteria of success and criteria of failure, and critical success factors and critical failure factors of alliances and partnering in the UK oil and gas industry. They were requested to provide up to six ideas in order of priority for each feature. In total, seven questions were asked to obtain ideas on those features. Likert questions ask respondents to categorise a statement by indicating whether they strongly agree, disagree with the statement or are neutral (Jackson, 1995). An example of the questionnaire is provided in Appendix 1.

### **5.5 Distribution of Questionnaires and Collection of Data**

In social science research, data can be collected in a number of ways e.g. individually delivered questionnaires, group administered questionnaires, mailed questionnaires, personnel interviews, telephone interviews, panel studies, case studied etc. Every type of data collection method has its own merits and demerits



which have been discussed earlier. Considering the advantages and disadvantages of different data collection methods and their viability and suitability in the context of the first phase study, personally distributed questionnaires, mailed questionnaires and group administration methods were used to collect data for the study from three different groups of samples.

#### ***5.5.1 Collection of data by personally distributed questionnaires***

The first survey was conducted at the Offshore Europe 99: oil and gas exhibition and conference held at the exhibition and conference center, Aberdeen, UK from 7-10 September 1999. Out of 1536 exhibitors' stands, 150 stands were selected randomly for the survey. Each stand was called on personally, and the questionnaires were delivered individually to the people present in the stands. A brief introduction was offered, the purposes and benefits of the survey were explained and any questions were answered before distribution of the questionnaires. Questionnaires were distributed only to those who showed interest. Although some people were not interested, many people were very enthusiastic about the survey and some people took more than one questionnaire to hand over to their colleagues at work. Other than the designated person in a stand, some visitors on the stand showed interest about the survey and took questionnaires along with them. In total 400 questionnaires were distributed by hand to 375 delegates, visitors, businesspersons and exhibitors at the exhibition center within the four days.

Initiatives were taken to achieve maximum return rate of the distributed questionnaires. Arrangements were made for the collection of the completed questionnaires. The completed questionnaires were collected in different ways. Firstly, collection of the completed questionnaires from the stands. To facilitate the collection from the stands, stand numbers, persons' name and agreed time of collection were recorded. The stands were visited at an agreed time to collect the completed questionnaires. However, in many cases luck was not very favorable, in other words, it was not possible to get the completed questionnaires back. Where it



was not possible to collect the completed questionnaire from the stands, people were requested to return the completed questionnaires to the Robert Gordon University stand at the Exhibition Center at a convenient time. It should be noted that the Robert Gordon University had a stand at the exhibition, and the people who were on duty at the stand were informed about the survey and a box was kept to store the returned completed questionnaires. Finally, where those two methods were not applicable, people were requested to return the questionnaires within four weeks time by post using self-addressed, stamped envelopes, which were supplied during distribution of the questionnaires. All together 55 completed questionnaire were received from the 400 randomly distributed questionnaires at the Offshore Europe 99 exhibition and conference.

#### ***5.5.2 Collection of data by mailed questionnaire***

The mailed questionnaire method was used to collect data from the CRINE champions group. A list of CRINE champions and their mailing address was collected from the CRINE web site. Questionnaires were sent to the randomly selected 200 CRINE champions by post. A standard cover letter explaining the purpose of survey along with a self-addressed stamped envelope was sent along with each questionnaire. The prospective respondents were requested to return the completed questionnaire within four weeks indicating the importance of their responses. From the 200 CRINE champions, 32 completed questionnaires were received. Some of the respondents from this group made valuable comments about the study while completing the questionnaire. Telephone calls were made where possible, with a view to increase the response rate. While making contact with the prospective respondents who did not respond in time, it was learned that some of them had changed their working address and were not in a position to return the questionnaire.

#### ***5.5.3 Group-administered questionnaire***

Group-administered questionnaires method was used to collect data from people at



supervisory level or below. Those people attended offshore safety training courses organized by the Robert Gordon Institute of Technology. In total fifty-five questionnaires were distributed among four groups of trainees by hand. Before distributing questionnaires, introductions were given to the participants explaining the purpose of the survey and their queries about the survey were answered. The completed questionnaires were collected from the training room on the same day. However, some people did not want to complete the questionnaire, and some people could not complete the questionnaire in classroom environment. Addressed pre-paid envelopes were provided to those who could not complete the questionnaires in the classroom environment and wanted to take them home. In total 17 completed questionnaires were received out of 55 distributed questionnaires from those groups. However among the 17 completed questionnaires, three questionnaires were not suitable for the purpose, because there was not enough information which could be used for the study, and were discarded.

## **5.6 Data Management and Data Analysis**

Having collected data from the different groups of people, the next step was to manage and analyse the data. Analysis is necessary because, generally speaking, data in their raw form do not speak for themselves. The process and products of analysis provide the bases for interpretation (Gilbert, 2001). To achieve a high standard of accuracy in the data management the following steps were followed: coding data appropriately, entering data into database, conducting a range of visual checks, making necessary correction and checking for duplicated or incorrect records in key fields before carrying out an analysis of the data. This section covers some of those important aspects of data management.

### **5.6.1 Data entry**

All studies, no matter what type of study design is used, require a high standard of accuracy in storing research data, because a great deal of internal validity depends on the accuracy of data processing (Anderson *et al*, 1996).



To begin with, each questionnaire was given a unique identification number. The data in the completed questionnaire was checked thoroughly before entering into the database and errors that required correction were dealt with as soon as possible. A data input form was developed using the data management program, Microsoft Access, which could incorporate all responses from a questionnaire including the identity number. Depending on the type of question different kinds of table and queries were made to build the data entry form. The entry form was connected to different tables where the entered data was stored. During data entry, care was taken to avoid random or systematic errors. Random error refers to inconsistencies which enter the coding process but which display no systematic pattern. For example, in processing data one might enter an item of information twice or enter values which are not within the range of possible values. Systematic errors are especially problematic. These errors are in danger of biasing a study because, since they are systematic, they distort the data in one particular direction. Examples of possible systematic errors are, assigning responses to the wrong category, or assigning respondents to the wrong group (Jackson, 1996).

Three types of questions i.e. structured, open-ended and Likert type questions were used in the questionnaire. Structured type questions were pre-coded single choice questions to which answers were straightforward, only a tick in the appropriate box.

Inputting responses to open questions was complex as the answers could vary considerably for a specific question. The participants provided their opinion in text form either in words or phrases or in sentences. During the process of data entry each response text was studied carefully and thoroughly to become familiar with them and to grasp the underlying meaning. This was followed by development of concepts. Concepts were the key elements of the data input and analysis process which were used to capture the meaning of respondents' replies and to analyze them in a comprehensive fashion. Concepts and categories were developed by content



analyses which are discussed below. The developed concepts and categories were entered into the computer using the data entry form.

Responses to the Likert type questions were not used for this thesis, because it was considered unnecessary afterwards.

### ***5.6.2 Analysis of qualitative data***

Majority of the data collected in the first phase study was qualitative in nature. Qualitative data was collected for the study by using exploratory, open questions with the aim of understanding peoples' perceptions on different issues concerning alliance and partnering i.e. distinguishing features, criteria of success, criteria of failure critical success factors and critical failure factors in the UK oil and gas industry. The respondents expressed their opinion on those issues by writing words, short texts, or short sentences, that is, the data was qualitative in nature. Analysis of this type of data involves bringing order, structure and meaning to a mass of information so that conclusions can be made and communicated (Marshall and Rossman, 1995). The qualitative data i.e. the text responses was analysed using content analysis methodology in order to understand the insights of the text messages.

Content analysis is a technique for making inferences by systematically and objectively identifying specified characteristics of messages. The content-analysis procedure involves the interaction of two processes: specification of content characteristics to be measured, and application of the rules for identifying and recording the characteristics when they appear in the text to be analysed (Silverman, 2000). Generally, in performing content analysis of newspaper articles, letters, or other long texts, various 'recording units' are specified before the analysis process begins. The recording unit is the smallest body of content, appearances of which are counted during the analysis. The recording units may be words, terms, themes, characters, paragraphs, or items (Nachmias and Nachmias, 1982). However, for the



present study the responses were short texts or words and it was not necessary to specify any recording units before analysis of data. Rather, attempt was made to spot the 'recording units' expressing the factors about which the questions were asked during the process of analyses of text data.

During the process of data entry each response text was studied carefully and thoroughly to become familiar with it and to grasp the underlying meaning. Each word and sentence was examined in an attempt to encapsulate the participants' meaning. The texts were analysed explicitly to ensure that the complete messages of the texts were obtained. Significant statements, phrases and words directly relating to the phenomenon under study were identified, and were captured under suitable concepts. Each concept was given a unique code number to facilitate data entry and data analyses. In developing concepts consideration was given to the following as indicated by Robson, (1997).

*Subject matter.* What was the communication about?

*Direction.* How the subject matter was treated for example, favourable or not?

*Values.* What values, goals or desires are revealed?

*Meaning.* What did it really mean within the context?

Having created the concepts, the next step was to find links between them and group related concepts into categories. Each category was given a unique name, which captured the essence of the concepts it contains. For example concepts like 'shared benefit', 'shared risk and reward', 'fair allocation of profit', 'shared profit', 'shared loss', 'willingness to listen', 'fair play', represent the idea of distribution of gain and pain among the alliance partners. Thus they were grouped under the category 'shared risk and reward'.

Care was taken to make sure that developed concepts and subsequent categories were exhaustive and mutually exclusive. As the data feeding process progressed



more and more responses could be represented by previously developed concepts and categories and fewer new concepts needed to be developed. Concepts and responses were managed using the Microsoft Access database management program, and Microsoft EXCEL, spreadsheets program was used for the analysis of the data.

#### *5.6.2.1 Analyses of concepts*

Concepts were analyzed by frequency of their occurrence and expressed in percentage. For example, 294 ideas were mentioned on criteria of success by the respondents which were captured by 75 concepts. 'Achievement of goals in terms of cost saving' is one of the concepts, which was considered as the most important criteria of measuring success of alliancing and partnering in the UK oil and gas industry. 44 ideas were put forward by the respondents in relation to that concept. That is to say, 15% of the total responses (ideas) on criteria of success were linked with the concept 'Achievement of goals in terms of cost saving'

For the purposes of analysis the respondents were divided into groups by their company types, company sizes, their job levels and their alliance experience. The concepts were analysed by total responses as well as by respondents' company types, company sizes, working levels and their involvement with alliancing and partnering. It may be noted that although the respondents were divided into three groups i.e. senior manager (SM), middle manager (MM) and people at supervisory level or below (SB), in some cases the number of responses from the SB was very low, and they are discarded from the analysis and discussion.

Again the concepts were clustered into themes depending on the underlying meaning. Those themes were analysed on the basis of frequency of their occurrences in all the responses regarding distinguishing characteristics, criteria of success, criteria of failure, critical success factors, and critical failure factors of alliancing and partnering.



Regardless of the method of data analysis used, in qualitative work there is risk of research bias (Appleton, 1995). Marshall and Rossman (1995) suggest a study's validity is enhanced when the researcher actively searches for evidence that contradicts, as well as confirms, the explanations being developed. To enhance the reliability, the data including developed concepts and categories were checked by the supervisors and differences were discussed. The concept table was frequently checked to identify any duplication or similar concept with different wording. During the process of data entry, concepts and categories were edited twice. The purpose was to replace ambiguous or less appropriate concepts with more general and meaningful concepts. After completion of data entry all completed questionnaires were checked using 'data entry check form' to make sure that all entries were correct and complete.

### ***5.6.3 Quantitative Analysis***

Seven exploratory questions were asked to gather peoples' opinion on alliancing and partnering in UK oil and gas industry. In response to seven questions, the 99 respondents put forward in total 1401 ideas. After careful analysis, those ideas were captured by 327 concepts. It should be noted that although respondents were asked to put their responses in order of priority, for final analysis the order was not taken into consideration. The concepts were only analyzed depending on the frequency of their use. Initially 'the order of priority' was taken into consideration during analysis. But a few analyses showed that consideration of priority did not have any impact on result. The analysis looked at the frequency of occurrence of each idea. For each question, concepts were analyzed by total responses, respondents' company type, company size, their job category, and their involvement with alliancing and partnering. No statistical tests were performed for the qualitative data. Results from the analysis of the data from phase one is presented in chapter 6.



## CHAPTER 6

### RESULTS OF THE FIRST PHASE STUDY

#### 6.1 Introduction

In the first phase study data/information was collected on distinguishing characteristics, criteria of success and failure, critical success and failure factors, and the usefulness of alliances and partnering in the UK oil and gas industry. In the previous chapter, methods used in collecting and analysing the data/information for the first phase study were discussed. This chapter presents the results of the first phase study, interprets the findings and provides explanations and comments where necessary. The chapter is divided into eight sections. The second section presents the statistics of respondents' demography e.g. their company types, job level, experience etc. The third section presents the findings of distinguishing characteristics of oil and gas industry alliances. Then it examines respondents' opinions on how success and failure are judged in the industry i.e. the criteria of measuring successes or failures. Section six and seven appraise the responses on critical success and failure factors of alliances and partnering in the industry. The chapter ends with an examination of common concepts or themes which takes an overall view of the responses.

#### 6.2 Respondents' Demography

##### 6.2.1 *Response rate*

In total 660 questionnaires were distributed to different groups of people who have an interest in the UK oil and gas industry. In total 400 questionnaires were distributed in the Offshore Europe exhibition, although it should be noted that some people took 2-3 extra questionnaires to distribute to their colleagues. It is likely that a portion of those extra questionnaires did not reach the potential respondents and it may be estimated that 300 questionnaires did reach the potential respondents. 200 questionnaires were distributed among the CRINE champions group and 60 questionnaires were distributed among the people at supervisory level or below.

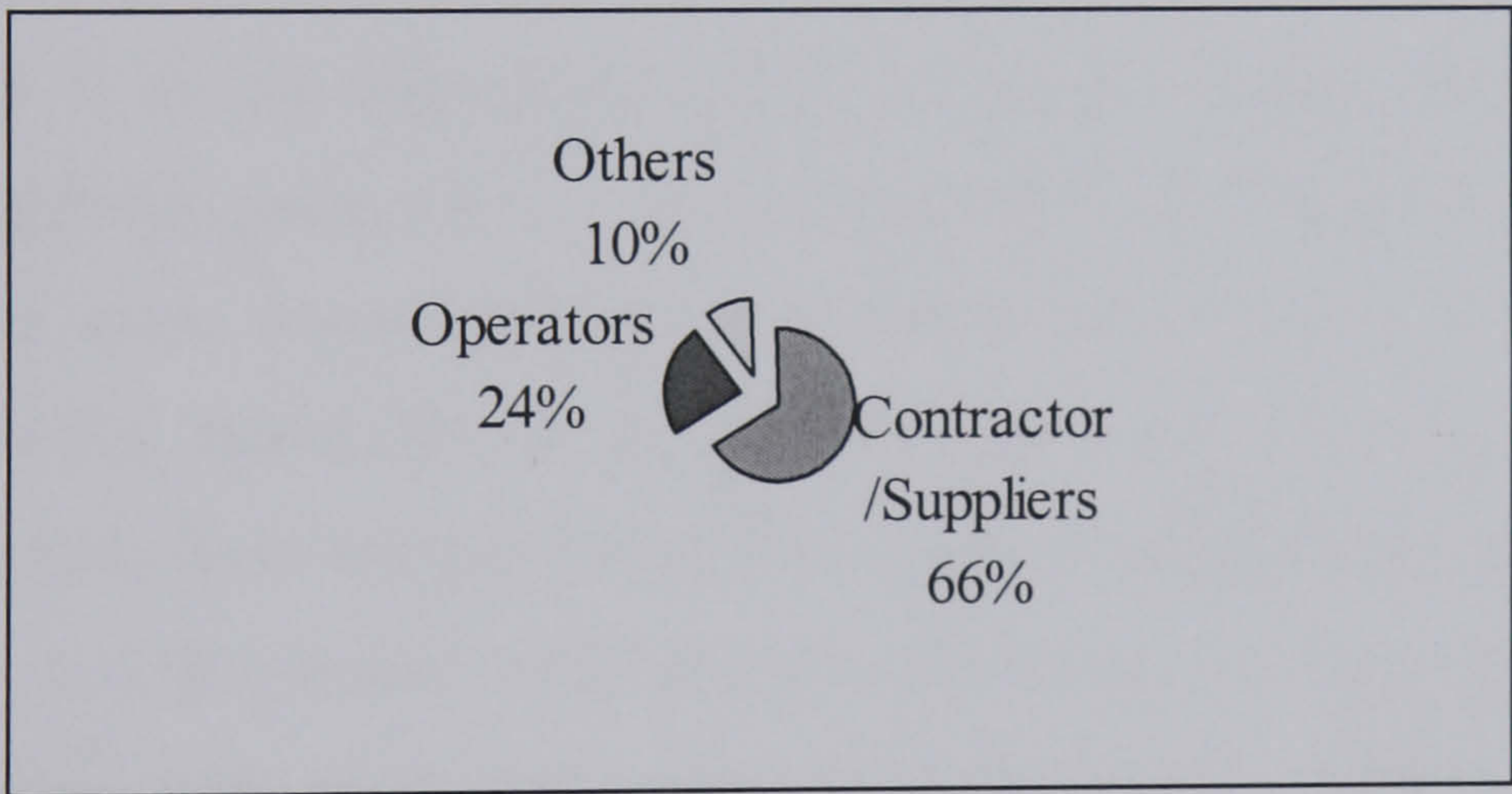


Thus, a total of 560 questionnaires are assumed to have reached the potential respondents of which 104 completed questionnaires were returned which makes 19% return rate for the survey. However, of the 104 questionnaires, 5 questionnaires were not completed properly, and there was no information which could be used for analysis. Those five questionnaires were discarded and 99 questionnaires were used for analysis. It is worth mentioning that three respondents from the supervisors group (from the discarded five questionnaires) mentioned that they did not know what to say about partnering and alliancing because they were not at all aware of those kinds of relationships in the industry.

**6.2.2 Respondents' company types**

As can be seen from the Figure 6.1 among the 99 respondents 66 % were contractors/suppliers, 24 % were operators and 10 % were others which included

**Figure 6.1** Respondents' company types



consultants, trade associations, academics etc. It is believed that these proportions are fairly representative of the industry as a whole.

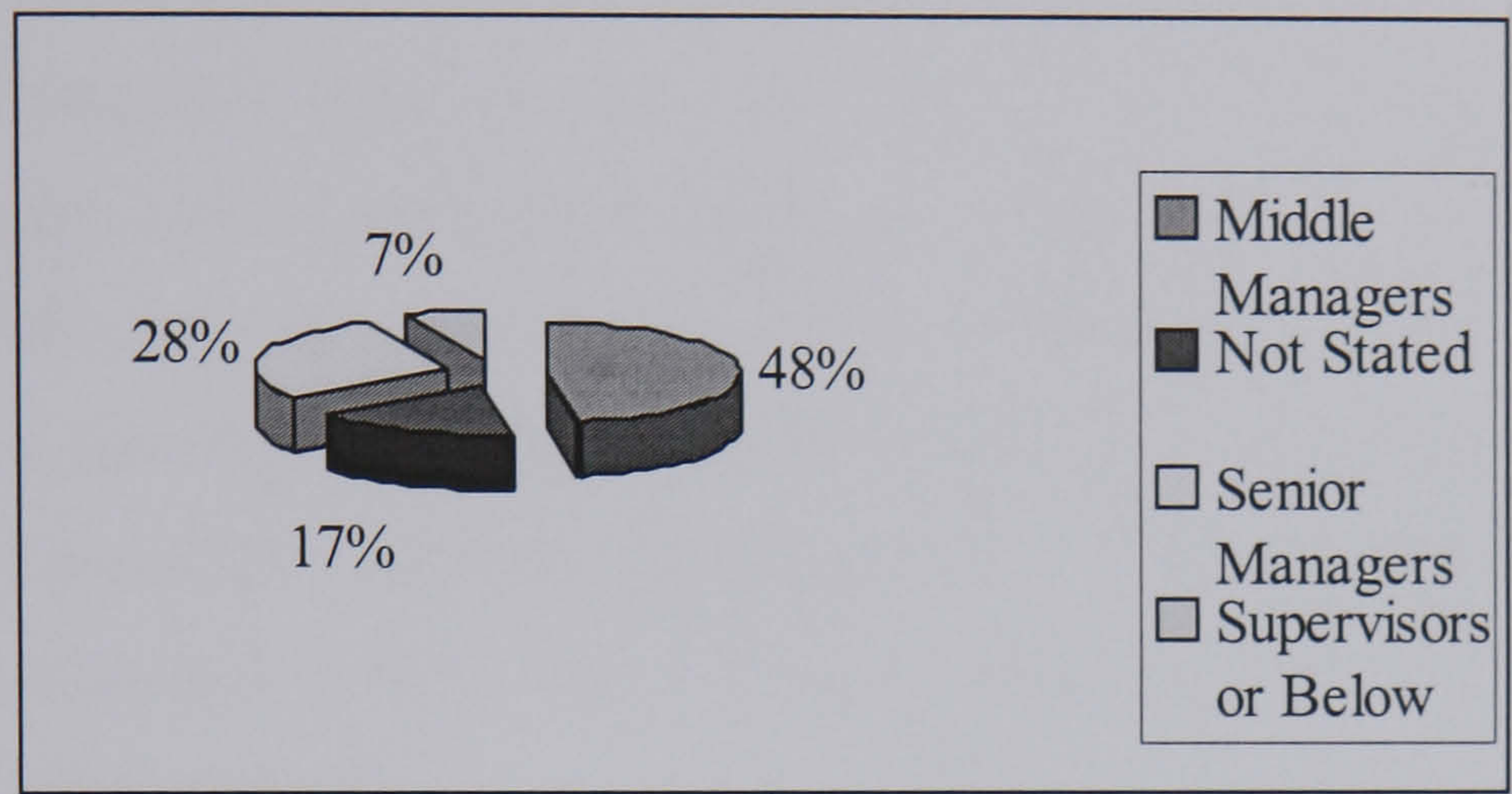
**6.2.3 Respondents' job categories**

In terms of jobs or working positions, the respondents were categorised into three groups, Senior Management (SM), Middle Management (MM), and Supervisors and Below (SB). Vice Presidents, General Managers, Directors and Regional Directors were classified as Senior Management. Respondents like Project Managers,



Maintenance Managers, Product Managers, Commercial Managers, Business Managers, Engineering Managers, Consultants, Technical Managers,

Figure 6.2 Respondents' Job categories



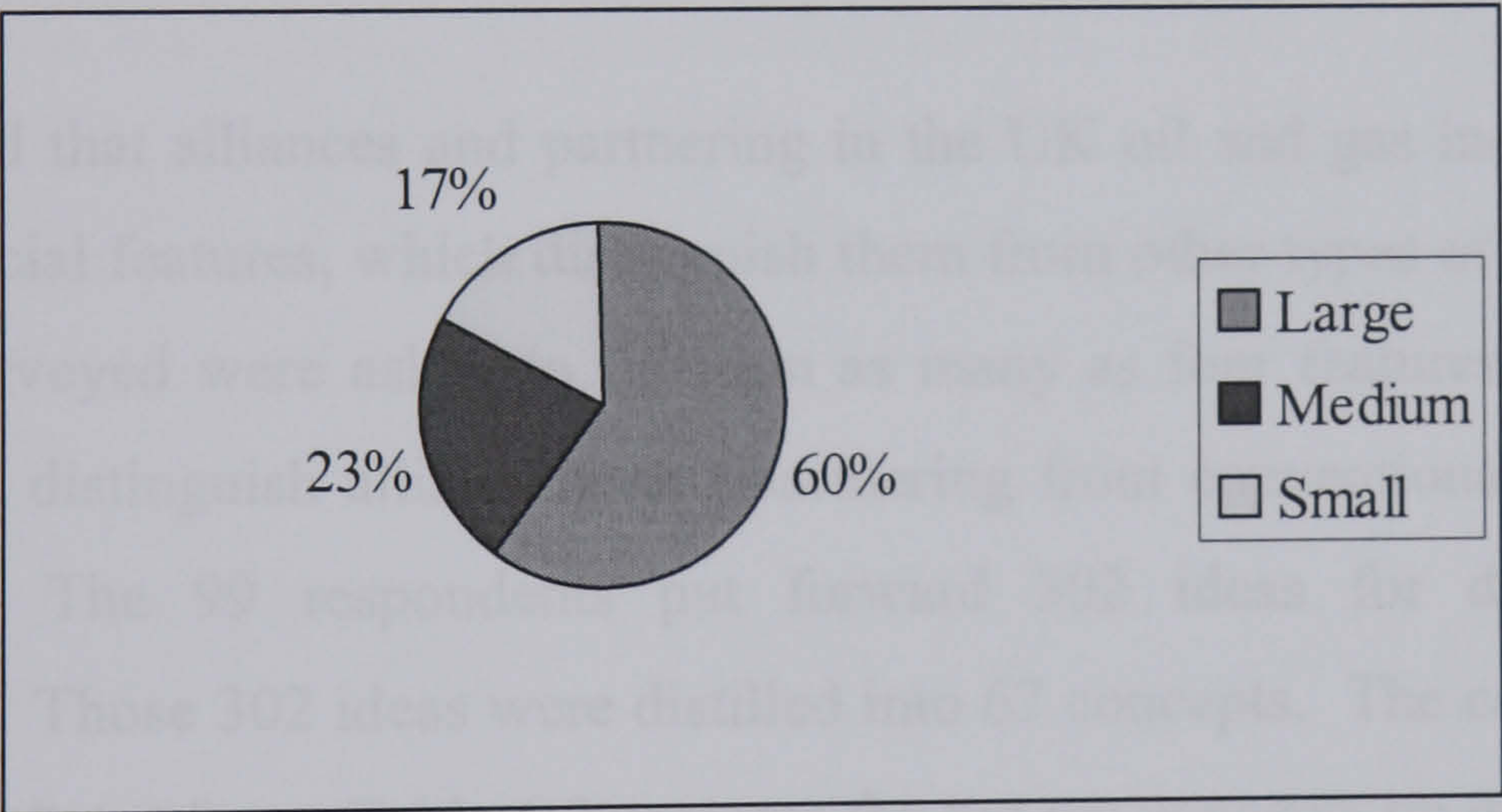
Sales Managers were classified as Middle Management. Finally, Scaffolders, Production Operators, Electrical Operators, Field Development Engineers, Life Support Supervisors were grouped into Supervisor level and below. Figure 6.2 shows that 28 % of the respondents belong to Senior Management, 48 % to the Middle Management group and 7 % to the Supervisors and below level. It may be mentioned that some respondents did not wish to reveal their job title and were grouped into a Not Stated (NS) group and they represent 17 % of respondents. As could be expected, there are generally more middle managers than senior managers in a company, and this is also reflected here. However, one might also expect that there should have been more respondents from the people of supervisory level or below, but the number of respondents of those is quite low. People of supervisory level and below might not necessarily be expected to attend the exhibition and conference or to be CRINE champions and thus we would not expect them to be highly represented in our sample. This may be considered as a downside of the study.



6.2.4 Respondents' company size

Analysis of the respondents' company size shows that 60 % of the respondents belong to large companies, 23% to medium size companies and 17% to small size companies (see Figure 6.3). The European Standard of classification (Deakins, 1999) was followed to classify the company size depending on their employee numbers. Companies with employee numbers of 1-49 were designated as 'small' size, companies which had 50-249 employees, 'medium' size and companies which employed 250 and above were designated as 'large' organisations. It may be interesting to note that in the Offshore Oil and Gas industry, larger companies are more involved in alliancing and partnering than the smaller companies, as recorded by Green and Keogh (1998), and this survey captured responses from a greater numbers of large companies.

Figure 6.3 Respondents' company size



6.2.5 Respondents' alliance involvement

It was thought that respondents' opinion might vary according to their involvement with alliance and partnering. Hence, a question was asked whether they were involved with alliances and partnering or not. Results of the analysis of respondents' experience with alliancing and partnering are shown in table 6.1. It indicates that 62 respondents were directly involved with alliances and partnering and 37 were not. Again, further analysis of the 62 respondents who were involved



with alliances shows that 45 of them were involved only with successful alliances, 8 respondents were involved with both successful and failed alliances, and 4 respondents with failed alliances only.

**Table 6.1**                      **Involvement of alliances and partnering by the respondents**

Types of alliances	Number of respondents
Only with success types alliances	45
Both success and failure types alliances	8
Only failure types of alliances	4
Neither success nor failure	5
Not involved	37

**6.3 Distinguishing Characteristics of Alliancing and Partnering in the UK Oil and Gas Industry**

It was expected that alliances and partnering in the UK oil and gas industry would have some special features, which distinguish them from other types of relationship. The people surveyed were asked to mention as many as four features, in order of priority, which distinguish alliancing and partnering from conventional contractual relationships. The 99 respondents put forward 302 ideas for distinguishing characteristics. Those 302 ideas were distilled into 67 concepts. The concepts were sorted by frequency of use. Table 6.2 presents the top ten concepts on distinguishing characteristics. It can be seen that ‘shared benefit’, ‘co-operation’, ‘shared goals’, ‘trusting attitude’, ‘clear and consistent targets’, ‘increased volume of work’, ‘team spirit’, ‘close working relationship’, ‘cost saving targets’ and ‘willingness to change’ are perceived as the important distinguishing characteristics of alliancing and partnering in the UK oil and gas industry. Those top ten distinguishing characteristics represent 56% of the total responses, which indicates the importance of the top ten distinguishing characteristics. Review of relevant literature shows that many of the highest scoring distinguishing characteristics e.g.



### Distinguishing characteristics of alliances and partnering

**Table: 6.2**

SL No	Distinguishing characteristics mentioned by all respondents (number of responses =297)	Percent of responses
1	Presence of shared benefit or risk and reward is a distinguishing characteristic	9%
2	Presence of co-operation is a distinguishing characteristic	8%
3	Presence of shared and aligned goals, objectives or targets is a distinguishing characteristic	8%
4	Presence of trusting attitude/behaviour is a distinguishing characteristic	6%
5	Presence of clear and/or consistent goals, objectives or targets is a distinguishing characteristic	5%
6	More work or volume of business is a distinguishing characteristic	4%
7	Presence of team spirit is a distinguishing characteristic	4%
8	Presence of close working relationship is a distinguishing characteristic	4%
9	Presence of goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a distinguishing characteristic	4%
10	Willingness to change is a distinguishing characteristic	4%

‘shared benefit’, ‘aligned goal’, ‘trusting attitudes’, ‘team spirit’ and ‘close relationship’ have also been suggested by many social scientists (Bleeke and Ernst, 1993; Ellram, 1995; Littler *et al*, 1995; Doz and Hamel 1998; Green and Keogh, 2000). However some of the ideas on distinguishing characteristics which would be expected from the literature e.g. ‘long term relationships’, ‘selection of partners more on the values rather than cost’, ‘emphasis on end results rather than short term benefits’, and ‘early involvement of partners’ were not among the highest rated characteristics in this survey.

## 6.4 Criteria of Success in Alliancing and Partnering

Measurement of success or failure of alliances and partnering is often a difficult task. One of the major difficulties of measuring success or failure is the setting up of criteria. The criteria may vary in relation to the type of company, size of company, their short term and long term goals, and the business environment they operate in. One of the purposes of the study was to identify the criteria which are perceived by people in the industry to indicate success of alliances and partnering. Respondents were requested to list up to five criteria, in order of priority, which would indicate success of an alliance. Depending on their experience and expectations the 99 respondents mentioned 294 ideas on criteria of success, which were captured by 75 concepts. The concepts were analysed by frequency of use.



The top ten concepts on criteria of success suggested by all respondents are presented in table 6.3. These ten concepts represent 58% of the total responses.

Achievement of goals expressed in terms of cost or cost reduction is the most important concept for criteria of success. This concept captures ideas like, ‘within schedule’, ‘major cost reduction’, ‘cost target beaten’, ‘positive financial outcome’, ‘cost breakthrough, ‘within budget’, ‘opex and capex efficiency’ etc and it represents 15% of the total responses. The second most popular criterion of success is ‘achievement of goals, objectives or targets in terms of time’. This concept seizes ideas like ‘within schedule’, ‘timely completion’, ‘on or before schedule’, ‘schedule reduction’, ‘ahead of time’, ‘decrease cycle time’, ‘on time delivery’, ‘time breakthrough’, ‘time reduction’ etc. ‘More of work or volume of business’ and ‘satisfaction with risk reward or profitability shared’ are jointly ranked third and each of them represents 6% of the responses. Another factor related to risk and reward i.e. ‘presence of shared benefit or risk reward’ is considered important by the respondents to measure success of alliances and partnering in the industry. ‘Presence of satisfactory safety performance’, ‘presence of shared aligned goals’, ‘achievement of shared aligned goals’, ‘presence of continuity of work’ are other criteria of success.

Criteria of success of alliances and partnering

Table: 6.3

SL No	Criteria of success mentioned by all respondents (number of responses = 294)	Percent of responses
1	Achievement of goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a success criterion	15%
2	Achievement of goals, objectives or targets expressed in terms of time is a success criterion	9%
3	More work or volume of business is a success criterion	6%
4	Satisfaction with risk, reward or profitability shared is a success criterion	6%
5	Presence of satisfactory safety performance is a success criterion	5%
6	Presence of shared and aligned goals, objectives or targets is a success criterion	4%
7	Presence of shared benefit or risk and reward is a success criterion	4%
8	Achievement of shared and aligned goals, objectives or targets is a success criterion	4%
9	Achievement of goals, objectives or targets expressed in terms of production is a success criterion	3%
10	Presence of continuity of work is a success criterion	2%



Thus the analysis shows that in general, performance level i.e. achievement of goals expressed in terms cost saving, time, and safety level, sharing risk reward among alliance partners, and acquiring more business are broadly used as criteria to measure success of alliancing and partnering in the UK oil and gas industry. This finding is to some extent in line with a study on collaborative product development, which suggests that 'project meets time scale', 'project meets cost target' are important criteria for assessing success of collaborative relationships (Bruce *et al*, 1995). The study suggests that, the activities which help to increase business profits are considered important in measuring success of alliancing and partnering in oil and gas industry.

**6.5 Criteria of Failure of Alliances and Partnering**

Along with identifying criteria of success, the study also intended to identify the criteria of failure of alliancing and partnering in the UK oil and gas industry. The respondents were asked to list as many as five criteria of failure of alliances and partnering. The 99 respondents put forward 249 ideas on criteria of failure. Some examples of those ideas are relationship failure, cost overrun, time overrun, conflict of interest, inability to change, breakdown of relationship, poor safety record, lack of communication, etc. After careful analysis, those ideas were captured by 54 concepts and they were analysed by frequency of occurrence.

Table 6.4 shows the top ten concepts for criteria of failure when all the respondents are considered. Note that the top ten concepts represent 58% of the responses. In general ‘non-achievement of goals or targets in terms of cost saving and ‘non achievement of goals, objectives or targets’ are the two most important criteria of failure, as each of them represents 11% of total responses. ‘Presence of adversarial behaviour, non co-operation and conflict’ is the next important criterion of failure. Non-achievement of goals expressed in terms of time’ is ranked third.



**Criteria of failure of alliances and partnering**

**Table: 6.4**

SL No	Criteria of failure mentioned by all respondents (number of responses = 249)	Percent of responses
1	Non-achievement of goals expressed in terms of cost or cost saving (capex and/or opex) is a failure criterion	11%
2	Non-achievement of goals, objectives or targets is a failure criterion	11%
3	Presence of adversarial behaviour, non co-operation and/or conflict (including litigation) is a failure criterion	9%
4	Non-achievement of goals expressed in terms of time is a failure criterion	6%
5	Absence of satisfactory safety performance is a failure criterion	5%
6	Absence of close working relationship is a failure criterion	4%
7	Absence of continuity of work is a failure criterion	3%
8	Absence of open and unhindered communication is a failure criterion	3%
9	Absence of trusting attitude/behaviour is a failure criterion	3%
10	Absence of work which meets or exceeds specification is a failure criterion	3%

This is followed by ‘absence of satisfactory safety performance’ which represents 5% of the responses. ‘Absence of continuity of work’, ‘absence of unhindered communication’, ‘absence of trusting attitude’, ‘absence of work which meets specification’ are other important criteria of failure. Therefore people in general in the UK oil and gas industry judge failure of alliances by the failure to achieve goals and targets expressed in terms of cost saving, time and safety performance. Interestingly two criteria e.g. ‘absence of open and unhindered communication’ and ‘absence of trusting attitude’ are considered as failure criteria, but the corresponding criteria of success have not been included in the top ten by respondents.

**6.6 Critical Success Factors (CSF) of Alliances and Partnering**

Along with criteria of success and criteria of failure; critical success and failure factors are also important for a better understanding on the issues associated with the success or failure of alliances in the oil and gas industry. Critical success factors are the factors whose presence in an alliance encourages or creates a favourable environment which brings success of that alliance. On the other hand criteria of success are the factors whose presence may suggest success of an alliance i.e. they are indicators of success. The link between success factors and success criteria may



be considered as cause and effect where success factors are the causes of success and success criteria are the effects.

In order to gather data on peoples' perceptions of the critical success factors (CSF) of alliancing and partnering in the UK oil and gas industry, respondents were asked to list as many as six critical success factors according to their priority. The 99 respondents put forward 308 ideas on CSF. However, many ideas had a similar sense but different wording. After thoughtful analysis the 308 ideas were captured by 69 concepts. The concepts were analysed to give the frequency of their citation.

Table 6.5 shows the top ten frequently mentioned concepts mentioned by all respondents for critical success factors. Those ten concepts account for 55% of the total responses. Analysis of the data indicates that, in general, 'trusting attitude/behaviour' is perceived to be the most important critical success factor for alliancing and partnering in the UK oil and gas industry. The second most popular critical success factor is 'shared and aligned goals' which is followed by 'presence of open behaviour' and 'presence of shared knowledge and/or information'. 'Clear role', 'commitment of members to the relationship', 'co-operative behaviour' and 'honesty', all have similar rankings. The last two of the top ten critical success factors are 'integrated team' and 'early involvement of people'.

The results reflect the opinions of many authors who have suggested theories on success of collaborative relationships. For example, trust is viewed as central to every collaborative relationship and it is said that no alliance can survive without trust. (Spekman, 1988, Ford, 1990; Sherman, 1992; Wolff, 1994; Parkhi, 1998, Vangen, and Huxham, 1998). Ellram (1995) and Lewis (1992) emphasise the importance of a clear and agreed set of goals which allow the partners to be clear about why the collaboration exists, why they are part of it and what their role is within it.



Regarding commitment, Green and Keogh (2000) suggest that senior management of all the companies involved in a collaborative relationship must be committed to the relationship and be prepared to do whatever is necessary to ensure its success. Many authors (Ellram and Eddis, 1996; Huxham and Vangen, 1996; Haque *et al*, 2000; Green and Keogh, 2000) stress the role of shared goals, frequent open communication and integrated team in effective relationships. Some success factors mentioned in the literature e.g. 'no-blame culture', 'training, use of external facilitator', 'change of attitude' 'sufficient resources', 'past experience of collaboration management' do not appear in the top ten factors from this survey.

**Table: 6.5** **Critical success factors of alliances and partnering**

SL No	Critical success factors mentioned by all respondents (number of responses =308)	Percent of responses
1	Presence of trusting attitude/behaviour is a success factor	15%
2	Presence of shared and aligned goals, objectives or targets is a success factor	7%
3	Presence of open behaviour is a success factor	6%
4	Presence of shared knowledge and/or information is a success factor	5%
5	Presence of clear roles within relationship is a success factor	4%
6	Presence of commitment of members to relationship and its success is a success factor	4%
7	Presence of co-operative (and supportive) behaviour is a success factor	4%
8	Presence of honesty and sincerity is a success factor	4%
9	Presence of integrated team, without inter-company boundaries is a success factor	3%
10	Presence of involvement (including early involvement ) of people who can influence the outcome is a success factor	3%

### 6.7 Factors Which Can Cause Failure of Alliancing and Partnering

Another aim of the survey was to gather people’s views on the factors which may cause failure of alliances and partnering in the oil and gas industry. The respondents were requested to list as many as six factors according to their priority, which often cause failure. The 99 respondents provided 250 ideas on failure factors. All the 250 ideas were captured by 58 different concepts. The data (concepts) were analysed to



show the frequency of their use by the respondents. The analysis of the responses is shown in table 6.6. The top ten concepts represent 58% of the responses.

‘Absence of shared and aligned goals objectives or targets’ is the highest rated failure factor and ‘absence of clear and consistent goals, objectives and targets’ is the second highest failure factor. These are followed by ‘absence of trusting attitude’, and ‘absence of open communication’. ‘Presence of un-addressed cultural differences’ and ‘absence of strong proactive leadership’ are ranked fifth and sixth among the top ten failure factors.

**Failure factors of alliances and partnering**

**Table: 6.6**

SL No	factors which cause failure of alliances (number of responses = 250)	Percent responses
1	Absence of shared and aligned goals, objectives or targets is a failure factor	11%
2	Absence of clear and/or consistent goals, objectives or targets is a failure factor	8%
3	Absence of trusting attitude/behaviour is a failure factor	8%
4	Absence of open and unhindered communication is a failure factor	7%
5	Presence of culture differences which are not addressed is a failure factor	6%
6	Absence of leadership (strong and proactive) from senior managers is a failure factor	5%
7	Presence of adversarial behaviour, non co-operation and/or conflict (including litigation) is a failure factor	4%
8	Absence of fair allocation of risks, rewards and profits is a failure factor	4%
9	Absence of open behaviour and willingness to change is a failure factor	3%
10	Absence of commitment of members to relationship and its success is a failure factor	2%

‘Presence of adversarial behaviour, non co-operation, and conflict’, ‘absence of fair allocation of risks and rewards’, ‘unwillingness to accept change’ and ‘absence of commitment’ complete the top ten failure factors. It is interesting to note that although ‘presence of trust’ is ranked high as a success factor, ‘absence of trust’ has been placed in the third position as a failure factor. Again some failure factors such as ‘absence of leadership’, ‘absence of fair allocation of risks rewards and profits’, ‘presence of cultural differences’, ‘absence of willingness to change’ are rated high, whereas the corresponding success factors have not been ranked highly by the respondents.



It must be mentioned that concepts on distinguishing characteristics (DC), criteria of success (CS), criteria of failure (CF), critical success factors (SF), and critical failure factors (FF) were also analysed from the standpoint of respondents' job levels, company sizes, company types and their alliance experiences. The results of the analyses are presented in tabular form in appendix 3, but they will not be discussed here because they are peripheral to the main objective of the thesis. Some of the results of group analysis have been discussed by Haque *et al* (2000, a) and Haque *et al* (2000, b).

## **6.8 Analysis of Common Concepts or Themes**

The earlier sections of this chapter have illustrated the analysis of the concepts which has been made in terms of the five topics, distinguishing characteristics, criteria of success and failure, and critical success and failure factors. It is apparent that many underlying concepts are common to all these topics. If the prefixes (e.g. presence of, more of, absence of etc) and the suffixes (e.g. is a distinguishing characteristic, is a criterion of success, etc) are stripped away certain common concepts become apparent (please see Appendix 2). These common concepts may be considered as themes. This section analyses the common concepts or themes which were developed from the respondents' responses through content analysis.

The 99 respondents provided 1401 responses from which 323 concepts were developed. Again, the cohorts of concepts, which expressed similar ideas, were clustered together into common concepts or themes. Thus depending on the underlying meaning, the 323 concepts were clustered into 23 themes. These themes were analysed on the basis of frequency of their occurrences in all the responses regarding distinguishing characteristics (DC), criteria of success (CS), criteria of failure (CF), critical success factors (SF), and critical failure factors (FF) of alliancing and partnering. Table 6.7 shows the frequency of use of each theme along with percentage. As can be seen 'goal/objective/target' is the most popular theme,



which is followed by 'behaviour/attitude'. In fact, these two themes can be considered as the vital themes because they have captured about 50% of the responses. In other words, about 50% of the opinions gathered in the survey were about 'goal/objective/target' and 'behaviour/attitude'. 'achievement of goals in terms of costs saving', 'achievement of goals in terms of timely completion of project', 'jointly agreed clear single target', 'conflicting goal' are some of the examples of concepts which belong to the first theme. Under 'behaviour/attitude' theme, concepts like 'presence of adversarial behaviour', 'presence of trust', 'lack of trust', 'presence of confidentiality', 'absence of confidentiality', 'presence of motivation', 'absence of motivation', 'co-operation between competitors' etc were captured. Considering the frequency of occurrences of each of the themes it may be argued that there are three other themes which are also important.

**Table 6.7**                      **Different Themes Mentioned By the Responders In General**

Theme	Total	Percentage
Goal/ Objective / Target	350	25%
Behaviour / Attitude	324	23%
Performance / Service level	115	8%
Risk and reward / Benefit	108	8%
Relationship	101	7%
Communication	87	6%
Team	55	4%
Work/Volume of business	51	4%
Control / Governance	34	2%
Leadership	33	2%
Commitment / Ownership / Buy in	30	2%
Openness / Honesty / Integrity / Sincerity	22	2%
Expertise / Skill / Experience	18	1%
Cost / Inefficiency / Waste	16	1%
Custom and practice	14	1%
Resources	10	1%
Fairness	7	0%
Market	7	0%
Autonomy / Empowerment	5	0%
Plan	5	0%
Public Image	4	0%
Standardisation	3	0%
Supply chain	2	0%
Grand Total	1401	100%



Those are 'performance/service level', 'risk and reward', and 'relationship'. Some other themes e.g. 'communication', 'team', 'work/volume of business', 'control/governance', 'leadership', 'ownership/buy in', 'honesty/sincerity/integrity' may be considered as moderately important as they captured a moderate number of responses. The remaining themes may be classified as least important as they have captured few responses. Some example of those themes are 'standardisation', 'public image', 'plan', 'autonomy' etc. It would also be interesting to know the themes which are considered important to each separate issue. Table 6.8 makes a comparison of relative importance of the top eleven themes in DC, CS, CF, SF, and FF. As can be seen, different kinds of themes have received different levels of priority in different issues. In distinguishing characteristics, 'behaviour/attitude' has attracted maximum responses followed by the 'goal/objective/target' theme. The third position is occupied by 'risk and reward' theme. 'Relationship', 'leadership', 'control/governance' and 'ownership' capture the fewest responses.

Responses to the question related to criteria of success indicate that 'goal/objective/target' is the most important theme of this group. The second and third important themes are 'performance/service level' and 'risk reward/benefit'. The themes, 'work/volume of business' and 'behaviour /attitudes' have

**Table 6.8**                      **Importance of different themes in different issues**

Theme	DC	CS	CF	SF	FF
Goal/ Objective / Target	19%	36%	31%	13%	28%
Behaviour / Attitude	32%	8%	19%	34%	21%
Performance / Service level	4%	17%	13%	4%	3%
Risk and reward / Benefit	11%	11%	7%	4%	5%
Relationship	8%	3%	8%	8%	9%
Communication	6%	3%	4%	8%	10%
Team	6%	2%	2%	7%	1%
Work/Volume of business	4%	10%	3%	1%	1%
Control / Governance	1%	2%	3%	4%	3%
Leadership	1%	1%	2%	4%	5%
Ownership / Buy in	1%	1%	1%	4%	4%



also captured a good number of responses from this group. All other themes are of little importance here. In criteria of failures question, the 'goal/objective/target' theme comes first and 'behaviour/attitudes' second. 'Performance/service level' 'risk reward/benefit' come in the middle while rest of the themes attracted few responses.

With regard to critical success factors question, the 'behaviour/attitudes' theme has captured the highest number of responses with 'goal/objective/target' scoring second. The themes 'relationship', 'communication' and 'team' show only a moderate number of responses and others are of lowest importance. In the critical failure factor question, 'goal/objective/target' and 'behaviour/attitude' are the two themes which have captured the majority of the responses. 'Communication' and 'relationship' are other two important themes in this group. 'Leadership', 'risk and reward', 'ownership' are in the moderate priority group and have attracted comparatively a higher percentage of responses than the other four questions.

This chapter has analysed the data/information on distinguishing characteristics, criteria of success and failure, critical success and failure factors, and the effectiveness of alliancing and partnering strategy. The following chapter interprets the results and discusses the findings.



## **CHAPTER 7**

### **DISCUSSIONS OF THE FIRST PHASE STUDY**

#### **7.1 Introduction**

Having presented the results of data analyses of the first phase study on alliances and partnering in the UK oil and gas industry in chapter 6, this chapter discusses the results, compares and contrasts the findings with similar types of research and with the theories that have been proposed on the subject matter by different social scientists. The researcher's own opinions on the issues related to partnering and alliancing are also put forward.

The chapter begins with a discussion on the findings of 'distinguishing characteristics' which is followed by discussions and analysis of the findings of 'criteria of success' and 'criteria of failures'. After discussing the results on 'critical success factors' and 'critical failure factors', findings on common themes are reviewed. Finally, the chapter ends with a conclusion.

#### **7.2 Distinguishing Characteristics**

As requested in the questionnaire, the respondents provided their opinions on the distinguishing characteristics on alliances and partnering in the UK oil and gas industry. Analysis of those opinions shows that the people generally perceive that 'shared benefit', 'co-operation', 'shared goal', 'trusting attitude', 'clear and consistent target', 'increased volume of work', 'team spirit', 'close working relationship', 'cost saving targets' and 'willingness to change' are the main distinguishing characteristics of alliances and partnering.

As has been suggested an essential characteristic of a collaborative relationship is that there should be potential for all involved companies to gain from the relationship. It is very important that involved companies are aware and understand



how achievement of shared objectives generates gain for them. The customer (operator) gains by having his work completed at reduced cost, or in less time, and the contractor gains from increased percent profit. This is achieved through sharing of risk-rewards for improved performance or penalties for reduced performance (Green and Keogh, 2000). Presence of an appropriate risk reward structure provides the motivation for companies to work together to achieve the shared objectives and allows collaborative companies to feel comfortable with the outcome of their joint work.

‘Clear and agreed targets’, and ‘willingness to change’ are two other important characteristics of a collaborative relationship. The target should be made in consultation with the workforce rather than imposed on them. It is important to involve as many people as possible in the consultation process. With regard to willingness to change, in an alliance the involved companies may have different systems, procedures, norms, or culture. To make the alliance effective it may be required to bring organisational change. Again, people who are used to conventional relationships may find it difficult to work in a collaborative environment. The necessity of willingness to change of attitudes and behaviour of people therefore arises so that they can work together with their collaborative partners. This willingness is particularly important for senior and middle managers.

The findings indicate that team working has special importance in the oil and gas industry alliances and partnering relationships. ‘Team spirit’ and ‘close working relationships’ are linked with teamwork. The importance of teamwork in the UK oil and gas industry alliances and partnering has also been mentioned in the literature. It is suggested that in an integrated team, people need to be chosen from collaborative companies on the basis of 'best person for the job', rather than the company to which they belong. Ideally, the team should be located in the same place so that they can communicate face to face which encourages a team spirit to develop and enables problems to be resolved quickly (Green and Keogh, 1998, Doz and Hamel, 1998). In



oil and gas industry alliances, external facilitators often play a vital role in the team building process and in helping the team to develop new ways of working to generate improved performance.

It appears from the findings that many of the high scoring distinguishing characteristics include those which would be expected from the literature. Social scientists have characterised alliances and partnering as ongoing relationships between organisations that involve a commitment over an extended period of time, in which resources, knowledge and capabilities are shared with the objective of enhancing the position of each partner (Ellram, 1995; Spekman, 1998; Drago, 1997; Green and Keogh, 2000). Other authors have pointed out that 'shared benefit', 'aligned goal', 'trusting attitudes', 'team spirit' are also essential characteristics of alliances and partnering (Bleek and Ernst, 1993; Litter *et al*, Ellram, 1995; Doz and Hamel, 1998). However, some of the characteristics of alliances and partnering which have been mentioned in literature e.g. 'long term relationships', 'selection of partners more on the values rather than cost' 'emphasis on end results rather than short term benefits' appeared less important to the respondents (Drago, 1997; Green and Keogh, 2000; Doz and Hamel, 1998).

### **7.3 Criteria of Success of Alliances and partnering**

One of the main reasons of adopting partnering and alliancing strategy in the UK oil and gas industry in 1990s was to reduce costs (Woolfson *et al*, 1997; Green and Keogh,). Findings of the study suggest that costs reduction is still a very important issue in the UK oil and gas industry alliances, where achievement of goals in terms of costs saving is considered as the most important criteria of success of alliances and partnering in the industry. The survey also shows that, in general, performance levels e.g. achievement of goals expressed in terms of timely or early completion of project, safety level, meeting shared objectives, acquiring more business, shared aligned goals and sharing risk reward among alliance partners are broadly considered as important criteria of success. Naturally one would expect that achievement of



goals would be the main criteria to measure success of a business relationship which has also been emphasised by the respondents of the present study. Mention of 'safety performance', as another important criterion of success also seems logical here, because people working in the offshore oil and gas industry work in a harsh environment to extract and process oil and gas and are prone to various types of risks. The industry has had some serious disasters in the past, and therefore, safety must be an important issue here. Presence of shared risk and reward is perceived to be another important criterion to measure success of alliances and partnering. As was stated earlier presence of shared risk and reward was also considered the most important distinguishing characteristics of alliances and partnering in the UK. The importance of sharing risk and reward in the UK oil and gas industry has also been suggested by a number of authors (Green, 1997; Ellram, 1995; Drago, 1997; Lewis, 1992). Normally when the companies are able to reduce estimated cost of a project by working together, the savings are shared between the collaborative partners. The arrangement of sharing risks and rewards may be different depending on the costs, life span and uncertainty of the project. Presence of arrangements for appropriate shared risks and rewards encourage the involved parties to work hard, because they know that success of the relationship would provide their own success.

It is interesting to note that further analysis (Please see Appendix 3) suggests that the contractors/suppliers emphasised volume of work, and/or continuity of work more than operators did. These differences of the opinions may have expressed the concern of the contractors/suppliers on the availability of steady work. In the oil and gas industry, operators are the main players. Contractors/suppliers rely on the operators for their work. There are few operators in comparison to a large number of contractors/suppliers and the contractors/suppliers usually need to compete with each other for obtaining contracts. Therefore, it is not a surprise that the contractors/suppliers would emphasise volume of work and continuity of work as success criteria. The clients (operators) of the UK oil and gas industry alliances need to appreciate this concern of the contractors and make sure that after successful



completion of one project, the contractors/supplier will have the opportunity to have another contract. That would encourage the contractor to work whole heartedly for the alliance projects to make them successful. On the other hand, operators emphasise satisfactory safety performance more than contractors. In the offshore oil and gas industry, the operators are the companies that both license the oil and gas rights to acreage, and also take direct legal responsibility for exploiting them. Thus, it is their responsibility to make sure that offshore activities are performed in a safe environment, for their own business interests as well as the interests of the industry as a whole. It is important that the contractors/suppliers who work in the offshore oil and industry alliances take into account this safety issue. It may be expected that contractors having good safety records will have a better chance of obtaining longer-term contracts from their clients.

Measurement of success or failure of alliances and partnering is a difficult task for different reasons. First of all there is no universal standard set criteria for measuring success or failure that could be applied to all relationships. The perceived criteria for measuring success and failure may be different to different types and sizes of companies. They may also vary for the same companies with the changes of business environment it operates. Again, as Green (2003) suggests, success of a collaborative relationships may have its different levels for example, strong success, success, and weak success. When a collaborative relationship achieves extraordinary performance, exceed targets for cost, schedule or safety performance and all parties are delighted with the outcome and gain from it, this type of success may be considered as 'strong success'. In another situation if the relationship meets all, or most, targets for cost, schedule, safety or quality, all parties to the relationship are satisfied with the outcome and what they get out of the relationship, this may be perceived as 'success' of the relationship. Some success may be considered as weak success, such as when a collaborative relationship does not meet all targets, but through collaboration manages to overcome some severe difficulties and the relationship stays together. All parties accept the outcome as the best possible



outcome in the circumstances. Or, the relationship is terminated but amicably with the agreement to work together again if the opportunity arises. Yet again, it is important to bear in mind that the ultimate aim of forming alliances is to improve business performance through mutual co-operation. Therefore, while assessing success of an alliance one must consider how much the alliance adds value to the short or long term growth and development activities for the companies involved and thus helps them in gaining competitive advantage.

#### **7.4 Criteria of Failure of Alliances and partnering**

The study suggests that in the UK oil and gas industry failures of alliances and partnering are mainly judged by the failures of achievement of goals and targets expressed in terms of cost saving, time and safety performance. Failure to reduce costs is considered as the most important failure criterion by most of the respondents. Other failure criteria according to priority are, presence of adversarial behaviour, absence of satisfactory safety performance, absence of close working relationship, absence of continuity of work, absence of open communication, absence of trusting attitudes, absence of work which meets specification. As may be expected most of the failure criteria mentioned by the respondents are the opposite of the success criteria. That is to say, the same criterion is often used to measure success and failure of an alliance, achievement of which is used to measure success and non-achievement is used to measure failure. However there are some criteria which are perceived important in measuring failure of alliances but not in measuring success of alliances in the industry. These are presence of adversarial behaviour, 'absence of open and unhindered communication and absence of trusting attitude.

The essence of alliances and partnering relationships is to get away from adversarial behaviour and work closely together for a common goal. Thus presence of adversarial behaviour would obviously indicate failure of the relationship. An in-depth analysis ( see Appendix 3) of the findings suggests that the small companies are more concerned about fair allocation of work and possible adversarial behaviour



from the bigger companies. Some studies (Bower and Keogh, 1997; Haque *et al*, 2000) suggest that most of the time small companies are not part of alliances in the UK oil and gas industry, and thereby they do not have opportunity of receiving fair allocation of work from the collaborative activities. It is important that large companies take into account small companies' concerns and help them to obtain a fair share of work from the alliance activities. It will help both the industry and the small and medium sized companies (SMEs) who have been contributing towards the industry by developing new technologies.

The importance of open and unhindered communication in collaborative relationships cannot be stressed too much. Open communication allows alliance partners to have necessary information in time and availability of information allows alliance partners to take appropriate action with a view to making the alliance successful. Therefore, there should be no barrier to free flow of information. Anyone should be able to obtain the information they need for their work, quickly and without obstruction. In the case of difficult situations open communication is also helpful. For example, if things do not appear to be working correctly, it would be beneficial to have an open discussion about the problems and their possible solutions. Guesswork and snap judgement should be avoided. This strategy is the key to generate better ideas and solutions and to reduce misunderstanding and mistrust. As Ellram and Eddis (1996) suggest, open communication avoids misdirection and they report poor communication as the most important cause of alliances and partnering relationship failure.

Further analysis also suggests that Operators are more concerned about the performance, and failures of alliances are judged by lack of satisfactory safety performance. This finding expresses the operators' areas of concern. It seems obvious, that an operator would put higher priority on satisfactory safety performance, because he is the one who has major investment and would lose most



in case of poor performance or an accident because of poor safety levels in a collaborative project.

## **7.5 Critical Success Factors**

Analysis of critical success factors demonstrates that the presence of 'trusting attitudes/ behaviour' is perceived as the most important factor which makes alliances and partnering successful in the UK oil and gas industry. The importance of trust in collaborative relationships has been emphasised by many social scientists. Hutchins (1992) suggests that growing trust increases the comfort each partner has in the relationship. This comfort leads to an increase in the willingness of each partner to develop mutually dependent relationships. Increased trust between alliance partners promises economic pay off for each partner. If alliance partners can develop mutual trust, this should enable them to adapt to unforeseen circumstances, thus reducing transaction costs and eventually reducing the overall cost of a collaborative project. Sako (2000, pp. 88-117) suggests that trust, especially the goodwill kind, encourages rapid innovation and learning. Suppliers in high trust relations are likely to exploit opportunities to the mutual benefit of both the customer and the supplier, which would not otherwise have been exploited had transactions depended solely on contracts or incentives. Trust between partners should make them more willing to share information, reduce the temptation for each partner to take advantage of the other because of the goodwill it represents, and thus render the co-operation more genuine, reduce the need to spend time and effort checking up on the other partners, and help to direct the partners' attention and energies towards longer-term goals of mutual benefits (Child, 1998, pp 45 - 63).

'Shared and aligned goals', 'presence of open behaviour', 'presence of shared knowledge', 'clear role', 'commitment of members to relationship', 'co-operative behaviour' and 'honesty' are other important critical success factors. As can be appreciated clear and agreed sets of goals allow the partners to be clear about why the collaboration exists, why they are part of it and what their roles are within it.



The objectives of the relationship must be clear to everyone involved. From an empirical study Draulans *et al* (2003) suggest that shared knowledge and experience increases success of alliance considerably.

It may be noted that some factors which have been mentioned in the literature as success factors e.g. 'no-blame culture', 'training', 'use of external facilitator', 'change of attitude', 'sufficient resources' 'past experience of collaboration management' and 'choice of partners' (Green, 1997; Huxham and Vengen, 1996; Doz and Hamel, 1998; Draulans *et al.* 2003) are not considered highly important for making alliances successful by the people surveyed. Again, some of the factors which have been suggested by the respondents as important success factors e.g. 'shared knowledge', 'co-operative behaviour' 'early involvement of people' are not common in the literature. However, frequent and open communication between collaborative partners, which has been advocated as an important success factor in the literature, is a means of sharing information and knowledge. Again if we consider 'co-operative behaviour' in a broader sense it may cover different aspects of a relationship e.g. teamwork, presence of trust between collaborative partners, open communication, shared risk and reward etc all of which are mentioned in the literature.

Detailed analysis of the responses from the viewpoint of respondents' working levels (see Appendix 3) suggests that senior managers emphasise 'commitment', 'involvement of people who can influence the outcome', and 'clear goals' which are not highly rated by the middle managers. Senior managers would be expected to be driven by the need to improve performance in business terms. The argument behind the senior managers emphasising these factors may be that the committed people who have capabilities and skills, and work to accomplish a clear goal would be able to contribute greatly in fulfilling their expectations. Commitment is surely an important success factor of alliances and partnering, because without commitment people are not motivated to work collaboratively. People involved from all



collaborative companies must be committed to the relationship and be prepared to do whatever is necessary for its success. Importance of commitment of management has been emphasised by many social scientists. It is argued that if management is not committed there is little chance that an alliance relationship will have success. Without management support the alliance team will not only have insufficient resources but also will have low morale, as management support inspires the workforce to work hard to achieve the targets. Hence it is important that senior management of all the companies involved in a collaborative relationship must believe in the value of the relationship and be committed to do whatever necessary to ensure the success. Spekman *et al* (1996) suggest 'Successful alliances .... must have the blessing and support of senior management'. Commitment of the workforce is also vital, because they are the people who actually make the difference.

Middle managers' priorities are on the following: 'shared knowledge and information', 'co-operative behaviour', 'clear role'. Middle managers are nearer to the work force and have responsibility for making a collaborative relationship work at a detailed level. Hence, they might be expected to emphasise the communication implied by 'shared knowledge and information' and the 'importance of co-operative behaviour' within the work force. Possibly they would find it hard to work within an alliance without sufficient information and knowledge. Senior management commitment and support are also important for them in this regard.

Although the respondents give their opinions in relation to the question of critical success factors of alliances and partnering, the factors must be present, if the relationship is to be successful. All the factors identified here especially those which are at the bottom of the list may not necessarily be critical success factors; rather they could be termed as factors whose presence increases the probability of success of a relationship. However, it should be born in mind that no single factor can guarantee the success of an alliance, but can only support it, because success in the oil and gas industry business depends on number of factors which are influenced by the internal



(e.g. technology, skills), national (e.g. tax regime, govt. policy) and global (e.g. oil price, war) business environment. Again, definition of the success is not always same for all the companies involved in an alliance at all the time.

## **7.6 Critical Failure Factors**

The study suggests that in the UK oil and gas industry, ‘absence of shared aligned goals’, ‘absence of clear targets’, ‘absence of trusting attitudes’, ‘absence of unhindered communication’, ‘presence of unaddressed cultural differences’, ‘absence of leadership’, and ‘presence of adversarial behaviour’, ‘absence of fair allocation of risk and reward’, ‘absence of open behaviour and willingness to change’ and ‘absence of commitment’ are perceived as the main critical failure factors of alliances and partnering. Critical failure factors are the factors whose presence makes a relationship more likely to fail. It may be mentioned that although much has been written on success factors of alliances and partnering, very little has been written on failure factors. It is possible that the absence or opposite of the ‘success factors’ may be deemed as failure factors. However, the present study shows that it is not always the case. Some factors are ranked high as failure factors, whereas the corresponding success factors are either not mentioned or are ranked low. For example, although ‘presence of trust’ is the most important success factor, ‘absence of trust’ has not been placed at the top position as a failure factor. Again some failure factors have been identified, such as ‘absence of leadership’, ‘absence of fair allocation of risks rewards and profits’, ‘presence of non-addressed cultural differences’ and ‘absence of willingness to change’ where the corresponding success factor has not been highly ranked by respondents. This indicates that there are some factors, absence of which may cause failure of collaborative relationships; however, presence of those factors will not necessarily bring success. For example, absence of fair allocation of risk and reward would discourage companies from working wholeheartedly for the success of the relationship which would have a detrimental effect on the success of relationship. However, mere presence of fair allocation of risk and reward would not ensure the success of the relationship. Combined effects



of many factors for example, trust between partners, skills and capabilities of companies involved, honesty and sincerity of the people etc. can bring success to an alliance.

Analysis by company type (see Appendix 3) suggests that respondents from the 'other' group which mainly consist of consultants, academicians and people from some companies other than operators and contractors, raise an important issue by giving highest priority on absence of strong and proactive leadership from senior managers as a failure factor. The importance of proactive leadership for making alliances and partnering successful has also advocated by different authors (Green and Keogh, 1998; Hoffmann and Schlosser, 2001). One of top management's most important tasks is maintaining a good relationship with the partner and visibly supporting the co-operation in one's own company. When an alliance is not proactively supported by the senior managers it could face different difficulties e.g. lack of resources, lack of motivation of the employees, which could result in the failure of alliance. Top management need to be visible in supporting the co-operative relationship.

Two other important issues have been highlighted by the respondents who are directly involved in alliances and partnering in the UK oil and gas industry, which are 'presence of un-addressed cultural differences' and 'unwillingness to change' often cause failure of alliances. The formation of an alliance will result in creation of new business processes within the alliance and changes to processes for the people in the member companies who interface with the alliance. The member companies may have different cultures and the people working within the alliance will have to develop their own culture. Fear of change may generate resistance from people in the alliance, because of the uncertainty it creates. People can be motivated to change through communication, participation and training (Foreman, 1998) which allows everyone to understand and become fully aligned with objectives and methods that deliver superior performance.



Although no factor can guarantee the success of an alliance, some factors can almost guarantee failure of a collaborative relationship, e.g. absence of co-operative behaviour, absence of shared goals etc. Hence, people who are responsible for managing the collaborative relationships must be aware of those factors to avoid disappointment from getting failure of the relationships.

### **7.7 Discussion on Common Concepts or Themes**

As mentioned earlier the similar concepts were clustered together under the umbrella of different themes and the following section discussed the results of analysis of the themes. Analysis of the themes with regard to all the responses of the questions about distinguishing characteristics (DC), criteria of success (CS), criteria of failure (CF) critical success factors (SF), critical failure factors (FF), shows that about 50% of the responses are linked with two themes i.e. 'goal/objective/target' and 'behaviour/attitude'. This finding suggests that in the UK oil and gas industry collaborative relationships, people assign highest priority to the achievement of goals, and behaviour of the alliance partners.

Through a careful examination of the two themes, it can be envisaged that one theme is concerned with the purposes of a relationship and other theme is about the actions which are required to meet the purposes. It seems quite logical that the respondents have given highest priority to those two themes. One company forms alliance with another to achieve some specific objectives/goals, and when they are in a relationship they must follow some standards of behaviour which would keep them right, encourage them to work together and lead them through the path of success. In fact these themes may be important to all business to business relationships, because each relationship must have specific goals/objectives, and achievement or non-achievement of these goals depends on the attitude/behaviour of the people involved in the relationships.



Themes about DC, CS, CF, SF and FF in the oil and gas industry were also analysed separately to understand the types of themes which were important to the issues (i.e. DC, CS, CF, SF and FF). Interestingly enough, the analysis suggests that different themes are given different levels of priority to the different issues.

In characterising alliances and partnering relationships, the respondents have put most emphasis on behaviour/attitude. There is little doubt that in a collaborative relationship it is people's behaviour which is most important. People may behave mainly in two different ways, one type of behaviour strengthens the relationship and the other type of behaviour may destroy the relationship. For example, people may have trust in each other or they may not have trust in each other; there may be absence or presence of blame culture; or may have high or low motivation to the relationship, and so on. Risk and reward is the second most important theme for distinguishing characteristics. Many authors have indicated the especial importance of risk and reward in the UK oil and gas industry collaborative relationship (Green and Keogh, 1995; 1998; Farrell and McDermott, 1995) which have further been emphasised by the respondents in this study.

Analysis of relative importance of the themes in the case of success and failure criteria shows that 'goals/objective/target' is considered most important here. That is to say success or failure of alliances and partnering are judged by achievement or non-achievement of goals or targets. Performance and behaviour are the other two important themes for success and failure criteria. In the case of success criteria priority is given on performance rather than behaviour; however, in the case of failure criteria higher priority is on behaviour. This suggests that better performance is given more importance in measuring success of an alliance whereas absence of proper behaviour e.g. absence of co-operative behaviour, presence of adversarial behaviour, are considered more important in measuring failure of an alliance. This may be translated as; that in an alliance absence of appropriate behaviour would



indicate that the people are not committed to the relationship and that would cause the failure of the relationship.

Analysis of the themes in connection with the success factors indicates that positive attitudes/behaviour e.g. presence of trusting attitude, or presence of co-operative behaviour are considered most important. When the involved parties in an alliance believe in co-operation, have trust in each other, understand each others' capabilities and needs, it would motivate them to work wholeheartedly to make the relationship successful.

In the case of failure factors, emphasis is on goal/ objective. Where there is an alliance which lacks clear and consistent goals or shared aligned goals, there is every possibility that it would not achieve success. Because the involved parties would not have a clear mandate, they would work in a disorganised fashion or may work for their own interest, which would be detrimental for the relationship.

## **7.8 Some Shortcomings of the First Phase Study**

The data collected for the study was mainly qualitative in nature. It was considered that development of concepts thorough content analysis and ranking themes depending on the frequency of their use would be sufficient to uncover respondents' opinions. Considering the nature of the data/information no statistical tests were performed, although the researcher is aware of the importance of statistical tests in interpretation of results as well as generalisation of the findings.

Although initiatives were taken to obtain opinions from all levels of people, there were fewer number of respondents from people at supervisory level or below than senior managers and middle managers. Therefore, the study lacks the view of the people who work at the front line in the industry.



Developing concepts from information/data through content analysis is a difficult task. It requires researcher's sufficient knowledge in the subject matter, analysis and interpretation skills of text data. Although in developing the concepts direct advice was sought from the director of studies, and some other subject matter specialists were consulted, there still might have been some human error, which might have occurred during interpretation of data/information and developing concepts.

Because of limited responses, some of the concepts, where the frequency count is not very high, have obtained places among the top ten concepts in some groups. This shortcoming would have been overcome through obtaining information/data from a larger number of respondents.

## **7.9 Conclusion**

This study provides a general understanding of collaborative relationships particularly alliances and partnering in the UK upstream oil and gas industry. The study investigates some of the important issues which are associated with the success of alliances and partnering in the industry namely, distinguishing characteristics, criteria of success, criteria of failure, critical success factors, and critical failure factors. Findings of the study suggest that in general success or failure of alliances and partnering are measured by the achievement or non-achievement of goals, mainly expressed in terms of cost saving, time and safety level. Some other criteria, for example acquiring more business, sharing risk and reward, presence of adversarial behaviour and absence of open communication, are also perceived to be important in measuring success or failure of alliances.

With regard to critical success factors, the study suggests that people in the industry perceive that trusting attitudes/behaviour, shared aligned goals, presence of open behaviour, presence of shared knowledge, clear role, commitment, co-operative behaviour and honesty are important. On the other hand it is perceived that some factors in an alliance can make the relationship more likely to fail. These factors are,



absence of clear targets, absence of trusting attitudes, absence of unhindered communication, presence of adversarial behaviour, absence of leadership and presence of unaddressed cultural difference.

Making success of a collaborative relationship is a variable and complex task. Each relationship is different from others and there are many intangible and unpredictable factors which may affect the success or failure of the relationship. It would be inappropriate to suggest that only by taking care of the identified factors, success of alliances could be ensured, and there may be some other issues which have an essential role to play. For example, the findings do not include some factors which have been suggested as important in the literature e.g. 'no-blame culture', 'change of attitude', 'sufficient resources' and 'training'. Depending on the purposes of forming alliances and the business environment in which they are formed there may be a variety of factors which influence the success or failure of the alliances.

The findings of the study are obviously interesting but they may not be comprehensive because they mainly identify the issues which are associated with the success or failure of alliances but do not provide a detailed understanding of any of the issues. Given the importance of the subject matter i.e. the success of collaborative relationships, and having identified issues which are associated with the success, it was considered important to conduct a focused and a more detailed study of at least one of the important success factors.

Any one of the interesting issues could have been chosen for an in-depth study. Among the different issues, role of trust in collaborative relationships was considered as a significantly important area for further study, because from the analysis of critical success factors, it appeared that 'presence of trusting attitude' was perceived by the respondents as a highly important factor for making a collaborative relationship successful in the oil and gas industry.



Again analysis of the common concepts or themes suggests that the highest percentage of the total responses of the first phase study was about attitudes and behaviour. Although attitudes and behaviour cover different aspects of soft issues e.g. co-operative behaviour, blame culture, willingness to change, high motivation, trusting attitudes etc, a substantial portion of the responses nevertheless was about trusting attitudes. Literature review also shows that, in general, trust is viewed as fundamental to the existence of any collaborative working arrangement. Many authors view trust as central to all collaborative relationships and it is said that no alliance can survive without trust (Spekman, 1998; Ford, 1990; Wolff, 1994; Parkhe, 1998, Vangen and Huxham, 1998). Although many writers have talked about the importance of trust, there seems to have been little detailed work on the perceptions of the people actually involved of what is meant by trust and what are the effects of presence of trust in a relationship.

After considering all these factors, the researcher also became convinced that 'trust' should be taken forward for further study, although it was recognised that many of the other 'issues' deserved to be investigated further and were to be left for other social scientists. Hence it was decided to conduct another study to investigate perception of trust and its effects in collaborative relationships. Before conducting the survey, a detailed review was carried out on different aspects of trust which is illustrated in the next chapter. The subsequent chapters discuss the methodology used for the second phase study, analysis and interpretation of data, and discussion of results.



## CHAPTER 8

### LITERATURE REVIEW ON TRUST IN COLLABORATIVE RELATIONSHIPS

#### 8.1 Introduction

The past decade has seen dramatic changes in the modern organisations. It is evident that co-operation, both within and between enterprises, is becoming increasingly popular strategic move by businesses to improve their competitive position (Child and Faulkner, 1998). New organisational linkages, Joint ventures, partnerships, and strategic alliances are being formed to achieve and maintain competitive advantage in the market place. The structure of organisations is also changing. Organisations are flatter and organise around process rather than traditional departments. Power relationships are no good in these new organisational arrangements, but trust based relationships are the viable option (Hardy *et al*, 1998; Wolff, 1994; Kets, 2000).

The first phase study of this PhD programme identifies ‘presence of trust’ as one of the most important success factors in the UK oil and gas industry collaborative relationships. Trust has also been considered, implicitly or explicitly as an important component in inter-organisational co-operation by many social scientists. Trust is needed to reduce uncertainty, produce co-operation, solve problems, and uncover innovative solutions in a collaborative relation. Trust has also received attention as a mechanism of organisational control and more especially as an alternative to price and authority (Hardy *et al*, 1998; Sabel, 1993; Sako, 1992; Bradch & Eccles, 1989). The purpose of this chapter is to examine and analyses different aspects of trust which have been illustrated in relevant publications in order to gain a clearer understanding of the role of trust in inter-organisational relationships. The literature review covers mainly three aspects of trust in inter-organisational relationships. First of all it considers the meaning of trust by examining definitions of different types of trust which have been suggested by social scientists. Then it investigates



the effect of presence and absence of trust in alliances and partnering. Finally it explores different mechanisms by which trust and distrust are produced especially in inter-organisational relationships.

## **8.2 Meaning of Trust**

### **8.2.1 Definition**

Mayer *et al.* (1995) mentions that although there is agreement on the importance of trust, there is little consensus on how to define it. There is little doubt that behavioural scientists have had a difficult time in agreeing on what trust actually is. Different authors have considered different aspects of relationships in defining of trust, and many definitions of trust have been put forward in the literature.

Trust has been viewed as behavioural intention or behaviour that reflects a reliance on a partner, and involves vulnerability and uncertainty on part of the trustor (Coleman, 1990; Vangen and Huxham, 1998; Gulati, 1995). Mayer *et al* (1995) proposed the definition of trust as “ the willingness of a party to be vulnerable to the actions of another party based on the expectation that other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”. Parkhe (1998) suggests that trust inherently involves uncertainty about the future and risk of losing something of value. Coleman (1990) viewed trust as behavioural intention or behaviour that reflects a reliance on a partner, and involve vulnerability and uncertainty on part of trustor. Being vulnerable implies that there is something of importance to be lost. Making oneself vulnerable is taking risk, however trust is not taking risk *per se*, but rather it is a willingness to take risk, as Moorman *et al* (1993) defined trust as the willingness to rely on an exchange partner in whom one has confidence. Macbeth and Ferguson (1994, pp. 14-30) argue that risk is reduced as trust grows, because strong relationships are formed and commitments are made when individuals and organisations make themselves vulnerable to each other, and this mutual interdependence decreases opportunism.



Powell (1990) suggests trust as “a remarkably efficient lubricant to economic exchange that reduces complex realities far more quickly and economically than prediction, authority, or bargaining”. Trust is the mutual confidence that no party to an exchange will exploit another’s vulnerabilities (Sabel, 1993; Handy, 1995). Many researchers view trust as a belief, confidence, expectation about a partner’s expertise, reliability, or intentionality (Anderson and Weitz 1989; Dwyer and Oh 1987; Pruitt, 1981). That is to say, when parties to an exchange trust each other, they share a mutual confidence that others will not exploit any adverse selection, moral hazard, hold-up, or any other vulnerability that might exist in a particular exchange.

Bromiley and Cummings (1992) distinguish between trust and trustworthy behaviour. They define trust as an individual’s belief or a common belief among a group of individuals that another individual or group (i) makes good faith efforts to behave in accordance with any commitments both explicit or implicit (ii) is honest in whatever negotiations preceded commitments, and (iii) does not take excessive advantage of another even when the opportunity is available. Trustworthy behaviour means that individuals actually behave according to (i), (ii) and (iii). The first dimension implies the individual being trusted is behaviourally reliable i.e. actually behaves to fulfil commitments. The second dimension implies that the individual’s statements and behaviour prior to making commitment are consistent with the individual’s real desires and facts as the individuals knows them. The third dimension implies the individual does not take full, short-run advantage of unforeseen opportunities to gain at the expense of the other.

Worchel (1979) proposed that trust might be conceptualised mainly from three different perspectives:

- a. the views of personality, where trust may be conceptualised as belief, expectancy, or feeling that is deeply rooted in the personality.



b. the views of sociologists and economists which are based on institutional phenomenon. Here trust is conceptualised as both a phenomenon within and between institutes, and a phenomenon between individuals and institutes.

c. the views of social psychologists, here trust is viewed as the expectation of the other party in a transaction, the risk associated with assuming and acting on such expectations, and the contextual factors that serve to either enhance or inhibit the development and maintenance of trust.

### **8.2.2 *Types of trust***

Social scientists have analysed trust from different perspectives of social behaviour and inter-organisational relationships, and proposed different types and categories of trust. Sako (2000, pp. 88-117) identifies three types of trust relevant in buyer-supplier relations, contractual trust, competence trust and goodwill trust. In contractual trust it is perceived that each trading partner will uphold a universal ethical standard, namely that of keeping promises. Normally, it is expected that suppliers will provide standard goods on the basis of written orders and they will be paid within an agreed period of time after delivery. Partners may also be trusted to keep commercial secrets.

In competence trust it is expected that a trading partner would perform its role competently. Conventionally, the buyer inspects goods on delivery to ascertain quality and standard. Quality assurance is done by the supplier. Suppliers are asked to practise so called ship-to-stock delivery straight on to the assembly line. Competence trust is obviously much higher in the latter case.

The third type trust Sako identifies is goodwill trust. It is a more diffused kind, and refers to mutual expectations of open commitment to each other. There are no explicit promises or professional standards which are expected to be fulfilled like other two types of trust. In 'good will trust' expectation is higher than 'contractual



trust' and 'competence trust'. Here one trading partner is committed to take initiatives (or exercise discretion) to exploit new opportunities for the other.

Barney and Hansen (1994) mention that three types of trust i.e. 'weak form trust', 'semi-strong form trust', and 'strong form trust' exist in different economic exchanges. They argued that 'weak form of trust' is likely to emerge in exchanges where there are limited vulnerabilities and limited opportunities for opportunism. Existence of this kind of trust does not depend on the erection of contractual or other form of exchange governance. If there are vulnerabilities or moral hazards, then the trustworthiness of exchange partners will be high, and trust will be the norm in the exchange. Weak form of trust can only be a source of competitive advantage when competitors invest in unnecessary and expensive governance mechanisms.

'Semi-strong form of trust' can be expressed as 'trust through governance'. Trust through governance emerges when significant exchange vulnerabilities exist due to adverse selection, moral hazard, hold up, or other sources. Ranges of governance devices have been described in the literature although main focus is given on market-based and contractual governance devices. Firms that develop a reputation for behaving opportunistically will often be excluded from future exchanges and the cost of this kind of behaviour may be substantial.

In 'strong form of trust', trust emerges in the face of significant exchange vulnerabilities, independent of whether or not elaborate social and economic governance mechanisms exist, because opportunistic behaviour would violate values, principles, and standards of behaviour that have been internalised by parties to an exchange. Strong form of trust could be emerged in response to sets of principles and standards that guide the behaviour of exchange partners (Sako, 2000).

Zucker (1986) distinguishes three different sources of trust: process-based trust, characteristic-based trust, and institutional based trust. Process-based trust develops



from concrete experience of social and/or economic exchanges and is brought as an expectation to future transactions. This kind of trust is tied to past or expected exchange such as in reputation or gift exchanges. It is argued that this kind of trust emerges particularly when the quality of exchanged goods or service is uncertain as in the case of financial services.

**Characteristic based trust-** Characteristic based trust is independent of a concrete exchange experience. The sources of this kind of trust are rather personal characteristics such as age, sex, or belonging to a particular ethnic community or social system.

**Institutional based trust-** Institutional based trust is tied to formal societal structure, depending on individual or firm specific attributes (e.g. certification as an accountant). It is considered as being more diffused in a wider network of relationships. Sources of institutional-based trust are first of all traditions, professions, certifications, licences, brand names, or memberships in certain associations. A further source of Institutional-based trust is social practices of intermediaries which create trust relations among third persons or systems, whilst they themselves have to rely on trust relationships with their interaction partners (Lane and Bachmann, 2000).

There is some confusion about the term ‘institutional-based trust’ and ‘system trust’. To avoid such confusion it is of central importance not to mix up the source of trust with the question of who or what should be assumed to be object of trust. Sydow (2000, pp.31-63) suggests the term ‘institutional based trust’ should only be used where the source of trust is concerned, and the ‘system trust’ when the object of trust is not an individual but a social system such as a firm or any other organisation. However, in many cases it can be very difficult to decide who or what the object of trust really is. For example, when social actors decide to trust their business partners for the quality of delivered product, they might not be able to say whether they have



more faith in competence and goodwill of their business partners or in the institutional system within which this transaction takes place and which produces the social standards of controlling their business partners' expectations and behaviour (Bachmann, 2000).

Lane (2000, pp. 1-30) suggests that in inter-organisational co-operations, three types of trust; calculative trust, cognitive trust and normative trust have some bearing on the relationships between the involved partners. Trust based upon calculation involves expectation about another, based on calculations which weigh the cost and benefit of certain courses of action to either the trustor or the trustee. This type of trust mainly depends on an availability of relevant information. Calculative trust is likely to apply particularly to relationships which are new and hence can only proceed on the basis of institutionalised protection or the reputation of the partner.

In case of cognitive trust, potential basis of trust lies in the sharing of cognition including common way of thinking between parties concerned. This sharing of cognition provides a basis for understanding of a partner and for predicting that partner's actions. Trust that is cognition-based, rests upon the knowledge people have of others and the evidence of their trustworthiness. Common cognition provides the assurance that one can reasonably predict other people's behaviour on the basis of shared expectations McAlester (1995).

Another form of trust Lane suggests is normative trust. This type of trust depends on people sharing common values, including common concepts of moral obligation. Common values and norms of obligation can develop in a long-standing relationship where trust was originally created in an incremental manner.

Again, Shapiro *et al* (1992) suggest that three types of trust operate in business relationship: deterrence-based trust, knowledge-based trust, and identification based trust. Deterrence-based trust is based on consistency of behaviour that people will



do what they say they are going to do. Here behaviour consistency is sustained by the threat of punishment (e.g. loss of relationships) that will occur if consistency is not maintained.

Knowledge-based trust is grounded in behavioural predictability- a judgement of the probability of the other's likely choice behaviours. This type of trust occurs when one has enough information about others to understand them and accurately predict their likely behaviours. The more knowledge of contract parties have the better the chance they will come to understand and predict each other's behaviour.

Identification based trust is based on complete empathy with the other party's desire and intentions. At this level, trust exists because each party effectively understands, agrees with, empathises with, and takes on the other's values because of emotional connections between them and thus can act for the other. Identification based trust thus permits one to act as an agent for the other and substitute for the other in interpersonal transactions. This highest order of trust assumes that one party has fully internalised the other's preferences (Sheppard & Tuchinsky, 1996, pp. 140-165). Factors like existence of joint products, goals, strategy; having shared name or legal status; proximity; the presence of long and entangled history; and common values encourage establishment of this kind of trust. The three types of trust i.e. deterrent-based trust, knowledge-based trust, and identification-based trust are linked in a sequential interaction. That is achievement of trust at one level enables the development of trust at the next level and so on (Lewicki and Bunker 1996, pp. 114-139). 'Identification-based trust', 'Strong form of trust' and 'goodwill trust' may be considered as similar kinds of trust although they have been termed differently, because all of them are founded on the emotional bonds between people which develop over quite a long period of time. These bonds express genuine concern for the welfare of partners, a feeling that the relationships have intrinsic virtue, and a belief that these sentiments are reciprocated. Table 8.1 provides a summary of different kinds of trust and their characteristics.



**Table 8.1**                                      **Types of trust and their characteristics**

Type of trust	Characteristic
Contractual	It is assumed that alliance partners will uphold universal ethical standard. Shared moral norm of honesty and promise keeping.
Competence	Trading partners perform their role competently. Shared understanding of professional conduct and technical management standard.
Goodwill	Trading partners take initiative or exercise discretion to exploit new opportunities for other. Exist only when there is consensus on the principle of fairness.
Institutional based	Tide to formal social structure. Depend on firms’ specific attributes.
Calculative	Based on calculations which weigh the cost and benefit of certain courses of action to either the trustor or the trustee. Trust based on calculation depends on an availability of relevant information.
Cognition	Based on knowledge people have of others and the evidence of their trustworthiness. Basis of trust lies in the sharing of cognition including common way of thinking between partners concerned.
Normative trust	Trust which is rest upon people sharing common values including common concept of moral obligation.
System trust	Rest on social system such as a firm or an organisation. Object of trust is not an individual but a social system.
Deterrence-based	Trust arises when the potential cost of discontinuing the relationship in a whole or in part outweigh the short term advantage of acting in a distrustful way.
Knowledge-based	It is grounded in behavioural predictability- a judgement of the probability of the other’s likely choice behaviours.  This type of trust occurs when one has enough information about others to understand them and accurately predict their likely behaviour.
Identification- based	This type of trust is based on complete empathy with the other party’s desire and intentions.
Weak form of trust	Weak form of trust emerges where there are limited opportunities for opportunism. If there is no vulnerabilities, moral hazard, or hold-up in an economic exchanges then weak form of trust will be norm in that exchange.
Semi-strong form of trust	Semi-strong form of trust depends on the governance devices such as market for reputation and contracts to safeguard against the threat of opportunism.
Strong form of trust	Strong form of trust emerges in response to a set of internalised norm and principles that guide the behaviour of exchange pattern.
Process-based trust	Trust develops from concrete experience of social and/or economic exchanges and is brought to an expectation to future transaction.
Characteristic-based trust	This kind of trust is tied to person’s attributes e.g. age, sex, belonging to a particular ethnic community or social group.
Institutional based trust	Tied to formal societal structure, depending on firm specific attributes.  Sources of institutional-based trust are traditions, professions, certifications, licences, brand names, or memberships in certain associations.



### **8.3 Benefits of Trust in Collaborative Relationships**

Working together often involves interdependence, and people must therefore depend on others in various ways to accomplish their personal and organisational goals. Several theories have emerged that describe mechanisms for minimising the risk inherent in working relationships. The notion of governance structure such as formal arrangements like markets and hierarchies is closely linked to the idea of ‘safeguard’ against opportunistic behaviour. Trust is a social norm lessens the need to use such safeguard to attenuate opportunism (Heide and John, 1990; Sako, 2000). In other words, trust may act as a governance mechanism, albeit an informal one, to enhance the effectiveness of transactions whether they take place in markets or within hierarchy (Smitka 1991). In a world of increased uncertainty and complexity, flat hierarchies, more participate management style, and increased professionalism trust is thought to be a more appropriate mechanism of controlling organisational life than hierarchical power or direct surveillance.

The effect of growing trust is to increase the comfort each partner has in the relationship. This comfort leads not only to the reduction of transaction costs, but also to increase in the willingness of each partner to develop mutually dependent relationships (Hutchins, 1992). Bromiley and Cummings (1992) suggest that trustworthy behaviour of collaborative partners i.e. the extent to which they negotiate honestly, try to maintain commitments, and do not exploit unreasonably opportunities for negotiation, should influence organisational functioning within transaction cost framework.

Minimisation of transaction cost may be used as a criterion to measure performance of a business (Williamson, 1979). Transactions occur ‘when a good or service is transferred across a technologically separable interface’ (Williamson, 1981). Transaction costs are incurred when exchanges have to be negotiated, monitored or enforced (Jones, 1983) and Transaction cost economising is obtained by assigning transactions to efficient governance structures. Increased trust between alliance



partners promises economic pay off for each. If they can develop mutual trust, this should reduce the negative effects of bounded rationality, specific investment in the alliances, and the opportunism which would otherwise arise, and so reduce transaction cost (Chiles and McMackin, 1996). Trust enables a network of firms to adapt to unforeseen circumstances, thus reducing transaction costs. Sako (1992, pp. 31-48), comparing Western and Japanese approaches to managing customer-supplier relationships in the motor industry, conceptualises the place of trust somewhat differently. She considers trust as a continuum. At one end of the continuum 'arms-length contractual relationships' (ACR) are characterised by low dependence, multiple supplier/customer contracts, bidding for order, short-term detailed written contracts and low trust. At the other end of the scale, 'obligational contractual relationships' (OCR), are characterised by interdependence, limited supply/purchase choice, limited bidding, long-term relationship, few if any formal contracts, mutual interdependence and high trust. To Sako, the Western inter-organisational relationships are more likely to be towards the ACR end of the continuum, and Eastern inter-organisational relationships towards the OCR end. She argues that it is the OCR which brings competitive advantages to buyer-supplier relationships.

Sako (2000, pp. 88-117) suggests that in addition to the reduction of transaction costs, inter-organisational trust may enhance business performance in two other ways; investment with future returns and continuous improvement and learning. Building trust in itself is an investment, the returns to investment may be in terms of low monitoring and co-ordination costs. Trust between suppliers and buyers enables such practices as just-in-time delivery and no quality inspection on delivery. However, at any time, a buyer and a supplier which have just begun trading and are in the process of building a high-trust relationship may be incurring a greater set up cost than other companies in low trust relationships. Trust, especially the good will sort also encourages rapid innovation and learning. Suppliers in high trust relations are likely to exploit opportunities to the mutual benefit of both the customer and the



supplier, which would otherwise not have been exploited had transactions depended solely on contracts or incentives.

Trust between partners should make them more willing to share information, reduce the temptation for each partner to take advantage of the other because of the goodwill it represents, and thus render the co-operation more genuine, reduce the need to spend time and effort checking up on the other partners, and help to direct the partners' attention and energies towards longer-term goals of mutual benefits (Child, 1998, pp. 241-273).

Trust makes organisation change easy when necessary. In many organisations, employees have a built-in negative response to change because they expect management will exploit opportunities presented by change to disadvantage the employees, and do not trust management assurances to the contrary. Employee resistance to change is a critical problem in change efforts in all organisations. Goodman *et al* (1980) suggest that trust strongly influences co-operation and agreement under times of change and uncertainty.

#### **8.4 Effects of Lack of Trust**

Having discussed the benefits of trust in collaborative relationships, now we will consider the social scientists' views on the effects of lack of trust or presence of distrust in collaborative relationships. Bromiley & Cummings (1992) mention that lack of trust should equate primarily with greater use of process controls, and secondly with financial controls. If a buyer does not trust a supplier at all, the buyer would like to control all important aspects of the supplier's behaviour. This means heavy process controls - extremely detailed descriptions of behaviours the supplier should follow with controls based on actually following the procedures.

They also argue that high and low trust environments should also differ in the way in which evaluation measures are applied. For example, if the banker does not trust



someone to whom a loan has been issued, the banker may demand audited reports, frequent small payments, and frequent checks on execution of the terms of the loan. If the bank does trust the borrower, the banker will allow longer repayment schedules perhaps with less frequent payments, and does not worry about the detailed checks so much until multiple payments have been missed. Low trust environments should have more frequent evaluation of performance followed more quickly by negative consequences for the evaluated manager. Similarly, Cummings (1983) argues that low trust results in personnel systems which emphasise evaluation and reward and punishment functions instead of mentoring and employee development.

The consensus in the literature is, therefore, that collaborative relationships have the potential to deliver competitive advantages to collaborative partners and that these advantages will only be fully taken when mutual trust is developed. A key question is, therefore: What circumstances facilitate the development of trust between collaborative partners? Building upon the works of different social scientists, the following section responds to this question.

### **8.5 Building of Trust**

Trust is an interpersonal phenomenon, upon which the quality of inter-organisational relations is founded. In a collaborative relationship only certain individuals from each collaborative organisation are responsible to liaise with their collaborative partners. These individuals play the vital role in promoting trust between partner organisations. There are different issues or factors which influence the development and establishment of trust in collaborative relationships and those factors may vary in different social, cultural, cross national and international boundaries.

Sydow (2000, pp. 31-65) suggests that six properties of a network (alliance) are of influence in the construction of organisational trust. The first four properties are concerned in the main network relations, which are frequency and openness of



communication, multiplexity of relationship, open-endedness of relationship, balanced autonomy and dependence. The latter two properties predominantly relate to organisations tied together by a network i.e. number of network organisations and similarities of network organisations. The six properties are:

a. Frequency and openness of inter-organisational communication: Frequent, repeated and multifaceted contacts among organisations and an open exchange of communication increase the possibility of trust building in the network.

b. 'Multiplexity of network relations' is second structural property, which is likely to promote the constitution of inter-organisational trust. At a given point of time organisational actors transact different contents for a variety of reasons. Products and services are among those contents as are information and emotion. Based upon the agreement, the more different contents are exchanged, the more the relationships are likely to exhibit the trust properties.

c. A third structural condition is the open-endedness of the relationship. A long term or a continuation of relations tends to increase trust and co-operation within inter-organisational network. Axelrod (1984) also suggested that the conditions under which co-operative behaviour will rise are; perceptions by both parties that there will be contact over time, belief in the advantages of co-operation, and recognition that each party must reciprocate benefits.

d. A balanced relation between autonomy and dependence may contribute to the constitution of trust within inter-organisational networks. Anderson and Weitz (1989) also believe that a power imbalance leads to exploitation by one party, with the other party becoming dissatisfied and, therefore, less willing towards long term co-operation.



e. A fifth structural property enhancing the construction of trust is the number and similarity of network organisations (Powell, 1990). This is concerned with the network actors, rather than the structure of the network relationships. Inter-organisational trust will increase when a small number of firms are involved in a network. In addition, the construction of inter-organisational trust is the more likely if the structural properties of the network firms are similar. For example, in regional networks of more equal firms inter-organisational trust emerges due to the small size of the network, the intensity of communication among the network firms, shared integrated schemes and norms based upon regional bonds and the operational closeness of the network (Sabel, 1993). Whereas inter-organisational trust will be difficult to build up if the network cuts across national borders and regional cultures.

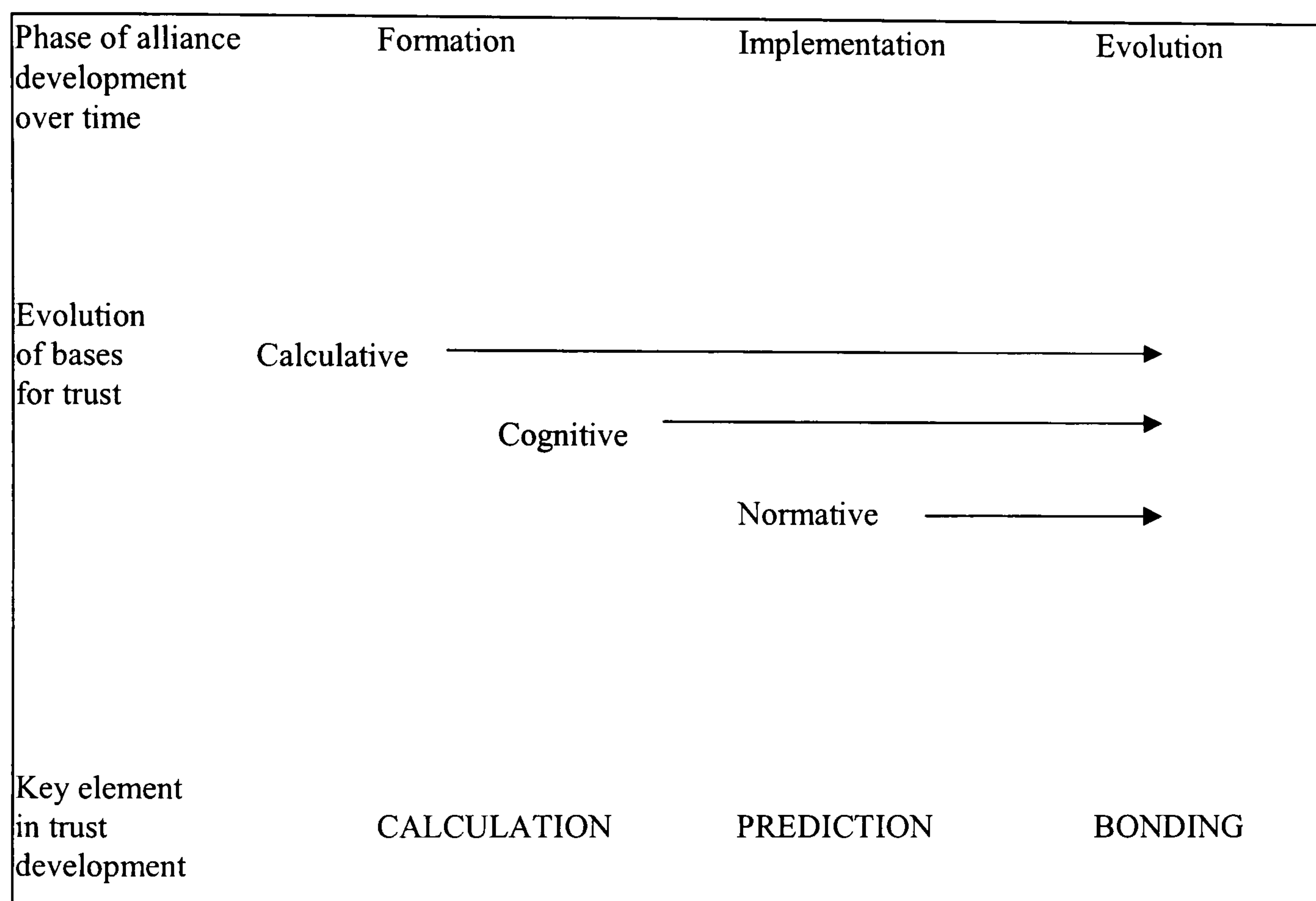
f. Sixth and final structural property for the construction of inter-organisational trust suggests that a narrow and well-defined inter-organisational field may enhance the constitution of inter-organisational trust. However, Sydow argued that those six structural properties are not simply 'given' nor do they determine a certain level of inter-organisational trust. Rather they reveal opportunities and constraints for actors to refer to in acting i.e. in communicating, sanctioning, and power executing. Child, (2000, pp. 241-273) summarises the co-incidence between strategic alliance development and the evolution of calculative, cognitive, and normative based trust relationships proposed by Lane (2000) in a collaborative relationship (Figure 8.1). In the formation stage, a calculation that partners have the ability, competence and motivation to deliver on their promises, and that there are sufficient deterrents based on law and reputation for them not to let their partners down, form the basis of trust.

Once the alliance is in the process of being implemented, the people working together from the partner organisations have the opportunity of getting to know each other more intensively than before. The growing ability of each partner's staff to understand and predict the thinking and actions of the other's can provide further



basis for trust between them. This mutual understanding should reduce the sense of uncertainty which partners experience about each other.

**Figure. 8.1**                      **Phases of alliance development and the evolution of trust**



Child, 2000, p 252.

The evolutionary stage permits stable, ongoing relationships both between people in the partner organisations who have responsibility for (or interest in) the alliance and the people working on an everyday basis in the alliance's own organisation. They accumulate knowledge about each other, which tends to reinforce the relationship. As relationship develops over time within the context of a successful collaboration, so there should be a natural tendency for those concerned to identify increasingly with one another's interests as well as emotional ties. This process allows bonding to form between co-operative partners and reinforces trust and co-operation between them.



In the literature, there is the general consensus that trust will only develop when both partners demonstrate trustworthy behaviour over a period of time. Granovetter (1985) believes the past behaviour of collaborative partners that is perceived as trustworthy leads to trust in the future. Dwyer and Lagace (1986) believe that trust will grow when partners' behaviour is seen to be non-manipulative, non-evaluative, problem solving, spontaneous and tentative. Bromiley and Cummings (1992) put forward a similar view; feelings of trust will develop as expectations grow that a partner keeps commitments, is honest in negotiations, and will not take advantage of other's vulnerability.

According to some social scientists, balance of power between collaborative partners plays an important role in developing and fostering trust in the relationship. Dwyer and Lagace (1986) believe that both parties in a collaborative relationship need to be seen as having equal power for trust to emerge. Graham *et al*, 1995 also argue that in an inter-organisational relationship both partners need to be perceived to have at least roughly equal influences over the domain of service being supplied, even if they have different amounts of power over other domains.

Many authors view communications between collaborative partners as playing an important role in developing trust between them. Hardy *et. al.* (1998) suggest in an inter-organisational relationship, trust grows out of a communication process in which shared meanings develop to provide the necessary foundation for non-opportunistic behaviour. Accordingly trust can be conceptualised as a communicative sense-making process that bridges disparate groups (Lewis and Weigert 1985; Zucker 1986; Sabel 1993). Anderson and Weitz (1989) list the behaviours that engender trust as; communication, responsiveness, fair play and co-operation over a critical "shake-up period".

Gill and Butlers (2000) associate trust with dependence and suggest that there is a two-way relationship between these two phenomena. Trust favours a willingness to



be dependent, and dependence provides a motivation to build trust and avoid action that may damage it.

Wolff (1994) suggests that following factors create a favourable environment, which build and sustain trust in collaborative relationships.

- A good business opportunity in which the scope is well defined, each partner is allowed to make contribution, and there is no significant difference in business goal between the partners.
- There is management autonomy and no side is dominated.
- Avoidance of excessive questioning and there is willingness to accept other side's proposal without full understand.
- The involved companies are flexible enough to try new and different approaches and willing to take a long-term view.
- Appreciate the differences in corporate culture of involved companies.

Again, Wayne (1994) suggests that the following factors contributes in building trust in a collaborative relationship:

- The alliance has to be well founded with common goals and equal benefits.
- One party's strength should be complementary to other.
- Involvement of right people from all partners.
- Regular meeting of a joints steering committee to review progress against goals.
- Personal relationships between key individuals of involved companies.
- When relationship is taken seriously and considered important by involved parties.

As sociologists have identified different types of trust, so they have suggested different mechanisms, which enable development of those types of trust. Zucker (1986) identified three central mechanism of trust production, processed-based, characteristic- based and institutional-based trust. In the process-based mode, trust arises either through the personal experience of recurring exchanges, such as gift



exchanges, or in expectations based on reputation. If a long-term balance emerges, repeated exchanges create a system of diffuse social norms of mutual obligation and expectation of equitable treatment. A considerable amount of person-specific or firm-specific information is required to generate process-based trust. Child and Faulkner (1998) suggest production of trust in this mode arises through the mutual reinforcement of investments in trust and the quality of co-operation associated with it. The security and stability of such recurring reciprocal exchanges enable learning and engender trust (Creed & Miles, 1996).

To develop characteristic-based trust, all that is necessary is information like social similarity. This type of trust is based on norms of obligation and co-operation rooted in social likeness- the expectation that a person can or cannot be trusted because of family background, age, social or financial position, ethnicity, and so forth. Similar characteristics, such as ethnicity may be sought out for exchanges with the expectation that there will be common understanding making the negotiation smooth and easy (Rempel *et al*, 1985). Co-operation is likely to be easier between people who have the same cultural norms. People are more likely to trust those who share the same values, because this establishes a common cognitive frame and promotes a sense of common social identity which has a strong emotional element (Child, 2000, pp. 45-62). Both process based and characteristic based trust are embedded in the broader social fabric of a society and vary across communities and states and from time to time within communities and states as Sako (1992, pp. 9-29) suggests that social norms seem to play a certain role when someone decides to trust or not to trust another social actors.

In institutional-based trust, formal mechanisms are used to provide trust that does not rest on personal characteristics or on past history of exchange. An effective system, for example banking system may develop this type of trust. Formal institutional mechanism provides codes (as in medicine) or guarantees (as in financial supervision) that transactions will take place as promised. It makes it



easier to develop a trust based relationship if the risks involved are reduced by institutional mechanisms such as effective law to enforce contracts or fear losing reputation (Lane and Bachmann, 1996).

As mentioned earlier Shapiro *et al* (1992) identify three kinds of trust i.e. deterrent-based trust, knowledge-based trust, and identification-based trust. They suggest that in the case of deterrent-based trust, trust is sustained to the degree that the deterrent (punishment) is clear, possible and likely to occur if the trust is violated. Hence, threat of punishment is likely the motivator of this kind of trust. Some sociologists called this type of trust as calculus-based trust because they believe that deterrence based trust is grounded not only in the fear of punishment for violating the trust but also in the rewards to be derived from prevailing it (Lewicki and Bunker, 1996).

Knowledge based trust relies on information rather than deterrence. This form of trust is grounded in the other's predictability- knowing the other sufficiently well, so that the other's behaviour is anticipated. Regular communication and courtship are the key elements to build this kind of trust (Shapiro *et al*, 1992). Regular communication puts a party in constant contact with other, exchanging information about wants, performance and approaches to problems. Lewicki and Bunker (1996) argue that without regular communication, one can 'lose touch' with the other not only emotionally but in the ability to think alike and predict the reaction of the other.

Identification-based trust is based on identification with other's desire and intention. This kind of trust develops when one partner in a relationship understands effectively the other's wants, needs, choices and preferences and also shares some of those same needs, choices, and preferences. This mutual understanding is developed to the point that each can effectively act for the others. Identification-based trust thus permits a party to serve as the other's agent and substitute for the other in interpersonal transactions (Deutsch, 1949). The other can be confident that his or



her interests will be fully protected and that no surveillance or monitoring of the actor is necessary.

## **8.6 Declining of Trust**

In the sociological literature, concern is also focused on the betrayal of trust and on the distrust which may develop in the face of opportunism. Lewicki and Bunker (1996) mentions trust decline in a general process that reflects the stage of trust development. Sometimes trust decline gradually at other times the decline occurs in single violation is so severe that it effectively eliminates all trust. Not all negative feedback information about the trustee threatens or disrupts trust. The trustee enjoys a certain credit which allows even unfavourable experiences to be reinterpreted and absorbed (Luhmann 1979; Zucker 1986). Depending on the circumstances and the object of trust, certain symbolic thresholds are created to determine when trust is considered broken.

When 'normal' expectations are not met and trust is breached, the common reactions are anomic and demonstrate confusion (Garfinkel, 1963). Disruption of background expectations is more likely to produce a reaction predicated on the individual being outside the social system. Violation of expectation produces a sense of disruption of trust, or profound confusion, but not of distrust. Distrust only emerges when the suspicion arises that the disruption of expectations in one exchange is likely to generalise to other transactions. To distrust, then, implies an attribution of intentionality that continues throughout all interactions or exchanges, at least of a particular type. Hence, trust can be disrupted without producing distrust. (Zucker, 1986). Luhmann (1979) suggests, distrust is not simply the opposite of trust but also a functional equivalent to it. Anyone who chooses not to trust another must adopt another negative strategy to reduce complexity. Distrust becomes visible to the exchange partner who eventually reacts with distrust on her own part.



## **8.7 Conclusion**

The literature review emphasises that presence of trust in a collaborative relationship is crucial to gain competitive advantages from collaborative relationships, and that factors like honesty, open communications, power, competence and culture have essential roles to play to develop and establish trust in a relationship.

There is evidence that, with little exception, most of the literature is based on theory and supported by little empirical data. Again, there is very little or no information available on the perception of trust in collaborative relationships in the UK oil and gas industry, although the industry has been adopting collaborative strategies since '90s. Therefore, research concerned with trying to understand and explain the role of trust in collaborative relationships in the UK oil and industry is needed.



## **CHAPTER 9**

### **RESEARCH METHODS EMPLOYED IN THE SECOND PHASE STUDY**

#### **9.1 Introduction**

The first phase study of the PhD research identified distinguishing features, perceived criteria of success, criteria of failure, critical success factors and critical failure factors of alliances or alliance-like relationships in the UK upstream oil and gas industry. Along with other findings, the study identified some factors e.g. trusting behaviour, shared goals, open behaviour, shared information, clear role, commitment, co-operative behaviour, honesty and integrated team which are considered vital to make a collaborative relationship successful. Analysis of the data from phase 1 also suggests that the respondents mentioned ‘trust’ most frequently as a success factor for collaborative relationships. The study identified ‘presence of trust’ as the most important perceived critical success factor in collaborative relationship in the industry. Considering the importance of trust coupled with personal in the topics ‘perception of trust in collaborative relationships in the UK upstream oil and gas industry’ was chosen as an area for more detailed research with the following research questions:

- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, mean when they talk about trust? What are the components of trust in oil and gas industry?
- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, perceive as the effects of presence or absence of trust in relationships?
- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, consider needs to be done to maintain or increase levels of trust in relationships?



- What is the relationship between perceived level of trust within a collaborative relationship and its perceived level of success?

Different research strategies which could be adopted in social science research have already been considered in chapter 4. The aims of the chapter are primarily to set out guidelines and principles used in selecting appropriate procedures and methods in the second phase study and to discuss how the results obtained from those procedures might be interpreted. This will include defining population, selection of sample, development of questionnaire, distribution of questionnaire, steps taken to maximise the response rate, data management, data analysis and use of statistical techniques.

## **9.2 Selection of Sample**

### ***9.2.1 Defining Population***

The term population refers to the collection of individuals, communities, companies, or nations about which one wishes to make a general statement (Jackson, 1995). Chein (1959) suggest that a population is aggregate of all cases that conform to some designated set of specifications. The specific nature of the population depends on the purpose and area of investigation. The present study was conducted to understand peoples' perception on the role of trust in collaborative relationships in the UK upstream oil and gas industry. The domain of the study was chosen to be the "collaborative relations" between the companies in the UK upstream oil and gas industry. Although, there are many companies in the UK oil and gas industry, not all the companies are involved in collaborative relationships. People, who worked in a company that did not adopt a collaborative strategy, would not be in a position to comment on matters related to the collaborative relationships between companies. In other words, those individuals differ in very relevant ways from the intended population. Only the people who had knowledge and experience of working or managing those kinds of relationships would be eligible to provide opinion on the matter under investigation. By the specifications 'people working in collaborative relationship' 'in the UK upstream oil and gas industry' we define a population consisting of all people who are involved in all the collaborative relationships in the



UK upstream oil and gas industry. Those people conform to the designated set of specifications of the study and therefore were labelled as the population of the study.

### ***9.2.2 Sampling***

The drawing of conclusions from data collected by adopting a survey methodology generally requires researchers to rest their case on partial information, because it is often impossible, impractical or extremely expensive to collect data from all the potential units of analysis encompassed in the research problem. Precise inferences on all the units (a set) based on a relatively small number of units (a subset) can be drawn when subsets accurately represent the relevant attributes of the whole set (Kizzer, 1997). Selecting a given number of subjects from a defined population as representative of that population is termed as sampling. Sampling is an important aspect of research methodology as it is closely linked to the external validity or generalizability of the findings in an enquiry (Robson, 1997). As discussed before in chapter 4 modern sampling theory recognises mainly two types of sampling i.e. probability sampling (where the probability of the selection of each sampling unit is known) and nonprobability (where it isn't known) sampling. Probability sampling includes simple random sampling, systematic sampling, stratified random sampling, cluster sampling and multistage sampling. Non-probability sampling includes quota sampling, dimensional sampling, convenience sampling, purposive or judgmental sampling and snowball sampling (Jackson, 1995).

For the present study it was not possible to adopt any of the probability sampling methods, rather two non-probability sampling methods i.e. convenience sampling and purposive sampling were employed to select the samples for the study. This was to ensure that only those people who had experiences and knowledge on the subject matter get selected for the study.

For the second phase study we had two different frames from which sampling units were selected. First, the companies of the UK upstream oil and gas industry which adopted collaborative strategies and second the people who were involved with the



collaborative activities in the selected companies. Sampling frame is the list(s) from which a sample is drawn (Jackson, 1995). Sampling frame may also be of other nature e.g. indexes, maps, or other population records from which the sample can be selected (Moser and Kalton, 1979). Therefore, selection of sample for the study was performed in two different phases. First, selection of collaborative relationships from the UK upstream oil and gas industry, and then selection of respondents from the selected relationships.

#### *9.2.2.1 Selection of alliance or collaborative relationships*

Selection of collaborative relationships was not straight forward. Different sources were used to identify the relationships and the companies involved in the relationships. The starting point was Offshore Management Centre, The Robert Gordon University, Aberdeen which kept records of such relationships. This record was used as a preliminary source of information in identifying the collaborative relationships for the industry. Information on on-going collaborative activities was also gathered from Leading Oil and Gas Industry Competitiveness (LOGIC). LOGIC works with the companies throughout the industry to stimulate collaboration and radically improve competitiveness. LOGIC provides professional and cost effective expertise to help companies develop profitable co-operative relations. (Rodriguez, 1999). All the information was used to identify the companies involved in collaborative relationships in the UK upstream oil and gas industry, and then select the sample from it. The identified companies were contacted via e-mail indicating objectives and scopes of the research and seeking permission for data/information collection from their employees. Some contacted companies sent positive replies and also invited for a meeting to discuss further with their representative, usually a senior manager, whom we termed as 'contact manager'. In the meeting, objectives of the study, time frame and possible benefits for the companies involved and for the industry were discussed in detail. At the end, five relationships agreed to offer full co-operation for data collection. This included providing list of employees, helping in identifying persons with experience in collaborative relationships, informing the prospective respondents in advance about



the survey and in some cases distribution of questionnaire via internal mail. Some other companies responded later, but it was too late so we could not take them on board. That is to say, the relationships for the survey were selected on the basis of accessibility, getting timely response and nature of relationships from the UK oil and gas industry. Therefore, it can be argued that convenience and purposive sampling methods were employed to select the relationships from the UK oil and gas industry. In the convenience sampling method the sampling units are selected which are conveniently available. Sapsford and Jupp (1998) denote it as 'opportunity' sampling because it implies usually what is the case; that is, the necessity of accepting whatever is available, with no realistic alternative. In purposive sampling (occasionally referred to as judgement sample) method, sampling units are selected subjectively in an attempt to obtain a sample that appears to be representative of the population (Nachmias and Nachmias, 1996).

#### *9.2.2.2 Selection of respondents*

Selection of respondents from the selected relationships to meet the purpose of the study was an important concern. Consideration was given to ensure that the sample population corresponds closely to the target population. A non-probability sampling method was used to select the respondents from the selected relationships. The subjects of the study were selected on the basis of their specific characteristics. The reason for adopting the strategy was to ensure the selection of right individuals for the survey. The prospective respondents were selected subjectively on the basis of their knowledge and experiences of either managing or working in collaborative relationships so that they could contribute to the research by putting forward their opinions on the issue under investigation, from their experiences and insights. In other words, sample units were selected on the basis of subjective judgement in an attempt to obtain a sample that appeared to be representative of the population.

The contact managers were involved in the selection process so that they could advise in identifying right individuals. Because the contact managers knew the people of the respective companies who were directly involved in different activities



of the relationship and had sufficient knowledge on the matter under investigation. It is important to mention that all employees of a company are not involved in dealing with their collaborative partners. By adopting purposive or judgmental sampling method, we selected only those people who had direct experience of working in collaborative relationship, and thus people who did not have experience of working in collaborative relationships were excluded from the survey. Consideration was also given to select all levels of employees who have either managed alliances or have worked in alliances or collaborative relationships. As Lincoln & Zeitz (1980) mention that researchers often ignore the question of whether organisation members at different hierarchical levels perceive the same organisational phenomena, relying only on top, middle or lower level of an organisation for information may be misleading.

The contact managers made the prospective respondents aware of the survey before sending the questionnaire. Endorsement of this kind is very useful because it probably helps to prevent some of the problems that arise when respondents think they are being studied without their consent (Cook and Campbell, 1979). This also helped us in establishing links with prospective respondents.

### ***9.2.3 Rationale of selection method***

In survey research a significant concern is the extent to which the research findings can be generalised to larger population and applied to different social and political settings (Argyrous, 1997). There are also difficulties in controlling or detecting two types of error, sampling error and non-sampling error which have direct impact on validity of research design. Sampling error 'is the differences between the characteristics of a sample and the characteristics of the population from which the sample was drawn' (Kizzer, 1997). Sampling errors occur simply because data is being collected from a sample and not from the population. Sampling errors are unavoidable, though they could be minimised through sound sampling procedures. On the other hand, major sources of non-sampling error related to sampling process itself include: sampling frame defects, non-response, inaccurate and incomplete



response, poor measurement instruments, defective data collection and incorrect data processing etc (Black, 1999). Many of the non-sampling errors can be controlled by adopting appropriate procedures. Random selection of sample contributes a great deal to minimising the above mentioned errors. The great virtue of randomisation is that it takes care of potential sources of bias both known and unknown. It can be assumed that error, whatever its source, will be randomly spread across a sample, and will cancel out when statistics are computed, then one does not even need to know what it is that is cancelled (Sapsford and Jupp, 1998). Randomisation serves two principal functions in social sciences. The first is to draw samples that are representative of a known population within limits of sampling error; the second is to draw samples that are comparable to each other within known limits of sampling error (Robson, 1997).

For practical reasons, however, it was not possible to adopt random sampling method for the survey, rather the sample was drawn by adopting convenient and purposive sampling methods. Since this study was about 'peoples' perception on trust in collaborative relationships in the UK oil and gas industry', the ideal data would have been drawn from the total population of such relationships. In practice, however it was not feasible to draw a random sample from such a broad population. Instead, we sacrificed a degree of external validity and chose the relationships and respondents conveniently and purposively with the hope that the selected sample would be closer to the population of interest. Although random selection of sample can contribute significantly to increase the external validity and to some extent to the internal validity by controlling sampling and non-sampling errors, however, there are some situations where random sampling is neither feasible nor desirable (Cook and Campbell 1979). For the present study if we selected the sample by a successfully implemented random assignment procedure from the population i.e. people who worked in the companies that were involved in collaborative relationships, there was no guarantee it would have selected the right individual who had the experience and knowledge in the area under investigation and thereby would be able to contribute in the research. In a collaborative company not all employees



are involved in collaborative activities. Only some groups of people are assigned to perform that job and are able to establish contact with the people of their collaborative partners. Through the contacts they may be able to gain experiences on different issues including 'presence of trust' which affect the relationship. In selecting the respondents by purposive or judgmental method we tried to assure that the respondents are selected only from that group of people who are directly involved in collaborative activities with the expectation that they would be able to contribute better in the survey. The adopted method also increased the validity by ensuring selection of a sample that corresponds closely to the target population.

Cook and Campbell (1979) argue that if a randomised experiment is conducted with a sample of units that does not correspond to the population of interest, in that case randomisation may not be feasible or desirable. Again, although randomisation conveniently rules out many threats to internal validity, it does not rule out all of them. They suggest that the case of random assignment can not be made on the grounds that it is a general facilitator of high quality research. Rather, the case of random assignment has to be based on the claim that it is a better means of ruling out threats to internal validity and statistical conclusion validity than other alternatives. It is also argued that a selection procedure which is not formally random may still be sufficiently haphazard so that it is 'random in effect'. For a similar kind of study Parkhe (1993) also used judgmental method to select sample from a broad population while sacrificing a degree of external validity.

To ensure the external validity of a study, the characteristics of the subject must reflect the characteristics of the population that is being investigated. By adopting a purposive sampling method it was possible to select the respondents who possessed the desired characteristics of the population. The adopted sampling method also helped to reduce and control some of the non-sampling errors in the following ways. First, selection of respondents by judgmental method helped to minimise nonsampling errors which frequently occur in technical survey due to lack of respondents' knowledge. Second, by adopting the above mentioned method we



were able to contact the prospective respondents and inform them about the survey before sending the questionnaire which ultimately helped to achieve increased response rate, and thereby reduced the non-response error, inaccurate and incomplete response. To conclude, the choice of sampling strategy should be primarily determined by resources available and the relative benefits of alternatives. Many of the decisions would be based upon the research design employed, the nature of data to be collected, statistical test to be used to interpret the data (Black, 1999).

### **9.3 Data Collection**

Robson (1997) suggests that there is no 'best method' for a study. The selection of data collection method was driven by the kind of research questions the study was seeking to answer. This was moderated by what was feasible in terms of available resources. The second phase study was conducted to obtain peoples' opinions on the role of trust in collaborative relationships. Different methods which are available to collect data in social research have been discussed in chapter 4. Considering the pros and cons of those methods, available resources, and the types of research questions investigated; experiment, case studies or grounded theory approaches were not adopted for the study. Rather it was considered that survey would be the best method to collect information for the study. According to a number of social scientists survey research is probably the best method available to the social scientist interested in collecting original data, gathering opinions, and measuring attitudes in a large population (Goode and Hatt; 1952; Babbie, 1995). Baker (1998) also suggests that survey research tends to be the method of choice for those who want to enquire the broad pattern of social life or who want to describe widespread social phenomena. Considering available time, skills, funding, and personnel only the questionnaire survey using a self-administered questionnaire was carried out for this study and no interviews were conducted. However it was recognised that interviews could add more value as they could allow verification of collected data, gather additional information and increase the triangulation of the research process. Before embarking upon the research exercise a thorough literature review was



conducted to explore the previous studies that have been carried out on the subject. The literature review and the first phase study provided the insight to develop the research project and the framework for developing the questionnaire for the study.

### ***9.3.1 Development of Questionnaire***

The foundation of all questionnaires are the questions. The questionnaire must translate the research objectives into specific questions. It must also motivate the respondents so that the necessary information is obtained, that answer the research questions (Miles and Huberman, 1994). In formulating the questionnaire major considerations were given to the subject matter under investigation and presentation of questions. In developing the questionnaire, care was taken in selecting type of questions, wording and structure of the questions, formatting and designing the questionnaire which are described in the following sections.

#### ***9.3.1.1 Content of questions***

Mainly two types of questions were used in the questionnaire i.e. factual questions and opinion or attitude questions. Factual questions were designed to elicit objective information from the respondents regarding their job levels, company types, alliance experiences and working environments. Responses to this type of questions aided in grouping the respondents, and in explaining differences in their opinions. Opinion questions were used to measure respondents' general inclination on the role of trust in collaborative relationships. The respondents were requested to provide their opinions on different matters related to trust, i.e. the meaning of trust, effect of the presence of trust, factors which enable trust to grow and barriers to developing trust in collaborative relationships in the UK upstream oil and gas industry. However, one opinion question 'What do you mean when you speak or think about trust in your working relationship?' was used to measure respondents attitudes on trust, that is whether they possess 'trusting' or 'non-trusting' or 'neutral' attitudes. It is possible to measure peoples' attitude from their opinion on a subject, because opinion is a symbol of an attitude (Nachmias and Nachmias, 1982). The main difference between asking for opinions and measuring attitudes is that an opinion is



generally measured by estimating what proportion of surveyed people who say they agree with a single opinion statement. Attitudes are measured by attitude scales which consist of five to two dozen or more attitude statements, where the respondents are asked to agree or disagree with the statements. The concept 'attitude' refers to the sum total of a person's inclinations, prejudices, ideas, fears, and conviction about any specific topic. Attitudes can be described by their content (what the attitude is about), by their direction (positive, neutral, or negative feelings about the issue), and by their intensity (Thurstone, 1928). Eight to 34 attitude statements were used in the questionnaire for the seven attitude questions depending on the complexities and dimensions of the subject matters which were under investigation.

#### *9.3.1.2 Question structure*

Considering the type of research questions of the study two types of question structures were used in the questionnaire i.e. closed-ended questions and open-ended questions. In the case of all attitude questions a closed-ended question structure was used. Nachmias and Nachmias (1982) suggest that closed-ended questions are suitable when the researcher's objective is to lead the respondent to express agreement or disagreement with an explicit point of view. In developing response categories for different closed-ended questions consideration was given that they were mutually exclusive, exhaustive but not too long and they provide 'residual other' category. The open-ended question structure was used in the case of two fact finding questions, where the respondents were asked to indicate their working experience and job title. In addition to that, at the end of each attitude question respondents were requested to make comments on the subject matter freely if they wanted. Respondents are generally reluctant to answer open-ended questions in a self-administered questionnaire (Bourque & Fielder, 1995) and very few respondents provided any comment.



#### *9.3.1.3 Designing Attitude Questions*

A Likert scale, which is based on ordinal measurement (Moser and Kalton, 1979), was used to measure respondents' opinions/attitudes on the role of trust in collaborative relationships. The basis of Likert scale is that there are underlying dimensions along which individual opinions/attitudes can be ranged. Ordinal measurement involves an underlying continuum in which the numerical values are ordered so that small numbers refer to lower levels on the continuum and larger numbers to higher points. The scale was originally devised by Likert in 1930s and is commonly termed as Likert scales (Jackson, 1995).

The concept 'attitudes' refers to the sum total of a person's inclinations, prejudices, ideas, fears, and conviction about any specific topic (Nachmias and Nachmias, 1982). Now, as one can assume that it is not possible measure peoples attitudes on a concept like 'trust' directly, social scientists measure indicators of concepts, which cannot be observed directly (Nachmias and Nachmias, 1996). Identifiable behaviour is used as an indicator of the underlying concept. Similarly some indicators were used to measure trust in the study. 'Trust' is a multifaceted concept and was not possible to assess it by means of a single indicator and thus the use of multiple indicators was required, each reflecting a distinct aspect of the concept. To have broader views on the respondents' attitudes on a concept, it was important to use multiple statements in the measure, because with one statement it was not possible to tackle different aspects of the phenomenon. A single statement may also lack precision, be less reliable and make it difficult to gauge the amount of measurement error. Responses of multiple indicators enable the researcher to build up a much fuller picture (Jackson, 1995).

With a view to obtaining opinion/attitude on each issue under investigation, a set of statements on different indicators was constructed. Insights for assembling the statements were gathered through literature review and from the initial study. Having assembled the statement pool, the next stage was to choose the items to be used in the question. First of all, excessive complex statements, ambiguous



statements, statements involving double negative, vague statements were discarded. After removing the unsuitable items, a selection was made from the remaining items. A careful consideration was given in selecting the statements for the final scale so that the universe of the content was adequately covered and that the statements fully span the opinion/attitude dimension of the area under investigation.

The selected items (statements) were put on a Likert attitude measurement scale. In Likert scales the respondent are asked to choose from five response categories, indicating various strengths of agreement and disagreement. The response categories were 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree, and 5 = strongly disagree. Response categories of these types are termed as 'quantifiers'; they reflect the intensity of the particular judgement involved. In some of the questions another category 'without opinion' was provided, because it was felt that for some of the statements the respondents might not be interested and/or able to provide any opinion, which was denoted as '0', and was not included in the analysis. The numerical codes that accompany these categories are usually interpreted to represent the intensity of the response categories, so that the higher the number, the more intense the response. It should be noted that although we assume that the quantifiers involved are order by their intensity, it does not imply that the distance between them is equal (Jackson, 1995).

Insights for making the statements were gathered from the literature review and from the first phase study as well as researcher's own social and working experiences. To illustrate the logic behind the derivation of statements let us consider the statements in relation to the question which asks the meaning of trust. Social scientists have put forward different definitions of meaning of trust which have been discussed in the literature review in chapter 8. When we analyse those definitions we see that they either suggest some kind of quality or attribute of people which make them trusted in the eyes of others or suggest some kind of basis on which people trust each other. This may be competence in performing certain job, or common way of thinking or common characteristics. For example, McAlister (1995) suggests people place trust



in someone who they believe has similar kind of thinking. That is to say presence of similar cognition encourage people to place trust in each other. Zucker (1986) suggests that trust develops from concrete experience of social or economic exchanges. Again Barney and Hansen (1994) suggest that different governance mechanisms such as market for reputation or contract to safeguard against the threat of opportunism help to create trusting environment in a collaborative relationship. Therefore, it can be argued according to them when people think or speak about trust they consider whether the likely trustor has similar ways of thinking, or whether he or she is known from previous experience or whether there is enough safeguard against the threat of opportunism. To obtain respondents' opinions on these issues three statements i.e. "I will trust someone if I believe that he or she thinks the same way as I do", "I will trust someone who is known to me from previous experiences" and "I will trust someone if I feel that our contract prevents him or her from taking advantage of me or my company" were made and put on the Likert type scale. Similarly in total 18 statements were created to gauge people's understanding of trust.

With regard to possible benefits of presence of trust between collaborative partners, authors have given different opinions or ideas. These ideas/opinions were taken into consideration in developing the statements in relation to the question on effects of presence of trust in collaborative relationships. Let me reflect on some of the literature which was used in this regard. It is suggested that presence of trust between collaborative partners increases the comfort each partner has in the relationship. This comfort leads not only to the reduction of transaction costs, but also to increase in the willingness of each partner to develop a mutually dependent relationship (Hutchins, 1992; Bromiley and Cummings (1992). Sako (2000) suggests that in addition to the reduction of transaction costs, inter-organisational trust may enhance business performance in other two ways; investment to increase future returns and continuous improvement and learning. Again Child (2000) suggests that trust between partners should make them more willing to share information, reduces the temptation for each partner to take advantage of the other



because of the goodwill it represents, and thus render the co-operation more genuine. It also reduces the need to spend time and effort checking up on the other partners, and helps to direct the partners' attention and energies towards longer-term goals of mutual benefits. Trust allows them to believe that others will not take advantage of them or will perform the assigned task satisfactorily or will take the necessary steps to benefit the relationship (Powell, 1990).

A number of statements were developed keeping all these views in mind. From the views of Bromiley, Cummings and Sako a statement "High levels of trust in a collaborative relationship will reduce business operation costs" were made. From Child's argument statements "High levels of trust will enable information to flow freely between the companies", "High levels of trust in a collaborative relationship will reduce fear of opportunistic (advantage taking) behaviour", "High levels of trust in a collaborative relationship will reduce business operation costs", "High levels of trust in a collaborative relationship will improve the efficiency of joint activities" were made. While Sako's views were used in developing the statements like "High levels of trust in a collaborative relationship will reduce business operation costs", "High levels of trust in a collaborative relationship will result in increased innovation and learning", "High levels of trust in a collaborative relationship will improve competitive advantage of the companies involved". Therefore we can see that from the insight of one social scientist's opinion one or more statements were developed. Again, in some cases in developing one statement more than one social scientists' opinions were taken into account. This method was also followed in making the statements for the questions in relation the factors which enable trust and the factors which diminish trust in collaborative relationships in the industry.

Information which was gathered from the first phase study was used to make the statements, particularly for the question which was used to understand the level of success of the surveyed relationships. The first phase study identified different criteria, presence of which in a relationship would portray the relationship as a successful one, e.g. 'reduced costs', 'increased volume of business', 'satisfaction with



risk reward shared', 'satisfactory safety performance', 'production targets are achieved' etc. Statements were made using these criteria to measure the level of success of the relationships. Some examples of these kinds of statements are: " The \*\* relationship has been successful in reducing the costs of completing task", "In \*\* relationship projects are completed in time", "In \*\* relationship there are satisfaction with risk reward or profitability shared among collaborative partners", "In \*\* relationship there is satisfactory safety performance" etc. \*\* In the questionnaire the name of the respective relationship was included.

#### *9.3.1.5 Question format*

The questions and attitude statements were made as simple as possible. They were worded in such a way that they are understood by the respondents. In wording the questions and statements consideration was given to minimise abstract terms or jargon which might create confusion or ambiguity. In addition to that, length of the questionnaire, spacing between questions were also considered in formatting the questionnaire.

In the attitude question, positive and negative statements for the same topic were mixed together to avoid response set. A response set is the tendency to answer all questions in a specific direction regardless of the question's content ( Baily, 1978). For example question number 5 asks about the effects of presence of trust in collaborative relationships. Different statements were made to articulate the effects of presence of trust in a collaborative relationship. Some of them were positive effects e.g. 'High levels of trust between alliance partners will reduce the fear of opportunistic behaviour'. Again some of the statements were made to express negative effects e.g. 'High level of trust in an alliance will increase vulnerability'. These types of statements were mixed together to avoid response set. Each statement of the attitude questions was made in such a way that it did not create a double-barrelled question. A double-barrelled question is one that contains two or more questions. The problem of that type of question is that a respondent might agree with one aspect but disagree with other aspect. In the questionnaire clear and



sufficient instructions were given to help the respondents in understanding and completing the questions. Mainly two kinds of instructions i.e. transitional and question answering instructions were provided in the questionnaire. ‘Question answering instructions’ were provided to help the respondents in completing the questions. Transitional instructions were provided to introduce different sections of the questionnaire. For example, the last section of a questionnaire was customised for the specific relationship of the respondent concerned, and the respondents were instructed to consider only his or her ‘own relationship’ in answering that section. A sample questionnaire can be seen in Appendix 4.

### ***9.3.2 Distribution of the questionnaires and their follow-up***

#### ***9.3.2.1 Cover letter***

After the questionnaire had been constructed the next step was to write a cover letter in order to explain the purpose of the survey. To overcome any resistance or prejudice the respondents might have against the survey the covering letter identified the sponsoring organisation, explained the purpose of the study and importance of their responses and assured the confidentiality of their responses. The name of the respective contact managers and the arrangement that had been made were also mentioned to increase respondents’ motivation. Contact details including telephone, e-mail and postal address of the researcher were provided in case any prospective respondent wanted to make contact. All the letters were written on University notepaper to increase the impact.

#### ***9.3.2.2 Mailing the questionnaire***

As mentioned earlier a complete list of prospective respondents was created for each of the five selected collaborative relationships during selection process. A table was created in the computer with the prospective respondents’ names and their full mailing addresses. The table was used to print mail-merge documents of covering letters and address label of the prospective respondents. A customised questionnaire was sent to the respective person along with the covering letter and a pre-paid self-addressed envelope. Every effort was made to achieve a high response rate. For



example, all the prospective respondents were made aware of the survey before sending the questionnaire by the contact managers. In some cases the questionnaires were sent to the prospective respondents via their internal mail with the expectation that it would increase the response rate. The respondents were requested to return the completed questionnaires within four weeks time. Within that time about 38% completed questionnaires were received. To increase the response rate, respondents who had failed to return the questionnaire were reminded by e-mail and where possible by telephone. Duplicate questionnaires were also sent to the persons who did not receive the questionnaire in the first place or had lost it. In some cases the prospective respondents were reminded a third or even fourth time, however, with cordial manner. All the initiatives paid off at the end, and the response rate reached 61%. Although, the response rate of the questionnaire reveals the importance of a multiwave follow-up, it is argued that it may reduce the quality of responses, because respondents who do not respond the first time might be less likely to take the study seriously and thus may unreliably or incompletely fill-in the questionnaires (Nachmias and Nachmias, 1982). However, apparently in our survey we did not encounter this problem. One of the possible reasons may be that we tried to make the respondents understand the importance of their responses.

## **9.4 Data Management**

All studies, no matter what type of study design is used, require a high standard of accuracy in storing research data, because a great deal of internal validity depends on the accuracy of data processing (Anderson *et al*, 1996). To achieve this, great care was taken in coding data appropriately, entering data into database, conducting range of visual checks, making necessary correction and checking for duplicated or incorrect records in key fields before performing analysis of the data. This section covers some important aspects of data management including database design, data entry, missing values and advantage of using connectivity software.

### **9.4.1 Database design**

A relational database was designed to facilitate data entry and data analysis using the



Microsoft Access, data management programme. The issues that were considered in designing the database were, data type (e.g. numeric, alphabetic), data size or maximum allowable length, permitted categories, coding to identify sub-categories of explanatory variables, validation of permitted values and codes to identify missing data. Although database design was time consuming, it forced us to address many of the essential data management issues before the data were entered and also contributed to minimising data entry errors. Value labels and variable labels were coded into the database to ensure that all statistical output is self-documented.

#### ***9.4.2 Data entry***

Using self-coded questionnaires to collect the data and the development of relational database made the data entry simple. The data was thoroughly checked before entering into the database and errors that required correction were dealt with as soon as possible. Numeric codes were used for different category and sub-category of the data as statistical packages and spreadsheets are primarily designed to handle this type of information. A data entry form was created to enter the data which was connected with different tables where the entered data were stored. In the table each data item appeared in separate column. After the data were entered into the database, visual checks of printed data were performed to ensure any obvious errors or illogical values had not occurred.

#### ***9.4.3 Missing values***

‘The most acceptable solution to the problem of missing value is not to have any’ (Youngman, 1979). However in the present study it was not possible to have the data set without any missing value, although they were minimal. The missing values were dealt properly during coding, data entry and analysis stages. Technically there is no particular problem in coding data as missing value. Software normally has one or more ways of dealing with missing data when performing analysis. There simply needs to be a single code which is used for missing data and only for missing data (Jennings, 1995). In the SPSS data base missing values were coded as non-



numerical missing code ‘.’ so that they could not be inadvertently incorporated into analyses.

## **9.5 Analysing and Interpreting the Data**

After data had been collected and entered into the computer the next step was to analyse and interpret the data. Analysis is necessary because, generally speaking, data in their raw form do not speak for themselves. The messages stay hidden and need careful teasing out. The process and products of analysis provide the bases for interpretation (Gilbert, 2001). It is often the case that, while in the middle of analysing data, ideas of interpretation arise. Three computer systems were used for data entry and analysis purposes. The scores were entered on Access, a data management programme. Preliminary analysis of data e.g. inversion of the scores, counting missing values, classification of respondents, grouping of responses were performed by the Access programme as well. Later the data was exported to a statistical programme SPSS and a spreadsheet programme Excel to perform suitable statistical tests, making tables and graphs.

It must be mentioned here that some of the responses of phase 1 and phase 2 studies were not analysed and used for this thesis. This is because it was felt that they would not add any value to the answers of the research questions of the PhD study. However they may be used to write some paper in near future.

The aim of the following section is to provide an outline on the rules, procedures and statistical techniques used for analysing and interpreting data.

### ***9.5.1 Calculation of total and average value***

For the study two types of data were collected, nominal and ordinal data. The nominal data was collected to group the respondents according to their job levels, company types, working places and alliance experiences. Analysis of those nominal data were simple, just frequency counts and presentation of the results in tables or graphs in percentage form. However most data were ordinal, which were collected



to measure respondents' attitudes on different issues related to trust. A five points rating scale was used to measure respondents' attitude i.e. 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree, and 5 = strongly disagree.

A respondent's opinion/attitude for an issue was measured by the total score, which is the sum of the scores of all the identifiers (statements) of that issue. Total value and average value were calculated by adding the scores of all the respondents and making an average of that score. At this juncture, it needs to be mentioned that the scale which was used in measuring respondents' attitudes in the questionnaire, the numerical values were ordered such a way that smaller number referred to higher levels of agreement and larger number to lower level on the continuum. That is 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree, and 5 = strongly disagree. But for the convenience of the interpretation of data it was decided to invert all the scores of the second phase study to put maximum weight on 'strongly agree' option and minimum weight on 'strongly disagree' option of the continuum scale before performing the analysis.

Following formula was used for the inversion of the scores:

$$\text{Inverted score} = 6 - \text{score (for a score greater than zero)}.$$

#### **9.5.2 Statistical analysis of the collected data**

The aim of the study was to understand the way in which people in the oil and gas industry think about the role of trust in collaborative relationships in the industry. In order to do this data was collected from the representative sample of the population and analysed to make inferences. Statistical procedures play an integral part in understanding what, if any, patterns there are in the data and if the data support or discredit whichever theories are under investigation. For the present study, statistics were used for two reasons, presentation of data in summarised form which is referred to as descriptive statistics, and to make estimates about a population i.e. statistical inference (Anderson *et al*). In descriptive statistics data from all the attitude questions were summarised in terms of their frequency, total count, average



scores, and standard deviation and presented in tables and graphs. The following statistical techniques were used to make inferences about the sample of population of UK upstream oil and gas industry.

#### *9.5.2.1 Friedman's test*

Friedman's test, a non-parametric test, was performed using SPSS to estimate mean ranking of the indicators (statements) as well as to test the significance of ranking. Friedman's test ranks the scores on the variables (indicators) for each respondent separately, and calculates the mean of these rank scores for each variable (Foster, 1998). The mean ranking distinguished most preferred indicators from least preferred indicators while taking consideration of their obtained scores. In other words, Friedman's test ranking helped us to understand which factors (statements) were considered important which were not by the respondents. It also tests whether the ranking is significant, in other words whether the scores of different indicators vary significantly from each other (Henry, 2000).

#### *9.5.2.2 Analysis of Variance*

The respondents were divided into different groups, and analysis-of-variance (ANOVA) tests were performed to see whether there were differences in their opinions between groups. An analysis-of-variance test compares means of different groups to assess whether the groups vary significantly. It is called analysis of variance because the procedure works by comparing the spread between the group means with the spread of values within each group. If the spread of the group means (often described as between-groups sum of squares) is larger than is expected from the spread of data within the groups (the within-group sum of squares) then this indicates the means differ (Wright, 1997).



### *9.5.2.3 Cluster Analysis*

Cluster analysis was performed to investigate whether the respondents considered that the different identifiers (statements) used in the questionnaire fall into groups. Clusters are groups of objects linked together according to some rules. The goal of clustering is to find groups containing objects most homogeneous within these groups, while at the same time the groups are heterogeneous between themselves as much as possible. There are two main approaches in cluster analysis: hierarchical and partitioning methods of clustering data (Gordon, 1981). Hierarchical approach in clustering variables (statements) was followed for the study. This procedure attempts to identify relatively homogenous group of cases (or variables) based on selection characteristics, using an algorithm that starts with each case (or variable) in a separate cluster and combines clusters until only one is left (SPSS BASE 9.0 User's Guide). In this clustering technique the data are not separated into classes in one step. Rather they are first separated into a few classes, each of which is further divided into smaller classes, and each of these further partitioned and so on until terminal classes are generated which are not further subdivided. A hierarchically nested set of partitions can be represented by a tree-diagram, or dendrogram, such as the one shown in Figure 11.7 of chapter 11.

### *9.5.3 Steps taken to minimise measurement errors*

Measurement procedures are used by researchers to assign numerals, numbers, or scores to properties. Once scores are assigned, they can attribute differences in the score obtained during repeated observations to two sources. First, the extent to which the variables exhibit real differences in the properties being measured. Second, the extent to which the measure itself or the setting in which measurement takes place influences the scores. Differences in measurements that are due to anything other than real differences are termed as measurement errors (Nachimas and Nachimas, 1982, 1992). Several sources of measurement error have been mentioned in the literature.



First the scores obtained may be related to an associated attribute, that is, an attribute that we did not intend to measure. For example, respondents may require a certain level of intelligence and social awareness to offer an answer for a question measuring the factors which enable trust in a collaborative relationship. The responses of individuals to this question would, in effect, reflect real differences in their beliefs, but also the effect of differences in intelligence and social awareness. To minimise this kind of errors we selected respondents who had been involved in collaborative activities directly and had acquired insights from their experience in the area. Second, measurement error may occur from differences in temporary conditions, such as health or mood that might affect a person's response to the questionnaire which was out of our control. Third, differences in the administration of the measuring instrument, e.g. poor quality questionnaire. We took every effort to make the questionnaire perfect in terms of its structure, layout, and wording and relevant subject matter. Fourth, measurement errors also occur during processing of data. As mentioned earlier, different measures were taken including visual check of raw data, checking of computer generated data sheet for incorrect entry, double entry or missing entry to minimise this kind of error in our study. The last major source of distortion could occur for the present study through incorrect interpretation of qualitative data. Extra care was given in interpreting the qualitative data to minimise this kind of error. Supervisors were frequently consulted and their advice was sought in case of difficult situation.

Three kinds of information must be evaluated before deciding whether or not data can be collected by mail or self-administered questionnaire (Bourque & Fielder 1995). These are literacy level of the targeted population, the motivation level of the targeted population, and whether characteristics of the research question make it amenable to data collection using a mail questionnaire. For this survey the respondents selected from three different job levels i.e. senior managers, middle managers, and technical specialists who have experience and knowledge in the area under investigation as well as expected level of literacy to respond the questions. Again before mailing the questionnaire we had meetings with different groups of the



respondents where purpose of the study, subject matter of the study and possible benefits for the companies involved were discussed thoroughly. The selected respondents were informed beforehand by their company representative. All those initiatives created a positive impact on the prospective respondents in terms of increasing their motivation and making them ready in responding the questionnaire.

No data collection method is perfect. Each method has certain advantages but also inherent limitations. Although a number of initiatives was taken in the second phase research to minimise errors in data collection and analysis by adopting a proper research design, using valid and reliable measuring procedures, replications, checking of raw and process data, these provide no absolute guarantee that all error has been eliminated. Again absence of interviews may also have undermined to some extent the finding of this study.

The following chapter gives a profile of the five relationships which were surveyed for the second phase study.



## CHAPTER 10

### PROFILES OF THE RELATIONSHIPS

#### 10.1 Introduction

Five working relationships were selected for the second phase study. Each relationship varies from the others substantially in terms of the number and nature of companies involved. However, all of the relationships are engaged in the UK offshore oil and gas business. The intensity of association (collaboration) between the companies in the different relationships also varies, and depending on the type of relationship they fall into two broad categories. In the first category, the involved companies have long established partnering and alliancing types of relationships and they collaborate in a number of projects. We have seen in chapter 3 partnering and alliance is defined as a close, long-term, mutually beneficial agreement between two or more partners in which resources, knowledge, and capabilities are shared with the objective of enhancing the position of each partner. In the second category, although the involved companies have work together for a long time, the term 'partnering and alliancing' is not used here, and the contracts have been extended after a certain period of time.

Names of the relationships and companies involved are not mentioned in this thesis because of ethical reasons, as it was promised during survey that their name or any identity would be kept secret in any form of reporting of the study. There were in total 21 companies including four foreign companies in the five relationships. The sizes of the companies involved vary from very big world wide operators to medium sized localised companies. The population in the oil and gas industry as whole contains a mix of ethnic and cultural backgrounds. Our sample contains companies which represent this mix.

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## 10.2 Profile of Relationship A

A specific oil field was strategically important to two operators for its location. Rather than competing for the field, the companies decided to combine their strength and work co-operatively to develop the new field using an integrated team from both companies. The two partners had complementary skills, one had its global expertise in reservoir engineering and management while the other company was experienced in managing North Sea gas infrastructure. The joint company started with a new name where key people were seconded to work from the parent companies. Having been inspired by the Cost Reduction Initiative for the New Era (CRINE) initiatives the newly formed Operator Company introduced non-adversarial contractual arrangements for the contractors.

Thus the relationship 'A' a well engineering and operation alliance (WEOA) emerged in March 1998. Initially there were five contractors and the operator in this collaborative relationship. Another contractor, which was involved in other contracts with the operator since 1997, joined the alliance in 2001. Hence, the alliance has brought seven companies together who have different unique expertise and skills.

Company one is involved in data acquisition and for that they use mud logging and wire line (electrical line). Company two is an expert in well construction including directional drilling, directional survey, motor jars & adjustable stabilisers and coring. Company three is a part of a group of companies which are involved in various types of oil and gas related business in the UK. The company is responsible for cementing and well servicing activities for the alliance projects. Company four is responsible for drilling rig services including rig operations, rig maintenance and management, engineering services, cuttings processing and cleaning etc. Company five is accountable for platform wellheads, Xmas trees, platform tieback systems, and inventory management. Company six is responsible for drilling, casing, completion tubular, crossovers and flow couplings. Finally, the operator takes responsibility for managing the completion services for example packers, safety valves, downhole gauges, carriers and installation, liner hanger systems, Nitrogen



services etc. Although the majority of the services come from the alliance members, they are managed by the operator's internal team.

### **10.3 Profile of Relationship B**

An oil giant and a shipping company form relationship 'B', which has been in existence since 1993. The scope of the relationship involves management of a Floating Storage Unit (FSU) including crewing, operations management, logistics support, engineering and conversion services on behalf of the oil major. The shipping company's corporate office is based in the UK and is a very long established independent company. The company has varieties of interests world wide through a number of subsidiary companies. The company is involved in accommodation vessels, floating production and storage systems, marine project management, and platforms business. The company is a provider of management services to the offshore industry including crewing, operations management, logistics support, engineering and conversion services and provision of jack up platforms and accommodation support facilities. Within the FSU asset there are numbers of other alliance contractors for the operator, with whom the shipping company also works closely. According to one of the senior managers over the time, the scope of the relationship has been extended with increased trust and confidence on both sides. This relationship may be considered as a partnering and alliance type relationship.

### **10.4 Profile of Relationship C**

A giant operator and two major contractors are involved in relationship 'C'. The operator is a foreign company and is involved in world wide oil related business. Out of the two contractors, one is involved in the following business:

- Project management- Planning and control, work management system
- New field engineering- Greenfield engineering, conceptual studies (topsides & sub sea), front (topsides & sub sea) detailed engineering (topsides & sub sea).
- Mature field engineering- Brown field engineering, plant changes, field life extension.



- Integrated services- Integrated maintenance execution, maintenance planning and management, process/production operations, logistics etc.
- Specialist workshops and support- Pump & compressor maintenance, overhauls and repair, valve and wellhead repair and overhaul, fabrication and dimensional control and survey.

The other contractor is involved in conceptual Engineering specialist services, Designing engineering services, Fabrication, Floating Production, Storage and Offloading systems, and Topside design and maintenance services business. Relationship C is a partnering and alliance type relationship, which has evolved over the last 12 years between two contractors and an operator. An engineering management services contract was first established in 1989 between the contractors and the operator. In 1990 another maintenance, modification and services contract was made between them. In 1997 the engineering services contract and maintenance, modification and services contract were combined to form an integrated services contract through a joint venture company (JVC). The vision of the JVC was to reduce operational interface whilst creating cost effectiveness through 'steady state' working. The JVC provides engineering and maintenance services to the operator's nine platforms in the North Sea.

The two major contractor rivals chose to collaborate and formed a new joint venture company in response to an unexpected reorganisation by their client Operator in the 1990s. At that time the Operator embarked on a strategy of downsizing its core employees base and outsourcing non-core business to strategic contractors. Again the Operator's existing business unit (OEBU) which was surveyed for the study was formed by combining its two separate business units in 1999. The scope of work of the contractors joint venture company which is owned equally (50/50) by the two contractors' limited to the OEBU.

The scope of the collaborative relationship between the contractors and the operator are as follows:



*Offshore* - Maintenance execution, supervision and management. Services provision (deck crew and helideck crew), materials and stores manning and management. Construction execution and management for platform modifications and major projects. Approximately 600 people are involved in offshore collaborative activities.

*Onshore* - Engineering and maintenance management, procurement. Sub-contract management, engineering services. Approximately 350 people are involved in onshore collaborative activities. Recent contact (2003) indicates that collaboration activities have been expanded in number of new areas and also another contractor company has joined in the relationship.

### **10.5 Profile of Relationship D**

Relationship D is rather different than the other four relationships. In 1997 three contractor companies agreed to work together for operations management and services contracts.

Out of the three contractors one of the contractors is involved in engineering, fabrication, heavy lift and pipe laying and project management for oil and gas industry world wide.

Another contractor provides specialist services to the oil and gas industry. The company is a leading supplier of project management, consultancy and project facility management services to the industry. The company provides computer aided design (CAD) applications services to its customer through reliable network access. It has around 250 staff.

The third company is involved in condition monitoring systems, corrosion control services, corrosion engineering, vibration monitoring services and corrosion management services. The company provides unique advanced technology solutions



incorporating their proprietary corrosion management and condition monitoring technology, expertise and mentor software. The contractor is an UK based company but has world wide contracts.

In 2001 two companies were taken over by the third collaborative company. The take over created a strange situation, where companies' statuses were changed but the people were still the same. People working in separate companies were rivals before the take-over. In the newly formed companies they became colleagues and were obliged to work together for a common purpose. The survey was conducted during the transition period. From recent communications (in 2003) it is understood that the scope of the relationship has diminished following the merger, as they work as a single company now.

#### **10.6 Profile of Relationship E**

Two companies were involved in relationship 'E' of which one was a client and another was a contractor. The client is a major Operator company participating in the upstream and downstream oil and gas business. The Operator's recent merger with another Operator has made them one of the largest Operators in the world. The client's headquarters are based in France and there is a strong French culture present throughout the organisation.

The contractor's production services are part of a greater contractor group with the core business being the provision of support to operators on existing oil and gas facilities both onshore and offshore. Much of the contractor's production services business is controlled from Aberdeen, UK, but offices exist in key areas globally.

The contractor originally secured a 5-year engineering and construction services contract with the Operator back in 1994. Initially the scope was limited to downstream engineering and campaign based construction on a North Sea Assets and an onshore terminal. Gradually the scope of the contract increased together with



the volume of work and this culminated in an exceptionally busy period during 1998 to 2001.

The contract was competitively bid again in 1999 and another five years contracts were secured by the contractor. In addition to the above, a separate five year contract was also secured in November 2000 for the provision of operations and maintenance support to two platforms. The contract predominantly is geared towards the provision of operators and technicians but scope also exists for the provision of onshore technical support particularly in the area of Maintenance Engineering.



## CHAPTER 11

### ANALYSIS OF DATA OF THE SECOND PHASE STUDY

#### 11.1 Introduction

One of the main purposes of the first phase study was to understand the critical success factors of collaborative relationships in the UK upstream oil and gas industry. The study revealed that ‘presence of trust’ was perceived as the most important factor in making a collaborative relationship successful. Respondents from all types and sizes of companies as well as from all job levels stressed the importance of trust in collaborative relationships. Having identified presence of trust as the most important success factor, it was decided to undertake an in-depth study on trust with the following research questions.

- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, mean when they talk about trust? What are the components of trust in oil and gas industry?
- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, perceive as the effects of presence of trust in relationships?
- What do people, who work in collaborative relationships in the UK upstream oil and gas industry, consider needs to be done to maintain or increase levels of trust in relationships?
- What is the relationship between the perceived level of trust within an alliance and its perceived level of success?

A detailed questionnaire was developed involving five factual questions and seven groups of attitude statements. A sample questionnaire is shown in Appendix 3. The factual questions were used to collect information about the respondents and their companies which helped to group the respondents into different categories. The attitude statements were used to obtain respondents’ opinion on the different aspects



of trust that were under investigation. This chapter deals with the analysis of responses of the second phase study along with interpretations of the results.

### 11.2 Respondents' Demography

The second phase study was conducted to collect information on the perceptions of trust in collaborative relationships in the UK upstream oil and gas industry. People who are involved in collaborative relationships in the industry were defined as the population of interest for the study. Therefore, the respondents were selected from five different alliances or similar relationships from the industry.

#### 11.2.1 Response rate

As mentioned above five alliances or similar relationships were selected to collect data/information on the perception of trust. Altogether 163 questionnaires were sent by post to prospective respondents working in the five relationships. 101 respondents returned the questionnaire. However it was not possible to extract complete information from one of the returned questionnaires, which was excluded from the analysis. That is to say, out of 163 questionnaires 100 completed questionnaires were received, which made the response rate over 61%. Response rates for each of the five relationships were also calculated separately and these are shown in the table below. It should be mentioned that because of confidentiality the relationships can not be identified by their real name and hence they are designated as A, B, C, D, and E.

Table: 11.1                      Questionnaire response rate of different relationships

Name of the Relationship	No of questionnaires distributed	No. of completed questionnaire received	Response rate (%)
A	30	18	60
B	15	6	40
C	74	44	60
D	17	14	82
E	27	18	67
Total	163	100	61

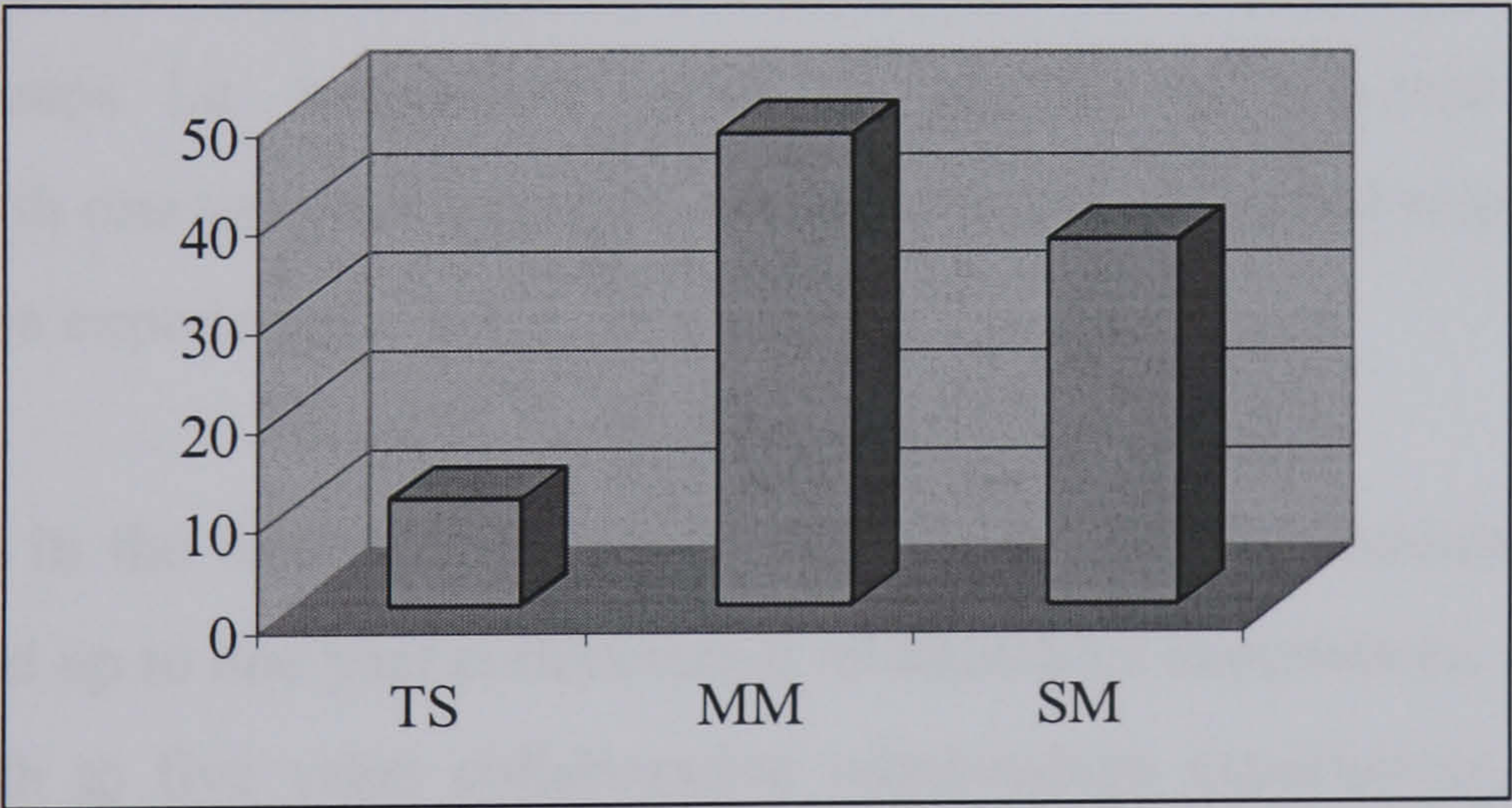


As mentioned earlier, in developing the questionnaire provisions were made to collect information on the respondents' job levels, company types, working place and experiences of alliances. Analysis of this information is given below.

**11.2.2 Respondents' Job levels**

It was considered that people working at different levels of management might have different views on the issues under investigation, as they usually acquire different types of experiences and deal with different kinds of people at their work. Respondents were requested to indicate their job title at the bottom of the questionnaire. Out of 100 respondents, 96 respondents indicated their job titles. Interestingly, people who did not mention their job title also turned out to have the lowest score on trusting attitudes category and fall

Figure 11.1 Respondents' job levels



into the non-trusting category, which is discussed latter in this chapter. Respondents' job titles were put into three categories i.e. Senior Managers (SM), Middle Managers (MM) and Technical Specialists (TS). In each of the three groups, there are people with a wide variety of job titles. Respondents like Asset Managers, Business Managers, FSU Managers, Heads of Asset Integrity, Operation Managers, Product Managers, ISC Team Leaders, Directors were placed in the Senior Managers (SM) group, while in the Middle Managers (MM) group there were Account Managers, Contract Administrators, Deputy Asset Managers, Health and



Safety Co-ordinators, Lead Process Engineers, Maintenance Supervisors, Project Managers, Quality Managers, Rig Managers, Senior Contract Engineers and Shutdown Co-ordinators. Respondents having job titles such as Drilling Engineers, Field Engineers, Inspection Engineers, Contract Engineers, Cost Engineers, Corrosion Engineers, Instrument Engineers were put into Technical Specialist (TS) category. Figure 11.1 presents the number of respondents in each group.

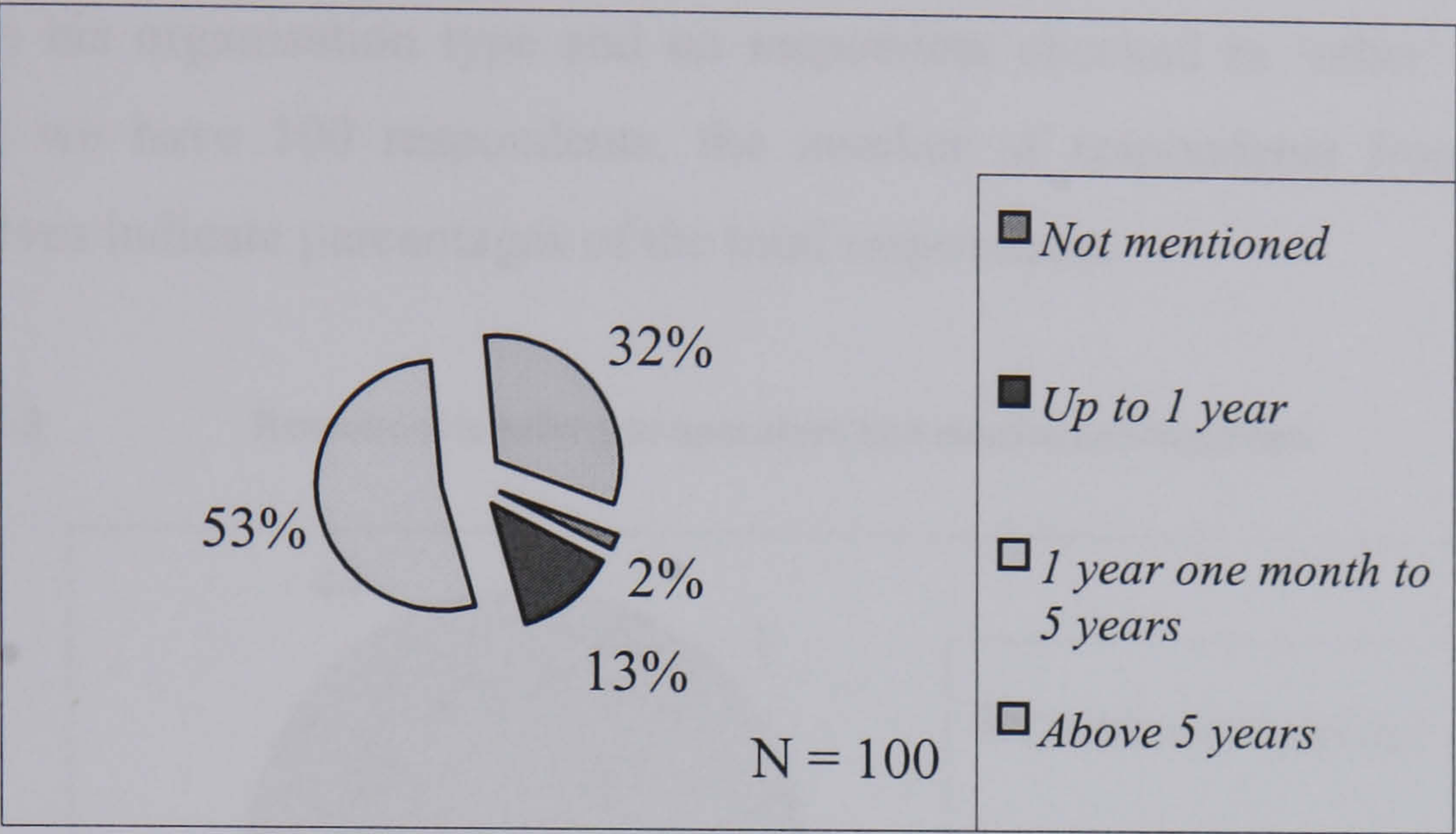
### ***11.2.3 Respondents' involvement with collaborative relationships***

Respondents were requested to mention their length of working experiences in collaborative relationships in terms of months and years. Frequency count and cross tab queries were made to analyse the responses. Preliminary analysis of the responses suggests that the respondents had a wide range of alliance or similar types of collaborative relationship experiences with a minimum of six months to a maximum of 17 years experience of either managing or working in alliances or similar relationships. Depending on the experiences, the respondents were divided into three groups i.e. respondents with six months to one-year experience, respondents with one year one month to five years experience, and respondents with above five years experience.

It can be seen in the following pie chart that out of 100 respondents 13% of the respondents had up to one year collaborative relationships experiences, 53% had one year one month to five years collaborative relationships experiences, 32% of the respondents had above five years experiences. However 2% of the respondents did not answer this question.



Figure: 11.2                      Respondents' collaborative relationship experience



Cross tab queries was made using Microsoft Access to examine the length of collaborative relationships experiences of the respondents working at different levels of management. The following table shows alliance experiences of respondents working at different job levels.

Table:11.2                      Respondents' collaborative relationships experiences and their job levels

Alliance involvement	Senior Managers	Middle Managers	Technical Specialists
Up to 1 year	4	7	2
1 year to 5 years	19	23	9
5 years and above	13	17	1

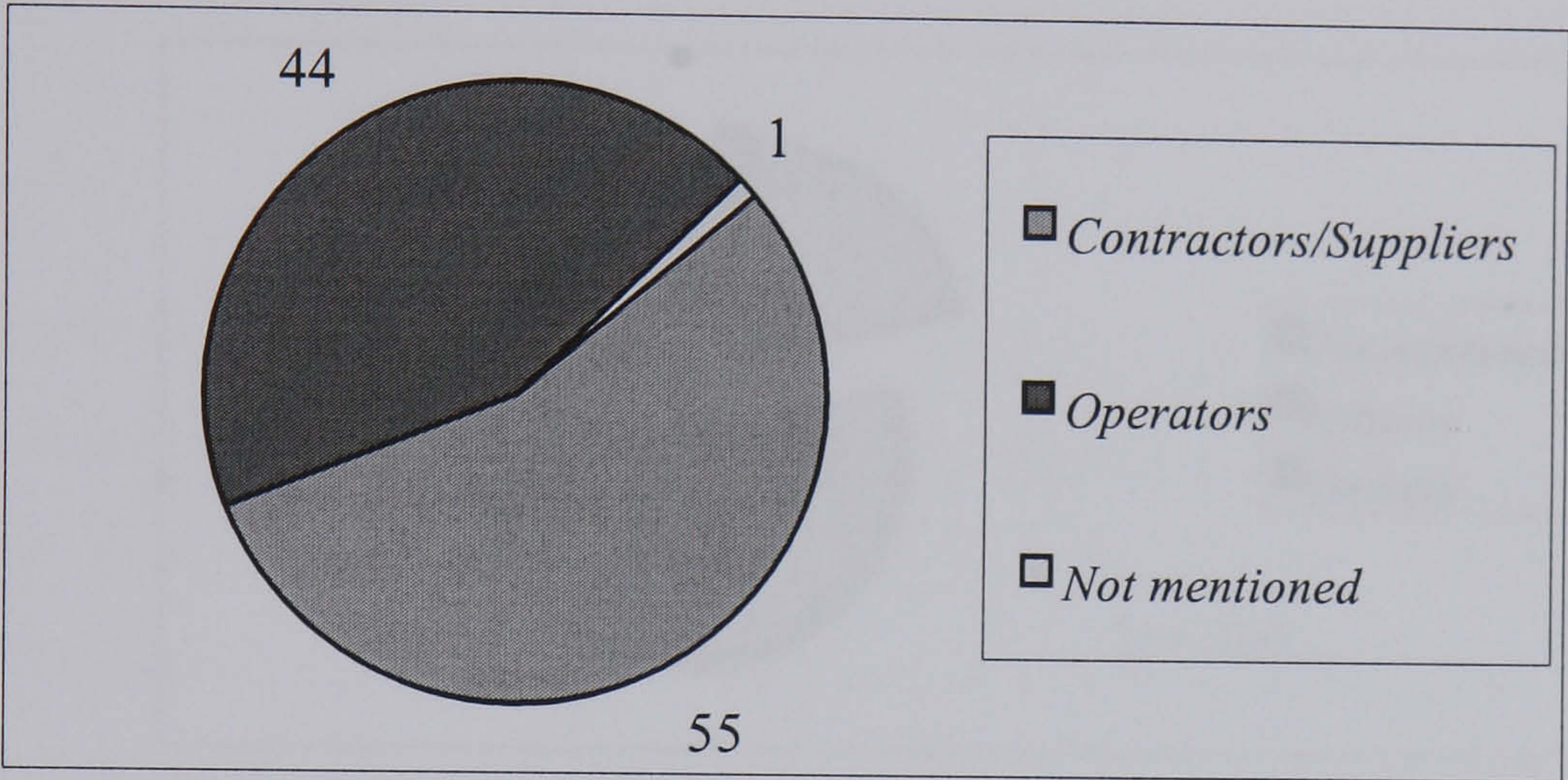
11.2.4 Respondents' organisation types

Respondents were asked to indicate the types of organisations to elucidate their affiliated organisations. They were given three options to indicate their organisation types, 'operators', 'contractors/suppliers' and 'other'. In the UK oil industry mainly operators and contractors/suppliers are involved in the collaborative relationships. However, if any of the respondents was affiliated with another type of company s/he could check the 'other' box. The following graph (Figure 11.3) illustrates respondents' affiliations with different types of organisations. We have 100



respondents, of whom 55 respondents belong to contractors/suppliers, 44 belong to operators (the oil companies e.g. Shell, BP, Total) and one respondent did not mention his organisation type and no respondent checked in ‘other’ box. As, by chance, we have 100 respondents, the number of respondents from each group themselves indicate percentages of the total respondents.

**Figure 11.3**                      **Respondents belong to operators and contractors/suppliers**



Cross tab analysis was performed to examine respondents’ working levels in different types of organisations. As can be seen in Table 11.3, out of 44 respondents from operators 15 are middle managers, 20 senior managers and seven technical specialists. In case of contractors/ suppliers, 33 respondents are middle managers, 16 senior managers, and four technical specialists. From both the groups two respondents did not mention their job levels.

**Table: 11.3**                      **Respondents organisation types and job levels**

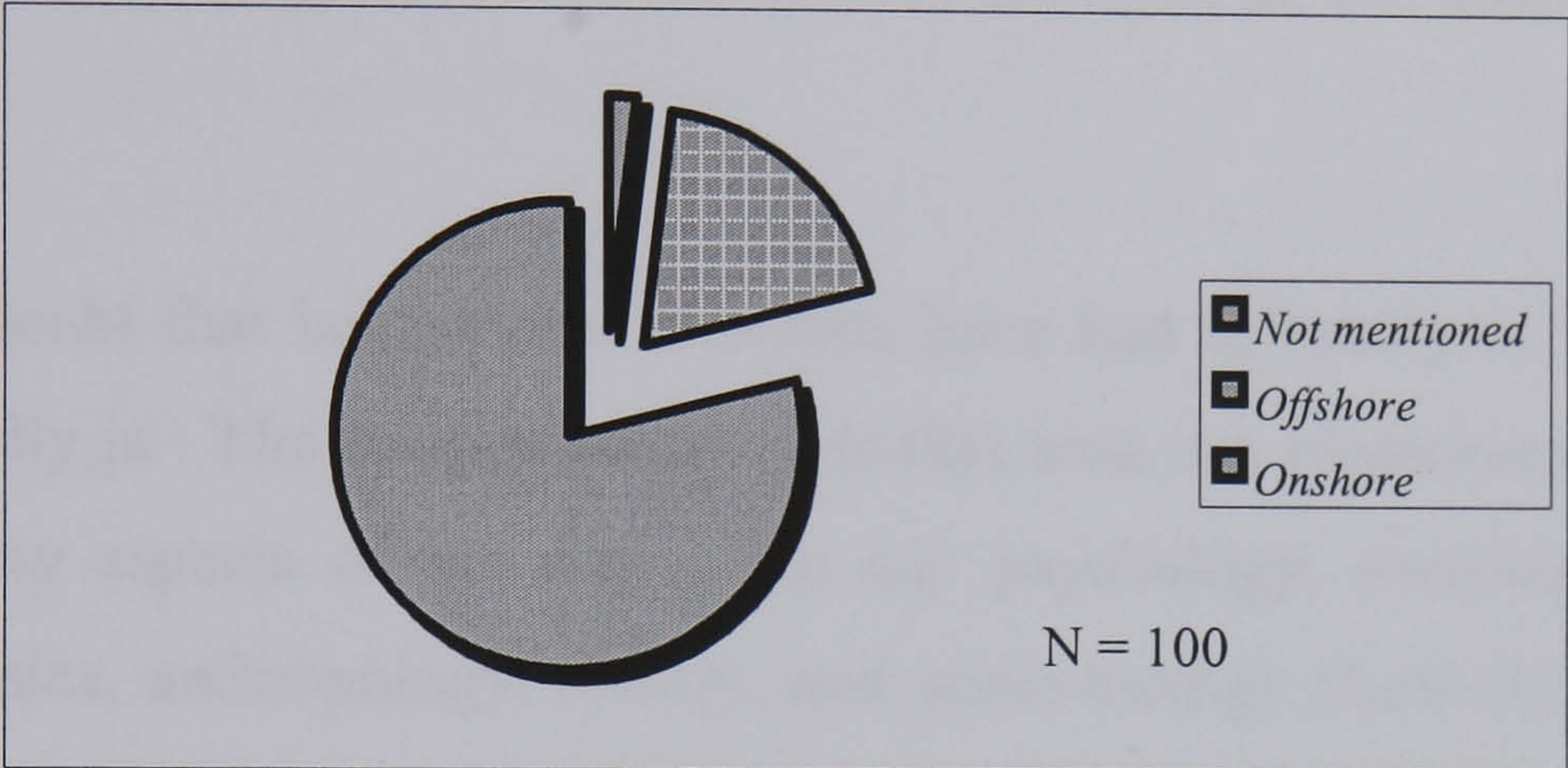
Organisation Types	Middle Managers	Senior Managers	Technical Specialists	Not Mentioned
Contractors/ Suppliers	33	16	4	2
Operators	15	20	7	2



11.2.5 Respondents’ working environment

UK upstream oil and gas industry relies on both onshore and offshore activities. It was thought that perceptions on trust might vary among the people working in the two different environments.

Figure 11.4 Respondents working at offshore and onshore environment



Therefore, in the questionnaire the respondents were requested to indicate their normal place of work. The responses were analysed in Access and the results are presented in figure 11.4. Out of 100 respondents 79 respondents normally work onshore and 19 respondents work offshore while two respondents did not mention their normal working place.

Responses were further analysed to identify the number of respondents from operators and contractors working offshore and onshore and the results are presented in the following table.

Table:11.4 Respondents from different organisations working at offshore and onshore

Working Environment	Operators	Contractors/ Suppliers
Offshore	12	7
Onshore	31	48



## **11.3 Meaning of Trust in Collaborative Relationships in the UK Oil and Gas Industry**

### ***11.3.1 Introduction***

One of the objectives of the study was to understand what people, who work in the UK upstream oil and gas industry mean when they talk about trust, and what are the components of trust in oil and gas industry. That is, the types of trust prevalent and the motivations of putting trust in collaborative partners in the UK oil and gas industry.

There is little doubt that behavioural scientists have had difficulty in agreeing on what trust actually is. The reasons behind it is that trust is a phenomenon which is attached to many aspects of our social life e.g. psychology, sociology, political science, economics, anthropology, history, and socio-biology (Lewicki, 2000) and people see it through their own disciplinary lens and filters. Considering the abstract and relative nature of its form, it was recognised that it may not be easy for the respondents to answer or make a comment on a question like ‘What do you mean when you speak or think about trust in working relationships?’ Rather, it was considered better to ask the respondents’ opinions on a set of possible reasons why they might trust other people or institutions. When we analyse different definitions of trust, we see they either suggest some kind of attributes of people which make them trusted or suggest some kind of basis on which people trust each other. This may be competence in performing certain jobs, or common cognition or common characteristics.

Altogether 18 statements were made which stated different attributes and/or gave reasons why people could be trusted in a collaborative relationship. In fact each statement illustrates ‘a type’ of trust and the 18 statements represent 13 types of trust. Ideas for making the statements on different types of trusts were gathered by reviewing related publications and from the first phase study. With a view to measuring respondents’ attitudes on different types of trusts, all of the 18 statements



were put on to a Likert type scale and the respondents were asked to indicate intensity of their agreement or disagreement with the statements on a five point range. The respondents were asked to choose one of the five options on a continuum scale starting from 5 to 1, where 5 denoted strongly agree and 1 denoted strongly disagree. Apart from scoring the statements, respondents were also requested to mention any other reason for trusting people they could think of, but nobody offered any opinion of their own.

**11.3.2 Score of different types of trust**

Initial analysis of the responses shows that the 100 respondents provided 1796 responses out of possible 1800 responses. One respondent did not score all the 18 statements and therefore, we have 4 missing values which were dealt with in all the calculations. Analysis was done to understand the distribution of the scores of 18 statements describing 13 types of trust i.e. Contractual, Competence, Cognitive, Process-based, Strong form, Semi strong form, Weak form, Institutional, Normative, Deterrence-based, Goodwill, Calculative and Characteristic based trust. The following table presents descriptive statistics of the scores of 18 statements, which were calculated on the basis of the obtained scores from 99 respondents. One of the respondents was not included in the calculations because of his incomplete response. As can be seen in Table 11.5 the average scores of different types of trust over the respondents vary a great deal, since we have maximum average score of 4.44 and the minimum average score of 1.80. This finding suggests that in the UK oil and gas industry some types of trusts are recognised more than some other types of trust.

**Table 11..5                      Descriptive statistics of average score of different types of trust**

Number of statements	Minimum Score	Maximum Score	Mean
18	1.80	4.44	3.12



**11.3.3 Ranking of statements**

As the descriptive statistics indicated, the significance of different types of trusts is not the same to the people in the industry. Analysis was done to rank different types of trust depending on their obtained score. Friedman’s ranking tests were performed to distinguish ‘most considered type of trusts’ from ‘least considered type trusts’. The Friedman test ranks the scores on the variables (statement of trust) for each respondent separately and calculates the mean of these rank scores for each variable (Foster, 1998). It also tests whether the ranking is significant, in other words whether the scores of different types of trusts vary significantly from each other. The Friedman test takes account of only those cases (respondents) who answer all related questions and excludes the cases where there is a missing value during calculation (Green, 2000). Likewise, the tests included here only those respondents who had scored all the 18 statements in relation to the types of trust and excluded the respondent who did not score some of the statements in the question. Test statistics of the analysis are presented in Table 11.6 which shows the ranking of the statements as highly significant ( $p = .001$ ).

Table: 11.6

Test Statistics for Friedman’s Test

N	99
Chi-Square	792.469
df	17
p	0.001

Table 11.7 presents ranking of statements on different types of trust in descending order. Type of trust is written in brackets along side each statement. It is evident that people gave preference to some types of trusts over others, as the mean rank varies from highest 15.77 to lowest 3.87. The statements stating different types of trust were split into three groups on the basis of their mean rank scores. The group with score greater than 12 was designated high priority and those with scores between 12-8 and less than 8 were designated middle priority and low priority respectively.



Table: 11.7

Ranking of statements stating different types of trust

Sl. No.	Statements stating different types of trust	Mean Rank
1	I will trust someone if I believe that she or he she will do what they said they would do (Contractual trust)	15.77
2	I will trust someone I believe that she or he has the knowledge and skill to carry out the required tasks, (Competence trust)	14.23
3	I will trust someone who is known to me from previous working experiences (Process-based trust)	13.60
4	I will trust someone if I believe that it would be against their standards of behaviour to take advantage of me or my company (Strong form trust)	12.81
5	I will trust someone if I believe that he or she thinks the same way as I do (Cognitive trust)	12.20
6	I will trust someone if I feel that she or he has the same moral standards that I have (Normative trust)	11.26
7	I will trust someone if I feel I can predict the way they would act (Cognitive trust)	10.14
8	If I do not know someone, I will trust him or her if I feel that the risk is low (Calculative trust)	10.00
9	I will trust someone if I believe that the potential cost to him or her of breaking my trust is greater than the value he or she would gain (Deterrence-based trust)	9.76
10	I will trust someone whom I believe will do whatever is needed to further the benefit of me or my company (Goodwill trust)	9.63
11	I will trust someone if I know that he or she has limited opportunities of taking advantage on me (Weak form of trust)	8.93
12	I will trust someone if I feel that our contract prevents him or her from taking advantage of me or my company (Semi strong form trust)	8.15
13	I will trust someone who has a socially acceptable profession e.g. doctor, teacher, chartered engineer (Institutional trust)	7.42
14	I will trust someone who belongs to a socially recognised organisation e.g. Institution of Mechanical Engineers, a large company (Institutional trust)	6.88
15	I will trust someone who belongs to the same social group as I do (Characteristic trust)	6.33
16	If I do not know someone, I will trust him or her if the costs of checking are high (Calculative trust)	6.10
17	I will trust someone who is the same sex as I am (Characteristics based trust)	3.90
18	I will trust someone who is the same age as I am (Characteristics based trust)	3.87

In the high priority group there are five types of trusts i.e. ‘contractual’, ‘competence’, ‘process-based’, ‘strong form trust’ and ‘cognitive’. ‘Contractual trust’, where it is assumed that the collaborative partners will uphold universal ethical standards, is considered as the most preferred type of trust. This is followed by ‘competence trust’ where it is believed that the collaborative partners have the knowledge and skill to carry out required task. Familiarities with trading partners and similarities in ways of thinking also play a very important role when people in the oil industry speak or think about trust

Normative trust, where trustor and trustee have similar moral standards is at the top of the middle priority group. This is followed by calculative and cognitive-based



trust, where the trustor judges and predicts a future behaviour of trustee before putting trust in him. ‘Deterrent-based trust’, ‘goodwill trust’, ‘semi-strong’ and ‘weak form’ of trust also belong to this group. Interestingly, characteristic based trust where it is said that people trust some one who belongs to the same social group, or have similar age, sex etc. is placed at the bottom of the ranking list. This finding suggests that people in the oil and gas industry trust their collaborative partners by considering their behavioural characteristics rather than physical characteristics. Institutional based trust, where it is said that people place in others because of their attachment with socially recognised organisations or professions, also belongs to this group.

#### ***11.3.4 Variation in responses between groups***

As mentioned earlier the respondents were divided in to different groups depending on their job levels, organisation types, and alliance experiences. Several analyses and tests were performed to examine whether the groups differ in their opinions on the matters under investigation. The average scores of respondents from different groups were subjected to analysis of variance to examine whether their responses vary significantly. First of all let us consider the analysis of variance of responses from the perspective of respondents' job levels, as it appeared to be one of the most interesting groups. Here we have sets of data from three groups of subjects i.e. ‘Senior Managers’, ‘Middle Managers’, and ‘Technical Specialists’. In our analysis we define all respondents from ‘Senior Managers’ group as population 1, ‘Middle Managers’ as population 2, and ‘Technical Specialists’ as population 3.

Let  $\mu_1$  = mean score for population 1

$\mu_2$  = mean score for population 2

$\mu_3$  = mean score for population 3

Using ANOVA following hypotheses were tested:

Null hypothesis,  $H_0: \mu_1 = \mu_2 = \mu_3$

Alternative hypothesis,  $H_a$ : Not all population means are equal



If the means for the three populations are equal, we would expect the three sample means to be close together. In fact, the closer the sample means are to one another, the more evidence we have for the conclusion that the population means are equal. Alternatively, the more the sample means differ, the more evidence we have for the conclusion that the population means are not equal (Anderson *et al*, 1996). In other words, if the variability among the sample means is 'small', it supports the null hypothesis; if the variability among the sample means is 'large' it supports alternative hypothesis. The following table presents ANOVA results of those groups. The calculated value of F, the ratio of between-groups mean square and within-group mean square, is .802 with 2 (3-1) in the numerator and 93 (95-2) denominator degrees of freedom. As the F value is less than 1, the result is non-significant and we do not reject the null hypothesis (Wright, 1998). It should be mentioned that out of 100 respondents four respondents did not mention their job titles and one respondent did not answer all the questions in relation to ‘trust type’, therefore those five respondents were excluded from the calculation.

Table: 11.8 ANOVA for Respondents’ Job Levels

	Sum of square	df	Mean square	F	Sig.
Between Group	.270	2	.135	.802	.452
Within Group	15.635	93	.168		
Total	15.906	95			

Analysis of variance tests were also performed between the respondents having different levels of alliance experiences as well as respondents from different types of organisations to understand whether there are differences in opinions between the groups. The tests suggest that there are no significant differences between the mean scores of those groups.



### ***11.3.5 Attitudes toward trust***

One of the purposes of the study was to understand people's perceptions on trust in collaborative relationships in the UK oil and gas industry. Altogether 18 statements stating different reasons and attributes, for which a person could trust another person, were given in the questionnaire. The respondents provided their opinions by scoring the statements according to their choice. From the opinions it may be possible to understand the respondents' attitudes to trust. Now, what is meant by attitude? Aronson (1995) suggests that "an opinion that includes an evaluative and emotional component is called an attitude". Again, Thurstone (1928) mentions the concept 'attitude' and states that it refers to the sum total of a person's inclinations, prejudices, ideas, fears, and convictions about any specific topic. Opinions on the other hand are the verbal expression of attitude, in other words they are the symbols of attitudes (Nachmias and Nachmias, 1982). In our study the respondents read the statements about trust, evaluated them with their emotions and perceptions, and finally made their judgements i.e. provided scores for them. That is to say, when the respondents provided their opinions on trust by evaluating the statements, they in fact expressed their attitudes on trust. Aronson (1995) also mentioned that "readily accessible attitudes colour and modify our interpretation of our social world. We then act on our perceptions...". The implication of this view in our study is that, each respondent scored the statements differently because their differing attitudes influenced the interpretation of the statements differently and subsequently shaped their judgements on the statements. Therefore, it may be suggested that the scores of the statements on trust vary because the respondents hold different attitudes on trust.

Now, if a respondent agrees with most of the statements he may be considered as a person who has a trusting attitude, that is his propensity to trust others is high, because his action (here scoring) was influenced by his attitude. During scoring the 18 statements he found many reasons of putting trust on others. On the other hand, when a respondent did not agree with most of the statements (reasons for which he could trust others), he was also influenced by his attitude. His attitude toward trust



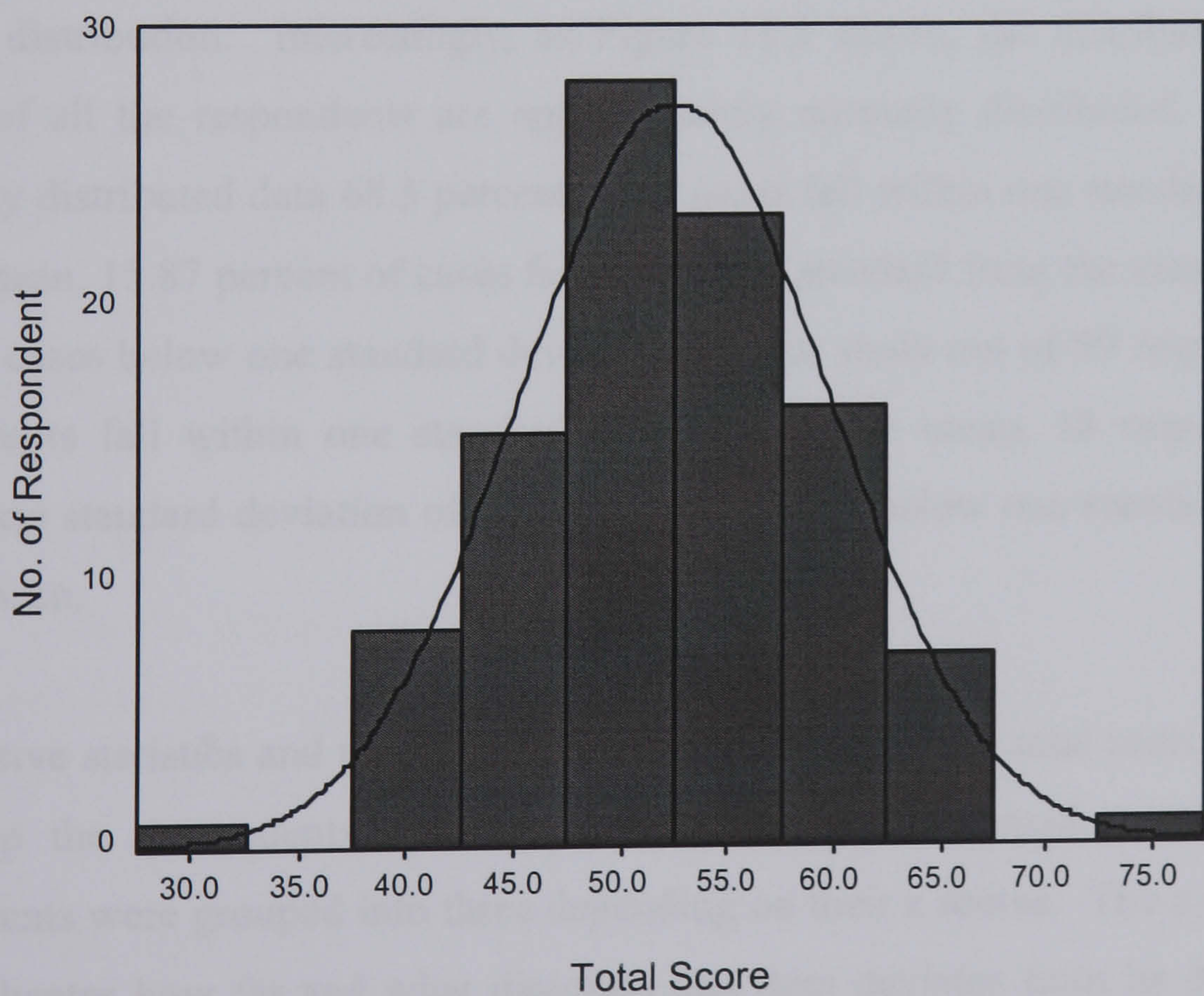
can be said to be negative because he could find little or no reason of trusting other people out of 18 possible reasons.

Other than the two extreme groups some of the respondents fall in the middle category and they may be termed as ‘neutral’. Having made the argument on people’s attitudes on trust, the respondents were divided into three categories depending on their scores.

Table: 11.9 Descriptive statistics of respondents total score

Number of respondents	Minimum score	Maximum score	Mean	Std. Deviation
99	30	73	52.49	7.28

Figure 11.5 Distribution of Respondents’ Total Scores on the Perceptions on Trust





Respondents who have scored high are regarded as 'people having trusting attitude', respondents who scored low as 'people having non-trusting attitude', and respondents who are in the middle, as 'neutral'. The following procedures were followed to group the respondents from the perspective of their trusting attitudes.

Altogether 18 statements were made to understand people's perceptions on trust, and each statement could have minimum score of '1' and maximum score of '5'. For all the 18 statements, maximum possible score for a respondent would be  $18 \times 5 = 90$  and minimum possible score  $18 \times 1 = 18$ . Descriptive statistics of the respondents' total score show (see Table 11.9) that the highest score of the 99 respondents is 73 and the lowest score is 30 with a mean of 52.49 and standard deviation 7.28.

SPSS was used to assess the extent to which the spread of scores can be described by a normal distribution. To do this, a histogram was generated with the respondents' total scores and a normal curve was superimposed on the histogram. By looking at the histogram we can see the extent to which the distribution of data approximates a normal distribution. Interestingly, as Figure 11.5 shows, the distribution of total scores of all the respondents are approximately normally distributed. In case of normally distributed data 68.3 percent of all cases fall within one standard deviation of the mean, 15.87 percent of cases fall above one standard from the mean and 15.87 percent cases below one standard deviation. In our study out of 99 respondents, 64 respondents fall within one standard deviation of the mean, 18 respondents fall above one standard deviation of the mean and 17 fall below one standard deviation of the mean.

Descriptive statistics and the normal distribution curve of the total scores were used to group the respondents from the perspective of their trusting attitude. The respondents were grouped into three depending on their z scores. The z score for an item indicates how far and what direction that item deviates from its distribution's mean, expressed in units of its distribution's standard deviation (Bickman and Rog, 1998). The respondents who have a z score of  $+ 0.5$  were designated as



‘respondents with trusting attitude’, and the respondents who have z score of -0.5 was designated as ‘respondents with non-trusting attitude’. The respondents between these groups were termed as ‘Neutral’. A z-score of +0.5 indicates  $\frac{1}{2}$  standard deviation unit above the mean and a z-score of - 0.5 indicates  $\frac{1}{2}$  standard deviation unit below the mean (Argyrous, 1997). According to this classification, the respondents who have scored 56.13 ( $52.49 + 3.46$ ) or above belong to the ‘Trusting attitude’ category, and the respondents who have scored 49.03 ( $52.49 - 3.46$ ) or below belong to ‘Non-trusting’ category. The rest of the respondents who have scored over than 49.03 but less than 56.13 belong to ‘Neutral’ category. The reasons for taking a z score of + 0.5 and - 0.5 are to have a sufficient numbers of respondents in the two extreme groups. With the z scores we have 32 respondents in ‘Trusting’ group, 30 in ‘Non-trusting’ group and 38 in ‘Neutral’ group whose scores are in the middle of the curve. Whereas with a z score of +1 and -1 we would have much higher number of respondents in ‘Neutral’ group. (73), and smaller number of respondents in ‘Trusting’ (14) and ‘Non-trusting’ (13) groups. On the other hand, with a much smaller z score e.g. 0. + 1 and 0.-1, we would have smaller number of respondents in the ‘Neutral’ group and much bigger number of respondents in the ‘Trusting’ and ‘Non-trusting’ groups. Big differences in the number of people among the three groups would have reduced acceptability of statistical analysis as well as any comparison between them. One respondent was excluded from the classification because of his incomplete response to this question.

#### *11.3.5.1 Significance tests*

Having made the groups, a two-tailed analysis of variance test was performed to understand whether the grouping was significant. ANOVA (Table 11.10) indicates that there are significant differences in the means of ‘Trusting’, ‘Non-trusting’ and ‘Neutral’ groups. As the overall test for the groups was significant, follow-up post hoc multiple comparison tests were conducted to evaluate pairwise differences among the means of trusting, neutral and non-trusting groups. Multiple comparison tests indicate that all the three groups vary significantly from each other beyond the .05% level of significance. From all the above mentioned arguments and results of



performed tests it may be argued that grouping of the respondents from the perspective of their trusting attitudes is justified, hence this grouping will be used to analyse and interpret the data in following sections where appropriate.

**Table: 11.10 ANOVA for Respondents’ Trusting Attitudes**

	Sum of square	df	Mean square	F	Sig.
Between Group	12.860	2	6.430	181.01	.004
Within Group	3.446	97	.168		
Total	16.305	99	3.552E-02		

*11.3.5.2 Trusting attitudes of respondents*

Grouping of the respondents on the above criteria i.e. on their trusting attitudes reveals that out of 100 respondents, 32 respondents possess trusting attitudes, 38 neutral and 30 non-trusting attitudes. Cross tab analysis was performed to understand respondents trusting attitudes in different types of organisations. From the trusting attitudes viewpoint we can see (Table 11.11) out of 55 respondents from contractors 19 respondents have trusting attitudes, 19 have neutral attitudes and 17 possess non-trusting attitudes. 12 respondents from operators belong to trusting attitude group, 19 neutral and 13 belong to non-trusting group.

**Table: 11.11 Respondents having different trusting attitudes in different types of organisations**

Organisation types	Trusting	Neutral	Non-trusting
Contractors/Suppliers	19	19	17
Operators	12	19	13



Analysis was also performed to see how the respondents’ trusting attitudes vary with their length of alliance experience. The following table ( Table 11.12) presents the results. It may be noted that the total number of respondents, in the results of different cross tab queries, may not be same because some of the respondents did not mention some of their subgroups. Chi squared tests reveal that the proportions of trusting, non-trusting or neutral respondents do not vary significantly with organisation type or alliance experience.

**Table: 11.12                      Respondents’ collaboration experiences and trusting attitudes**

Alliance involvement	Neutral	Non-trusting	Trusting
Up to 1 year	3	5	5
1 year to 5 years	24	15	14
5 years and above	11	9	12
Not mentioned		1	1
Total	38	30	32



## **11.4 Effects of Trust in Collaborative Relationships**

### ***11.4.1 Introduction***

Effects of trust in a collaborative relationship have been viewed differently by different social scientists. The majority of literature suggests that presence of trust in collaborative relationship could bring enormous benefits to the involved companies in the relationship. Examples are increased co-operation between companies, improved efficiency of joint activities, reduced bureaucratic barriers, reduced business costs etc. On the other hand, some literature also suggests that putting a high level of trust in others makes the trustor vulnerable to exploitation, and allows companies to use confidential information for their own benefit or that trust offers benefit only to the powerful companies in a relationship.

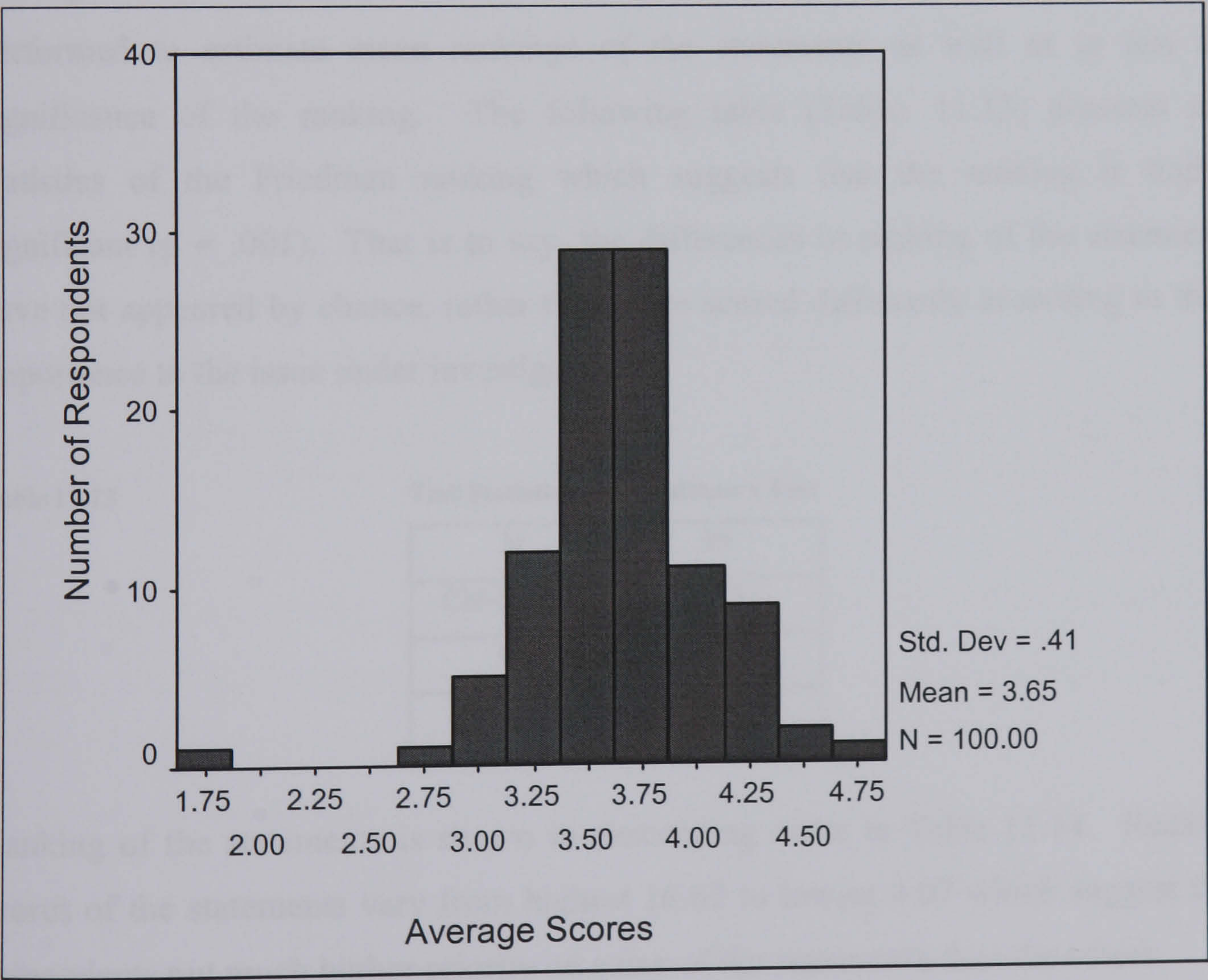
One of the important objectives of the study was to understand the perceptions of people, who work in alliances or similar relationships in the UK oil and gas industry, of the effect of presence of trust in a collaborative relationship. Accordingly the respondents were asked 'What is the effect on the presence of trust in the UK oil and gas industry collaborative relationships?' To assist the respondents in answering the question 23 statements were made of different effects of presence of trust in a collaborative relationship, which are commonly mentioned in literature. People were asked to score the statements from 1 through 5, where 1 indicates strongly agree and 5 indicates strongly disagree, However the scores were inverted to put maximum weight on 'strongly agree' option and minimum weight on 'strongly disagree' option before analysis. They were also requested to make any other comment on the effect of trust in collaborative relationship, if they wanted. A number of calculations and tests were performed including, frequency count, descriptive statistics analysis, ANOVA test, Freedman's Ranking and Cluster analysis etc. to extract information from the data.



11.4.2 Average score for each respondent over the 23 statements

Descriptive analysis was performed to understand the ways the respondents scored the statements, which also reflected their opinion on the effects of trust in collaborative relationships in the UK oil and gas industry. Count of responses shows that the 100 respondents provided 2299 answers out of possible 2300 answers, that is we have only one missing item of data for this question. Average scores were calculated for each of the respondents depending on their scores on all the statements. The analysis indicates that minimum average score is 1.70 and maximum average score is 4.47 with a

Figure: 11.6 Respondents average scores on the effects of trust





mean of 3.65. The average scores of all the respondents were plotted on a histogram to understand the spread of the scores. The distribution of average scores of the 100 respondents is shown in Figure 11.6.

As can be seen, out of 100 only 7 respondents scored 3 or less on an average for the 27 statements, rest of the 93 respondents scored 3 or above. Moreover, most of the respondents' average scores are greater than 3.5. These findings indicate that the vast majority of the respondents agree with most of the statements regarding effects of trust in collaborative relationships.

### 11.4.3 Ranking of statements

As the descriptive analysis indicates, respondents gave different levels of priority in scoring the statements in relation to the effect of trust. Friedman’s tests were performed to estimate mean rankings of the statements as well as to test the significance of the ranking. The following table (Table: 11.13) presents test statistics of the Friedman ranking which suggests that the ranking is highly significant ( $p = .001$ ). That is to say, the differences in ranking of the statements have not appeared by chance, rather they were scored differently according to their importance to the issue under investigation.

Table 11.13

Test Statistics for Friedman’s Test	
N	99
Chi-Square	709.31
Df	22
P	.001

Ranking of the statements is shown in descending order in Table 11.14. Ranking scores of the statements vary from highest 16.62 to lowest 4.07 which suggest that respondents put much higher priority on some of the statements than the others.



**Table: 11.14 Ranking of the statements in relation to the effect of trust in a collaborative relationship**

Sl No	High levels of trust in a collaborative relationship:	Mean Rank
1	Will allow people to depend on each other with confidence	16.62
2	Will make each person feel more comfortable about the relationship	15.44
3	Will improve the efficiency of joint activities	15.19
4	Will enable increased co-operation between the companies	15.09
5	Will enable the companies to agree to share risks and rewards	14.55
6	Will reduce the costs of co-ordinating the tasks of operators and suppliers	14.09
7	Enables new work to be initiated more easily	14.07
8	Will result in increased innovation and learning	13.88
9	Will reduce uncertainty regarding behaviour of the people involved	13.74
10	Enable information to flow freely between the companies	13.56
11	Will enable the companies involved to adapt more easily to unforeseen circumstances	13.19
12	Will reduce the bureaucratic barriers to getting work done	13.05
13	Will improve competitive advantage of the companies involved	12.47
14	Will increase the volume and scope of business of the companies involved	12.20
15	Will reduce the costs of maintaining the relationships	12.19
16	Will reduce the fear of opportunistic (advantage-taking) behaviour	12.01
17	Will reduce business operation costs	11.27
18	Will reduce the completion time of a project	10.06
19	Will reduce the risks of co-operation	9.31
20	Will reduce or remove the need for investment in monitoring and controls	8.84
21	Will allow companies to use confidential information for their own benefit	6.32
22	Will increase vulnerability of the companies involved	4.79
23	Will only benefit the powerful companies in the relationship	4.07

Depending on the ranking score it may be possible to divide the statements into three groups. The top four statements on the ranking scale which have scored 15 and above, may be termed as the most important group, the five statements which are at the bottom of the ranking scale and have scored less than 10 as the least priority group, and the 13 statements which are in the middle, as the moderate important group. The analysis indicates that the most significant benefit of presence of trust in a collaborative relationship is that it allows people to depend on each other with confidence in a relationship. In all relationships people have to depend on each other but if there is low trust then there is always the nagging doubt or uncertainty about



the outcome. In a trusting relationship that doubt and worry is not there, people can rely on each other with confidence and this must be a benefit. The second most important benefit is that trust will make each partner feel comfortable about the relationship. The other two most significant effects of high levels of trust are that it improves the efficiency of joint activities and that it enables increased co-operation between companies. The statements, which are identified as moderate important, illustrate broadly three types of effects in a collaborative relationship. Firstly, presence of trust improves performance in a collaborative relationships by increased innovation and learning, enabling information to flow freely, reducing completion time of a project, and by reducing bureaucratic barriers to get work done. Secondly, it helps to reduce transaction costs by reducing costs of co-ordination between collaborative partners, reducing cost of maintaining relationships and by reducing business operation costs. Finally, presence of trust enhances business by improving competitive advantage, increasing volume and scope of business, enabling smooth initiation of new work, and by helping the companies involved in adapting to unforeseen circumstances.

The statements, which are identified as the least important primarily state negative effects of presence of trust in a collaborative relationship. For example, presence of trust in a collaborative relationship increases vulnerability of companies involved or allows companies to use confidential information for their own benefit or only benefits the powerful companies in the relationship. This finding suggests that the respondents do not perceive that having trust in a relationship would induce problems in their business, rather that it would make the relationship comfortable and improve business performance.

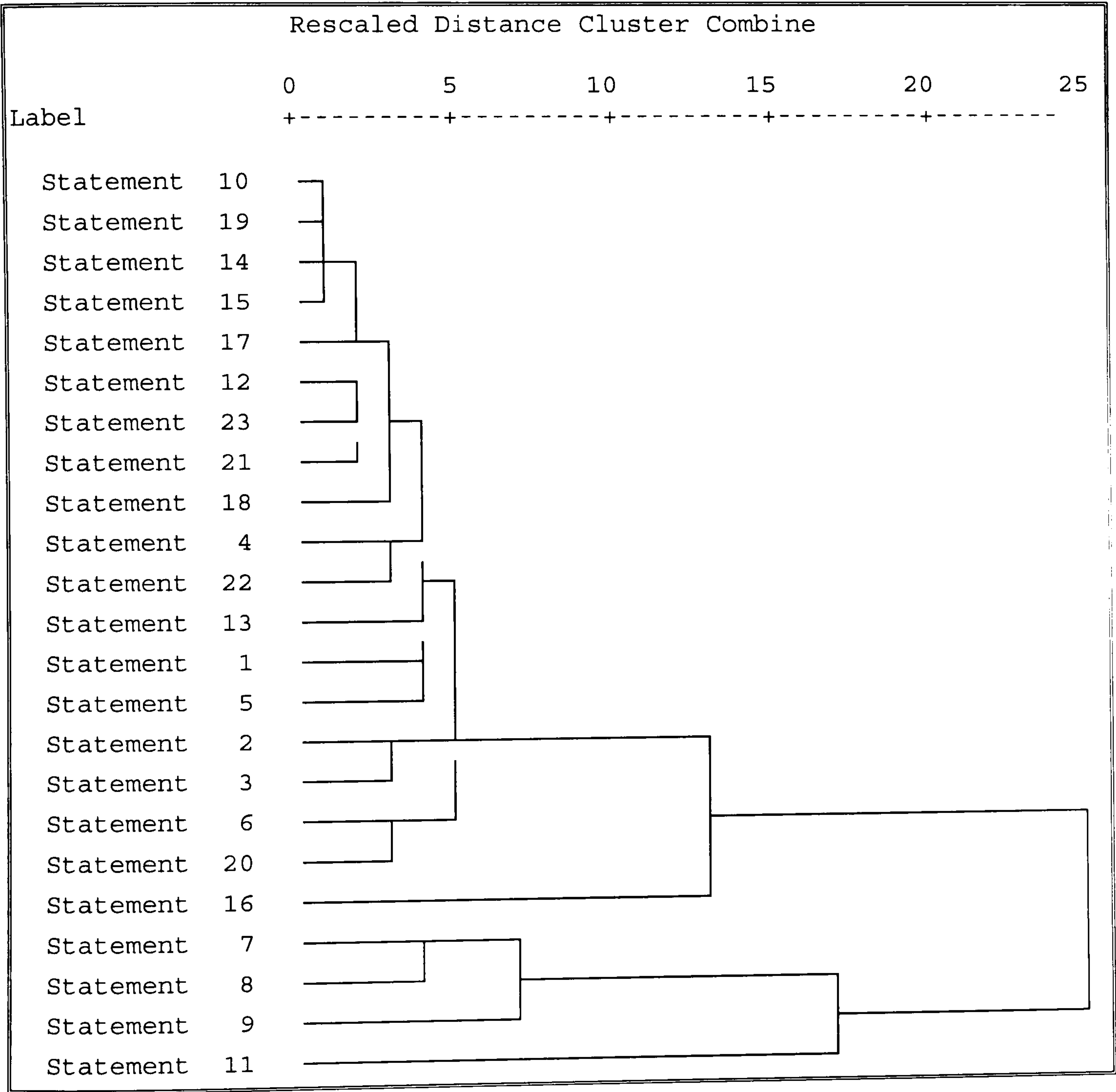
#### ***11.4.4 Cluster Analysis***

Cluster Analysis was performed to investigate whether the variables (statements) are linked together depending on their obtained scores. The goal of cluster analysis is to



find groups containing objects most homogeneous within these groups, while at the same time the groups between themselves are as heterogeneous as possible. Results of cluster analysis may be presented by a tree-diagram or dendrogram and clusters may be identified by sectioning the dendrogram at different levels (Zupan, 1982). Results of the analysis are presented in a dendrogram in Figure 11.7. From the

**Figure 11.7**                      **Dendrogram Presenting Linkage between Effects of Trust**



dendrogram it is possible to identify at least two groups or clusters. Firstly, when the dendrogram is sectioned at level 1, it can be noticed that statements 10, 19, 14 and 15 rest under this level and represent a cluster.



Another small cluster may be identified with statement no. 7, 8 and 9 when the dendrogram is sectioned at level 8 (please see Appendix 3 question number 5 for the statements). Interestingly all the statements of the first cluster belong to the most significant group and the statements of the second cluster belong the least significant group, which were identified by the Friedman's ranking tests.

#### ***11.4.5 Variation between groups***

Having analysed the opinion on the effects of trust in collaborative relationship on the basis of all respondents in one group, responses were also analysed from the viewpoint of different groups of the respondents i.e. respondents job levels, their company types, alliance experiences, and their trusting attitudes. The groups' average scores were subjected to ANOVA, to test whether opinions vary significantly or not. All the ANOVA tests indicated that there were no significance differences between the groups.



## **11.5 Factors Which Enable Trust to Develop in Collaborative Relationships**

### ***11.5.1 Introduction***

Trust is risky, virtually by definition, because without some uncertainty regarding the outcome of the relationship or exchange, it would not have to come into play. The trustor's expectation about the future behaviour of the trustee may turn out to be incorrect, possibly owing to unfamiliarity with the trustee, or having different social values, cultural norms or absence of legal mechanisms to restrict the risk in the system in which the transactions take place (Lane and Bachmann, 1996). Again the factors or issues which influence establishing and maintenance of trust between people, representing different companies in a relationship, may depend on their social, cultural, economic and ethnic background, types of company they work for, types or stages of relationship, national and international boundaries and so on.

One of the objectives of the study was to understand the factors or issues which encourage trust to become established in collaborative relationships in the UK upstream oil and gas industry. To gather respondents' opinions on the matter, altogether 34 statements or items were put forward in the questionnaire, expressing different issues or factors which enable trust to grow in a collaborative relationship. The content of the statements was drawn from an extensive review of relevant literature as well as from the first phase research. The respondents were asked to score the statements individually from 1 to 5 on a Likert type scale (where 1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, and 5 = strongly disagree). Counts of responses show that the 100 respondents provided 3334 answers out of possible 3400 answers. Therefore, we had 66 missing values which were dealt with in all the calculations.

### ***11.5.2 Average score for each respondent over the 34 statements***

Table 11.15 presents descriptive statistics of the respondents' average scores on trust enablers in a collaborative relationship. The descriptive statistics show that, the average score for all the respondents for the 34 statements is 3.77, with a minimum

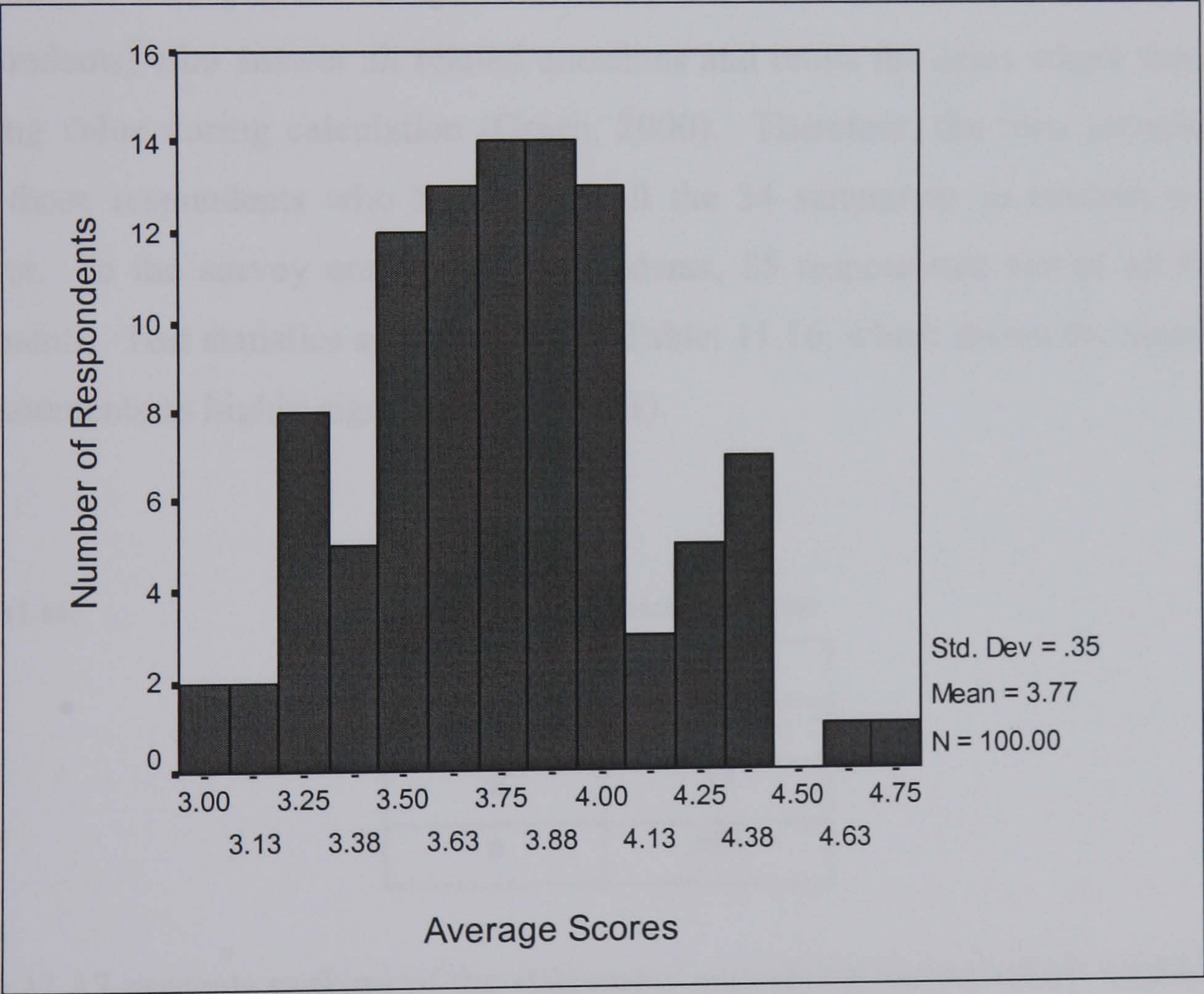


average score of 2.97 and a maximum of 4.71. The following histogram (Figure 11.8) shows the distribution of average score of the 100 respondents.

Table: 11.15                      Respondents' Average Score on Trust Enablers

Number of respondents	Minimum Score	Maximum Score	Mean
100	2.97	4.73	3.77

Figure: 11.8                      Distribution of average scores on trust enablers





It can be noticed in the histogram, that most of the respondents' average scores are placed above the 3 on the scale. From the findings it may be suggested that the respondents show their general agreement with the statements on trust enabling factors in collaborative relationships in the UK upstream oil and gas industry. Altogether 34 statements were made in relation to the factors which encourage trust to develop in collaborative relationships. Obviously all the factors are not equally important to the respondents. Therefore, analysis was done to rank the factors according to their priority as measured by the respondents' level of agreement.

### 11.5.3 Ranking of statements

Friedman's test was carried out to obtain overall mean rankings of the statements according to their scores. As the Friedman's test takes account only of those cases (respondents) who answer all related questions and omits the cases where there is a missing value during calculation (Green, 2000). Therefore, the tests include here only those respondents who had scored all the 34 statements in relation to trust enabler. In the survey out of 100 respondents, 85 respondents scored all the 34 statements. Test statistics are presented in Table: 11.16, which shows the ranking of the statements as highly significant ( $p = .001$ ).

Table 11.16:

Test Statistics for Friedman's Test	
N	85
Chi-Square	1014.79
df	33
p	.001

Table 11.17 presents ranking of the statements expressing factors which enable trust in a collaborative relationship in the UK oil and gas industry in descending order. As can be seen in the table, the highest ranking score is 25.63 and the lowest ranking score is 3.23.



**Table: 11.17 Mean ranking of factors which enable trust in a collaborative relationship**

Trust between people in a collaborative relationship will increase	Mean Rank
If their actions are consistent with their words	25.63
If they do not mislead each other	24.56
Face to face contact increases trust between people	24.10
When they work together as a team	23.90
If there is open discussion of solutions to problems	23.44
If they have experience of working together	23.26
If they think that negotiations are carried out in an atmosphere of honesty	22.46
If they place high value on the relationship	21.55
If they communicate frequently	21.23
Communication and information exchange will increase trust between people	20.60
If one company does not exploit to its advantage any temporary weakness of other companies	20.38
If there is flexibility and willingness to adapt	19.84
If they identify problems early and resolve them without dispute	19.74
If risks and rewards are shared fairly	19.65
If they have the same objectives	18.88
If they perform their jobs with professionalism and dedication	18.84
If they understand each others problems at work	18.05
If they do not disclose secrets outside the relationship	18.05
If they adhere to a set of principles which governs behaviour in the relationship	18.00
If they are tolerant of each others problems	17.72
If they meet negotiated obligations	17.24
If the mission of collaborative relationship is clear to them	16.60
If they do whatever is necessary to ensure the success of the relationship even if it involves tasks to which they had not agreed previously	15.42
If they believe high trust groups will be more successful than the low trust groups	15.34
If they provide technical assistance to each other	15.33
If the cultures of the involved companies are similar	15.31
If decisions can be taken without reference to parent companies	14.59
If they think that there is trust between senior managers	13.56
If there are few layers of management in the companies involved	13.01
If they think that the penalties for breaking trust are high	9.54
If they share information cautiously to avoid it being misused	9.08
If there are systems and procedures to detect advantage taking behaviour	8.89
If they have a written contract	7.99
If one partner is more powerful than the others	3.23

Considering the mean ranks of all the statements, it may be possible to group them into three, according to their priority. The group which has mean rank scores over 20, is labelled the highest priority group, the group with 10 to 20 (inclusive) mean



rank scores is the moderate priority, and the group which scored less than 10 is the least priority group. Out of 34 statements, 11 statements fall into the high priority group, 18 statements in the moderate priority group and the remaining the five statements in the least priority group. The table demonstrates that, 'consistency of peoples' actions with their words', 'not misleading each other', 'face to face contact', 'working together as a team', and 'open discussion of solution to problems' 'experience of working together', 'placing high value on the relationship', 'frequent communication and information exchange' have been identified as the most important factors, which help to develop and maintain trust in a collaborative relationship. This suggests that honesty, open communication and information exchange and genuineness in the relationships are perceived as critical to foster trust in a collaborative relationship in the industry.

Factors like 'flexibility and willingness to adapt', 'early identification of problems and resolving them with out dispute', 'fair sharing of risks and rewards structure', 'having similar objectives' have been identified as moderately important.

The factors ranked as least important by the respondents are 'provision of penalties for breaking trust', 'sharing information cautiously', 'existence of systems and procedures to detect opportunistic behaviour', 'having written contract', and 'imbalance of power i.e. one partner is more powerful than others'. This indicates that systems and procedures, fear of penalties or legally binding contracts have little positive impact on developing and maintaining trust between collaborative companies in the oil and gas industry. Integrity, honesty, frequent open communication and sincerity in the relationship are much more important.

#### ***11.5.4 Cluster analysis***

Cluster analysis was performed to investigate whether the variables (statements) are linked together and form any groups according to their obtained scores. A dendrogram produced from the cluster analysis of trust enablers is presented in



Figure 11.9                      Dendrogram Presenting Linkage between Trust Enablers

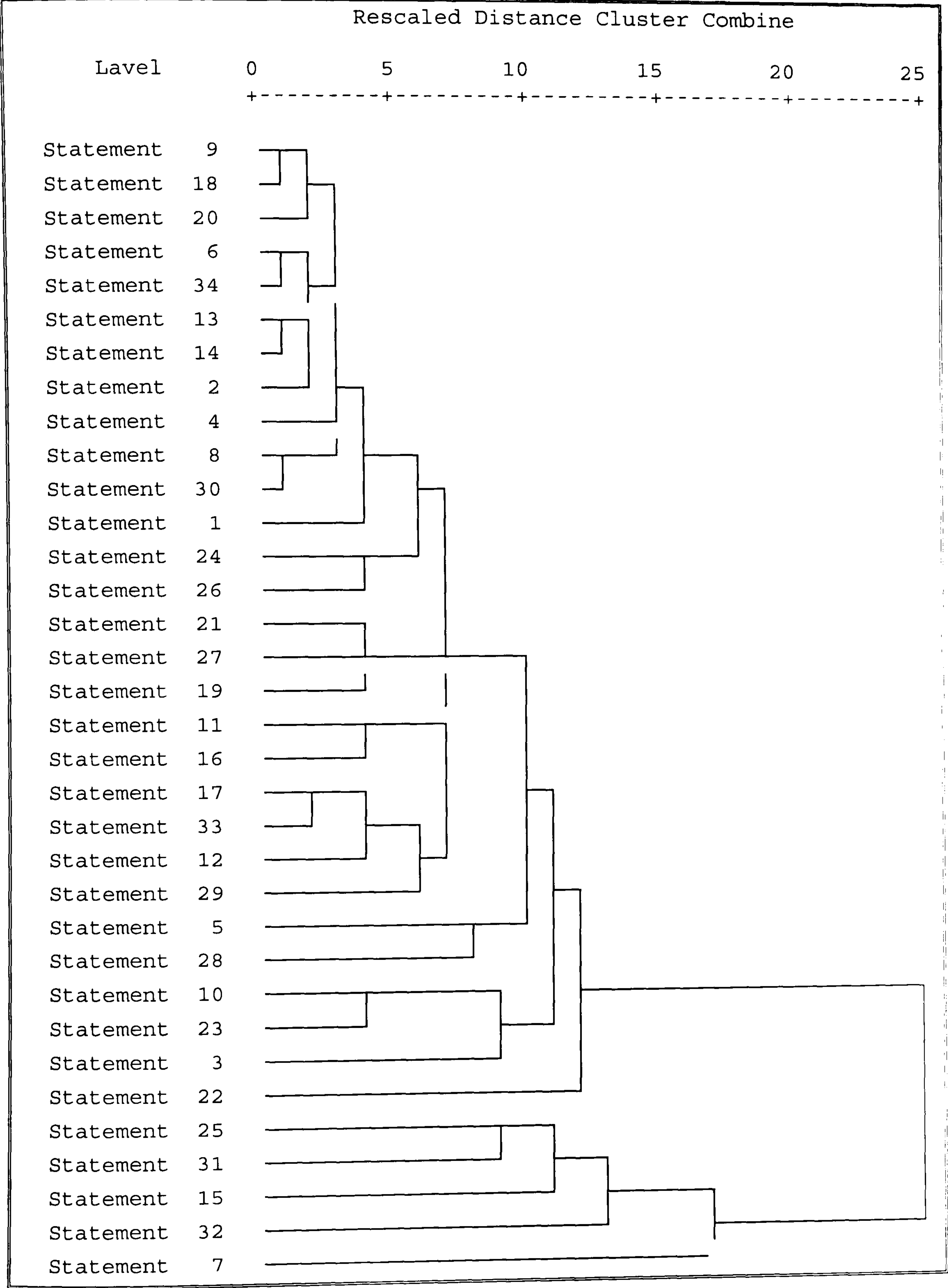




Figure 11.9. By sectioning the dendrogram at two different levels, it may be possible to get three clusters out of 34 variables. First, when the dendrogram is sectioned at level 3, 11 variables (Statements, 9,18, 20, 6, 34, 13, 14, 2, 8 and 30) form a cluster. We get second cluster by sectioning the dendrogram at level seven. The second cluster forms with 12 variables (Statements 1,24, 26, 21, 19, 11, 16, 17, 33, 12 and 29) which fall between level 3 and level 7. The remaining 11 statements belong to the third cluster which are above level seven (Please see Appendix 3 question 6 for the statements). Examination of the clusters, interestingly, indicates that the statements expressing the factors which enable trust form clusters according to their importance, which have been previously identified by the Friedman's test. The first cluster includes those factors, which have been indicated as most important by the respondents. The third cluster is formed by the variables which were distinguished as least important and the second cluster, groups all the variables which are perceived as in-between category by the respondents. Similar results from Cluster analysis and the Friedman ranking on the grouping of the statements offer stronger justification on the ways the statements were grouped.

### ***11.5.5 Variation between groups***

Until this point, the analyses which considered all the respondents as one group are interpreted. Now we will examine whether different groups of respondents differ in their opinions on the matters under investigation.

#### ***11.5.5.1 Variation between trusting and non-trusting groups***

The responses of the respondents in different groups were subjected to analysis of variance to examine whether their responses vary significantly. First of all let us consider the analysis of variance of responses from the perspective of respondents' trusting attitudes, as it is one of the most interesting groups. Here we have three separate sets of data from three groups of subjects i.e. 'trusting', 'neutral', and 'non-trusting'. The analysis indicates the mean scores of 'trusting', 'neutral', and 'non-trusting' respondents are not equal which rejects the null hypothesis and supports the alternative hypothesis. The following table (Table: 11.18) presents ANOVA results



of those groups. As can be seen in the table, the calculated value F, the ratio between-groups mean square and within-group mean square, is 4.84 with 2 (3-1) in the numerator and 97 (100-3) in the denominator degrees of freedom beyond .05 level of significance, which is higher than the tabulated F value, 3.15. That is to say the test confirms that the respondents having different levels of trusting attitudes possess different opinions on the factors which enable trust in a collaborative relationship in the upstream oil and gas industry.

**Table: 11.18 ANOVA for Trusting and Non-Trusting Groups**

	Sum of square	df	Mean square	F	Sig.
Between Group	1.114	2	.557	4.84	.010
Within Group	11.115	97	.115		
Total	12.229	99			

As the overall test for trusting groups was significant, follow-up post hoc multiple comparison tests were conducted to evaluate pairwise differences among the means of trusting, neutral and non-trusting respondents.

Descriptive analysis of the data reveals that the standard deviations for different groups of respondents range from 0.3189 to 0.3672 and the variances (the standard deviation squared) range from 0.169 to 0.348. As the variances among the three groups do not differ a great deal, a post hoc comparisons using the Tukey test, a test that assumes equal variances among the groups (Green *et al*, 2000) was performed. The results of the test are presented in Table 11.19.

**Table: 11.19 Multiple Comparisons**

	Non-trusting	Neutral
Trusting	.007*	.316 <sup>NS</sup>
Neutral	.172 <sup>NS</sup>	

Note: NS = nonsignificant difference between pairs of means, while an asterisk (\*) = significant beyond .05% level using Tukey procedure.



There is significant difference in the means of trusting and non-trusting groups, but no significant differences between trusting and neutral, and non-trusting and neutral groups in the sequence of ranking. Further analysis was performed to explore how and why the trusting and non-trusting groups differ in their opinions. Group-wise Friedman tests were performed in order to understand the groups' priority on the factors which enable trust to develop and maintain. The analysis shows that there is no considerable difference between the groups in the sequences of ranking of the statements (see Table 11.20 and 11.21). However, the trusting group perceives that 'not to mislead each other' is most important to increase trust between people. On the other hand the non-trusting group ranks 'if their actions are consistent with their words' highest.

One of the other interesting differences between the trusting and non-trusting groups is the way they have scored all the statements. The trusting group has scored generally higher to most of the statements than the non-trusting group. Out of 34 statements, the trusting group scored high in 31 statements, whereas non-trusting group scored high in only three statements. This may explain the attitudes of the groups. The trusting people may possess a positive view about the world, whereas people having non-trusting attitudes may be suspicious about the things around them and may not be sure about what would help to increase trust between people or may not want to trust each other. Relative comparisons were made to examine the statements in which the two groups differ most. 'Trust between people will increase if there are systems and procedures in place' received relatively higher score from the trusting group than from non-trusting group. The case of 'commitment to the relationships' and 'few layers of management' were similar. On the other hand, the non-trusting group put more weight on the 'actions that are consistent with word', 'communication' and 'information exchange'.

The analysis also reveals that mean rank scores are more evenly distributed among the statements in case of non-trusting group, whereas in the case of the trusting



group, the mean rank scores are high in a few statements only. This may suggest that, the trusting group has a more clear idea about the issues related to trust enablers

**Table: 11.20** **Mean Ranking of Factors Which Enable Trust - by Trusting Group**

Trust between people will increase if	Mean Rank
If they do not mislead each other	23.59
If their actions are consistent with their words	23.56
If they communicate frequently	23.15
If they think that negotiations are carried out in an atmosphere of honesty	23.15
Trust between people will increase when they work together as a team	23.06
If they place high value on the relationship	22.59
If there is open discussion of solutions to problems	22.47
Face to face contact increases trust between people	21.84
Trust between companies will increase if risks and rewards are shared fairly	21.46
If they have experience of working together	21.12
If they identify problems early and resolve them without dispute	19.65
If there is flexibility and willingness to adapt	19.06
If they have the same objectives	18.93
Trust between companies will increase if one company does not exploit to its advantage any temporary weakness of other companies	18.87
If they meet negotiated obligations	18.84
If communication and information exchange will increase trust between people	18.00
If they do whatever is necessary to ensure the success of the relationship even if it involves tasks to which they	17.75
If they do not disclose secrets outside the relationship	17.5
If they perform their jobs with professionalism and dedication	17.43
If the mission of collaborative relationship is clear to them	17.28
If they adhere to a set of principles which governs behaviour in the relationship	17.06
If they provide technical assistance to each other	16.37
If they are tolerant of each others problems	16.37
If they believe high trust groups will be more successful than the low trust groups	16.21
Trust between people will increase if they understand each others problems at work	15.93
If there are few layers of management in the companies involved	15.78
If the cultures of the involved companies are similar	13.71
If decisions can be taken without reference to parent companies	13.56
If they think that there is trust between senior managers	13.28
If there are systems and procedures to detect advantage taking behaviour	12.18
If they think that the penalties for breaking trust are high	12.00
If they share information cautiously to avoid it being misused	10.71
If they have a written contract	9.68
If one partner is more powerful than the others	2.71



**Table: 11.21      Mean Ranking of Factors Which Enable Trust -by Non-Trusting Group**

Trust between people will increase	Mean Rank
If their actions are consistent with their words	26.34
If there is open discussion of solutions to problems	25.28
Face to face contact increases trust between people	25.18
If they do not mislead each other	24.43
Trust between people will increase when they work together as a team	24.06
If they think that negotiations are carried out in an atmosphere of honesty	23.32
If they identify problems early and resolve them without dispute	22.62
If they have experience of working together	22.53
Trust between companies will increase if risks and rewards are shared fairly	22.28
Communication and information exchange will increase trust between people	21.65
Trust between companies will increase if one company does not exploit to its advantage any temporary weakness of other companies	21.28
If they perform their jobs with professionalism and dedication	20.59
If they place high value on the relationship	20.06
If there is flexibility and willingness to adapt	20.00
If they do not disclose secrets outside the relationship	19.81
If they communicate frequently	19.18
If they have the same objectives	18.34
If the mission of collaborative relationship is clear to them	18.03
If they understand each others problems at work	18.00
If they provide technical assistance to each other	17.37
If they adhere to a set of principles which governs behaviour in the relationship	17.37
If they meet negotiated obligations	16.06
If they are tolerant of each others problems	14.46
If they do whatever is necessary to ensure the success of the relationship even if it involves tasks to which they	13.87
If they believe high trust groups will be more successful than the low trust groups	13.65
If there are few layers of management in the companies involved	13.56
If decisions can be taken without reference to parent companies	13.09
If the cultures of the involved companies are similar	12.90
If they share information cautiously to avoid it being misused	10.93
If they think that there is trust between senior managers	10.25
If they have a written contract	8.78
If they think that the penalties for breaking trust are high	8.56
If there are systems and procedures to detect advantage taking behaviour	7.65
If one partner is more powerful than the others	3.40



and is more focused in their opinions. The non-trusting group may be not sure of the factors which are more important than others, or they may feel that the factors are rather equally important or even not important.

#### *11.5.5.2 Variation between other groups*

Analysis of variance (ANOVA ) was also performed on the other three groups of respondents i.e. respondents of different job levels, alliance experiences, and different company types. Results of ANOVA indicate that there is no significant difference in the responses in any of these groups.



## **11.6 Barriers to Developing and Maintaining Trust in Collaborative Relationships**

### ***11.6.1 Introduction***

Trust is so closely associated with basic norms and behaviour, social customs, rules and regulations that most actors in a relationship take it for granted (Zucker, 1986). The establishment and maintenance of trust between partners in a collaborative relationship face a challenge when these basic norms and social customs are violated (John Child, 1998). Repeated violations of the norms, customs or rules and regulations may result in breaking of trust or development of distrust among the partners.

One of the research objectives of the study was to identify the types of behaviour, which can threaten trust in a collaborative relationship in the UK upstream oil and gas industry. Therefore, peoples' opinions were gathered on the matter by questionnaire survey in which they were asked to score 34 statements according to their priority. The statements were made, expressing the issues or factors which have been advocated as barriers to trust by the social scientists in the literature. The respondents were requested to score the statements from 1 to 5, where 1 denoted strongly agree, 2 disagree, 3 neither agree nor disagree, 4 disagree and 5 denoted as strongly disagree. The scores of the statements were reversed to put highest weight to 'strongly agree' option and lowest weight to 'strongly disagree' option before performing any other calculation. Several calculations and tests were performed including, frequency count, descriptive statistics analysis, ANOVA test, Friedman Ranking test, Cluster analysis, to extract the information from the data.

### ***11.6.2 Average score for each respondent over the 34 statements***

Counts of responses show that the 100 respondents provided 3342 answers out of possible 3400 answers. Therefore, we had 58 missing values which were dealt with in all the calculations. Calculation of descriptive statistics of a respondent's average scores over the 34 statements on barriers to trust indicates that (see Table 11.22),

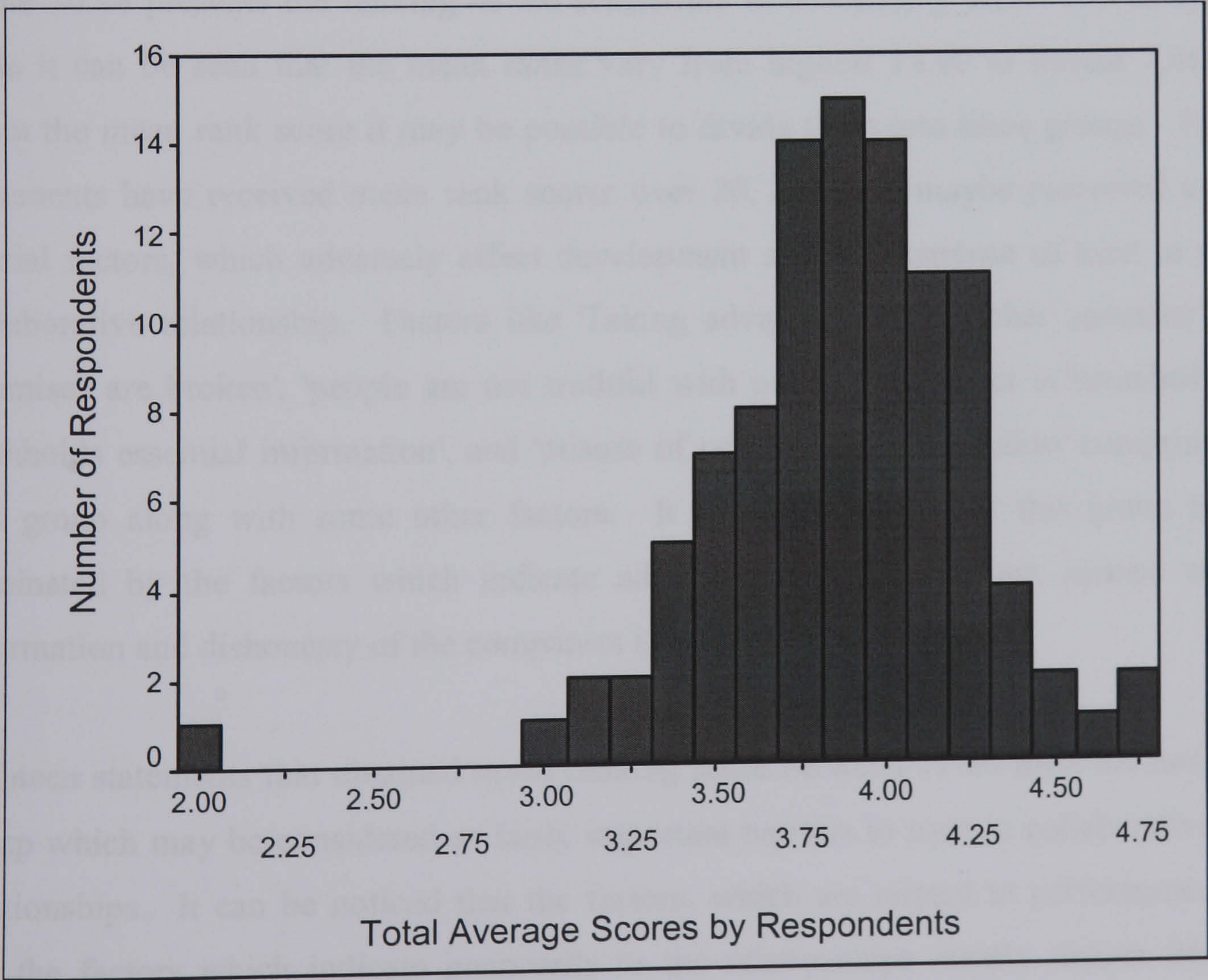


minimum average score for the 100 respondents is 2.06, maximum average score 4.79 and mean score 3.87 with a Std. deviation of .391. Distribution of respondents' average scores over the 34 statements is presented in Figure 11.10. As can be seen in the figure although the minimum average score is around 2, most of the respondents have scored above 3.75.

Table: 11.22                      Respondents average score on barriers to trust

Number of respondents	Minimum Score	Maximum Score	Mean	Standard Deviation
100	2.06	4.79	3.87	.391

Figure: 11.10                      Respondents average scores on barriers to trust





This can be interpreted that the respondents generally agreed with most of the statements.

**11.6.3 Ranking of the statements**

Friedman’s ranking test was performed to rank the statements on barriers to trust, as well as to test the significance of the ranking. The following table (Table: 11.23) indicates that the test is highly significant ( $p = .001$ ).

**Table: 11.23**

Test Statistics	
N	87
Chi-Square	899.87
df	33
p	.001

Table 10.24 presents the ranking of the statements in descending order. From the table it can be seen that the mean ranks vary from highest 24.90 to lowest 7.81. From the mean rank score it may be possible to divide them into three groups. 11 statements have received mean rank scores over 20, and they maybe perceived as crucial factors, which adversely affect development and maintenance of trust in a collaborative relationship. Factors like 'Taking advantage of the other company', 'promises are broken', 'people are not truthful with other', 'a contract is breached' 'withholds essential information', and 'misuse of confidential information' comprise this group along with some other factors. It can be noticed that this group is dominated by the factors which indicate advantage-taking behaviour, misuse of information and dishonesty of the companies involved in relationships.

Eighteen statements that obtained mean ranking score between 11-20 form the next group which may be considered as fairly important barriers to trust in collaborative relationships. It can be noticed that the factors, which are related to performance and the factors which indicate insincerity to the relationships mainly dictate this group. Factors like 'incompetence', 'lack of communication', 'problems are not



solved jointly', 'deadlines are not met' are some example of performance related factors. Factors which indicate insincerity to the relationships are 'companies try to get out of commitments', 'people do not place high value in the relationships', 'people do not work together as combined team', 'companies compete with each other', 'absence of shared objective'.

**Table: 11.24** **Ranking of factors which are barriers to trust**

Trust between people will decrease if:	Mean Rank
One company takes advantage of another	24.90
One company manipulates others to gain advantage over them	24.56
Promises are broken	23.71
People are not truthful with each other	23.60
One party withholds information which is important to the other	23.14
One company uses confidential information to its own advantage	23.07
People think that unfair accusations are being made between them	21.60
Misleading information is passed between them	21.53
People think that secrets are being disclosed to others outside the alliance	21.28
One company exploits to its advantage any temporary weakness of other companies	21.10
A contract is breached	20.16
Companies try to get out of the commitments they have made	19.80
A company is not competent to undertake the required tasks	19.54
There is lack of communication between them	19.36
They think that negotiations between the companies are not conducted fairly	18.53
People do not place high value on the relationship	18.20
There are uncertainties in the alliance	17.50
People do not work together as a combined team	17.39
People have different goals	17.01
People think that negotiated obligations are not being met	16.70
Problems are not being identified and resolved jointly	16.60
Risks and rewards are not shared fairly	16.56
There is uncertainty of roles and responsibilities	16.53
One company uses ideas from the alliance for its own interest	16.53
People think that senior managers do not trust each other	16.21
The companies compete with each other	15.82
Deadlines are not met	13.49
People do not understand each others problems	13.30
There is uncertainty about how a task should be performed	12.82
People cannot work without referring to the parent companies	10.52
Their companies have different organisational cultures	9.17
One company has more influence than others	8.53
There are many layers of management in the parent companies	8.43
Involved companies have highly formalised management control systems	7.81



The rest of the statements (factors) are considered as least important. Those factors are 'lack of autonomy', 'differences in organisational culture', 'imbalance of power', 'many layers of management', 'formalised control system'. It may be noticed that all of these statements concern factors or issues which are broadly related to the entire organisation, either organisational culture or organisational systems or organisational structure. Therefore, it may be argued that the perceived obstacles in establishing and maintaining of trust in a collaborative relationship mainly arise from peoples' advantage taking behaviour, dishonesty, insincerity towards the relationship, and poor performance, and that organisational systems and procedures are not perceived to be barriers to trust. It may be possible that if the systems and procedures place heavy emphasis on competitive bidding for all work, minimising unit costs, very tightly written contracts, close inspection of contracted work, or close audit of contractor's costs and invoices then it will be difficult for high level trust to develop between the people involved. People at the working interface could well develop a good relationship with a high level of trust, but the systems and procedures could restrict their freedom of action and their ability to interact with other in a trusting manner.

#### ***11.6.4 Variation between groups***

Having done the analysis from the viewpoint of respondents as a whole, data was also analysed by dividing the respondents into groups. The responses were analysed using analysis of variance, from the perspective of respondents' job levels, organisation types, alliance experiences and their trusting attitudes to understand whether there were differences in opinions in different groups. The analysis shows that there are no significant differences between respondents of different job levels i.e. SM, MM, and TS. Respondents from different company type i.e. contractors and operators also possess similar view and do not differ significantly in their scoring. Analysis of variance between respondents with different length of alliance experiences indicates that there is no significant difference between them. However the analysis of variance from the perspective respondents' trusting attitudes shows a significant result. The ANOVA is presented in Table 11.25, where F ratio is 4.98



which is beyond 0.01 level of significance with 2 numerator and 97 denominator degrees of freedom. That is to say respondents having different levels of trusting attitudes i.e. trusting, neutral and non-trusting attitudes, differ significantly in their opinions on barriers to trust.

**Table: 11.25** **ANOVA for Respondents’ Trusting Attitudes**

	Sum of square	df	Mean square	F	Sig.
Between Group	1.41	2	.705	4.98	.009
Within Group	13.736	97	.142		
Total	15.146	99			

Having obtained a significant result from the ANOVA test between trusting, neutral, and non-trusting groups, a post hoc multiple comparison tests was performed to understand where the differences lie. The analysis shows (see Table 11.26) that there is highly significant difference between trusting and non-trusting groups, but no significant differences between trusting and neutral, and non-trusting and neutral groups.

**Table: 11.26** **Multiple Comparisons**

	Non-trusting	Neutral
Trusting	.007*	.057 <sup>NS</sup>
Neutral	.263 <sup>NS</sup>	

Note: NS = nonsignificant difference between pairs of means, while an asterisk (\*) = significant beyond .01% level using Tuky procedure.

To understand the trusting and non-trusting groups’ differences more clearly, their scoring patterns and choices of priority on barriers to trust were examined. The examination indicates that the trusting group have scored generally higher (average score 4.1) than non-trusting group (average score 3.7) on the factors in relation to barriers to trust. This indicates that the trusting group has a higher agreement on the 34 factors of barrier to trust, in a collaborative relationship, than the non-trusting group of respondents. Friedman’s ranking tests were performed for both trusting



and non-trusting groups to understand their priority of the factors which can threaten trust in collaborative relationships.

**Table: 11.27**      **Mean ranking of factors which are barriers to trust -by trusting group**

Trust between people will decrease	Mean Rank
If one company takes advantage of another	24.07
If they are not truthful with one another	23.96
If promises are broken	23.18
If misleading information is passed between them	22.66
If one party withholds information which is important to the other	22.55
If one company uses confidential information to its own advantage	22.23
If they think that unfair accusations are being made between them	22.11
If one company manipulates others to gain advantage over them	21.77
If a contract is breached	21.57
If they think that secrets are being disclosed to others outside the alliance	20.64
If companies try to get out of the commitments they have made	20.54
If there is lack of communication between them	20.07
If they do not place high value on the relationship	19.77
If they think that negotiations between the companies are not conducted fairly	19.68
If a company is not competent to undertake the required tasks	19.52
If one company uses ideas from the alliance for its own interest	18.25
If there are uncertainties in the alliance	18.18
If one company exploits to its advantage any temporary weakness of other companies	18.18
If they do not work together as a combined team	17.57
If problems are not being identified and resolved jointly	17.48
If there is uncertainty of roles and responsibilities	17.04
If they think that senior managers do not trust each other	16.89
If they think that negotiated obligations are not being met	16.75
If they have different goals	16.20
If risks and rewards are not shared fairly	15.57
If the companies compete with each other	14.89
If deadlines are not met	14.66
If there is uncertainty about how a task should be performed	13.63
If they do not understand each others problems	13.23
If they cannot work without referring to the parent companies	11.20
If there are many layers of management in the parent companies	9.66
If their companies have different organisational cultures	7.20
If one company has more influence than others	7.05
If involved companies have highly formalised management control systems	7.05



**Table: 11.28      Mean ranking of factors which are barriers to trust - by non-trusting group**

Trust between people will decrease	Mean Rank
If one party withholds information which is important to the other	25.65
If one company manipulates others to gain advantage over them	25.04
If one company uses confidential information to its own advantage	24.71
If one company takes advantage of another	23.92
If they are not truthful with one another	23.58
If promises are broken	22.71
If misleading information is passed between them	22.44
If they think that secrets are being disclosed to others outside the alliance	22.23
If one company exploits to its advantage any temporary weakness of other companies	22.19
If there is lack of communication between them	20.94
If a company is not competent to undertake the required tasks	19.71
If a contract is breached	19.63
If they think that unfair accusations are being made between them	19.52
If risks and rewards are not shared fairly	18.90
If they do not work together as a combined team	18.29
If one company uses ideas from the alliance for its own interest	18.00
If there are uncertainties in the alliance	17.98
If problems are not being identified and resolved jointly	17.94
If they think that negotiated obligations are not being met	17.73
If there is uncertainty of roles and responsibilities	17.69
If companies try to get out of the commitments they have made	17.58
If they have different goals	17.08
If they do not place high value on the relationship	15.92
If the companies compete with each other	15.79
If they think that negotiations between the companies are not conducted fairly	15.63
If they think that senior managers do not trust each other	14.38
If there is uncertainty about how a task should be performed	14.15
If deadlines are not met	13.15
If they do not understand each others problems	11.52
If their companies have different organisational cultures	10.44
If there are many layers of management in the parent companies	8.15
If one company has more influence than others	7.83
If they cannot work without referring to the parent companies	7.67
If involved companies have highly formalised management control systems	6.96



As can be seen in Table 11.27 and 11.28, both the groups highly rank mishandling of information in terms of, 'use of confidential information for own benefit', 'withholding information which is important to other' and 'passing of misleading information' as detrimental to fostering trust in a collaborative relationship, although the sequence of ranking of the statements and the ranking scores are not similar.

#### ***11.6.5 Cluster analysis***

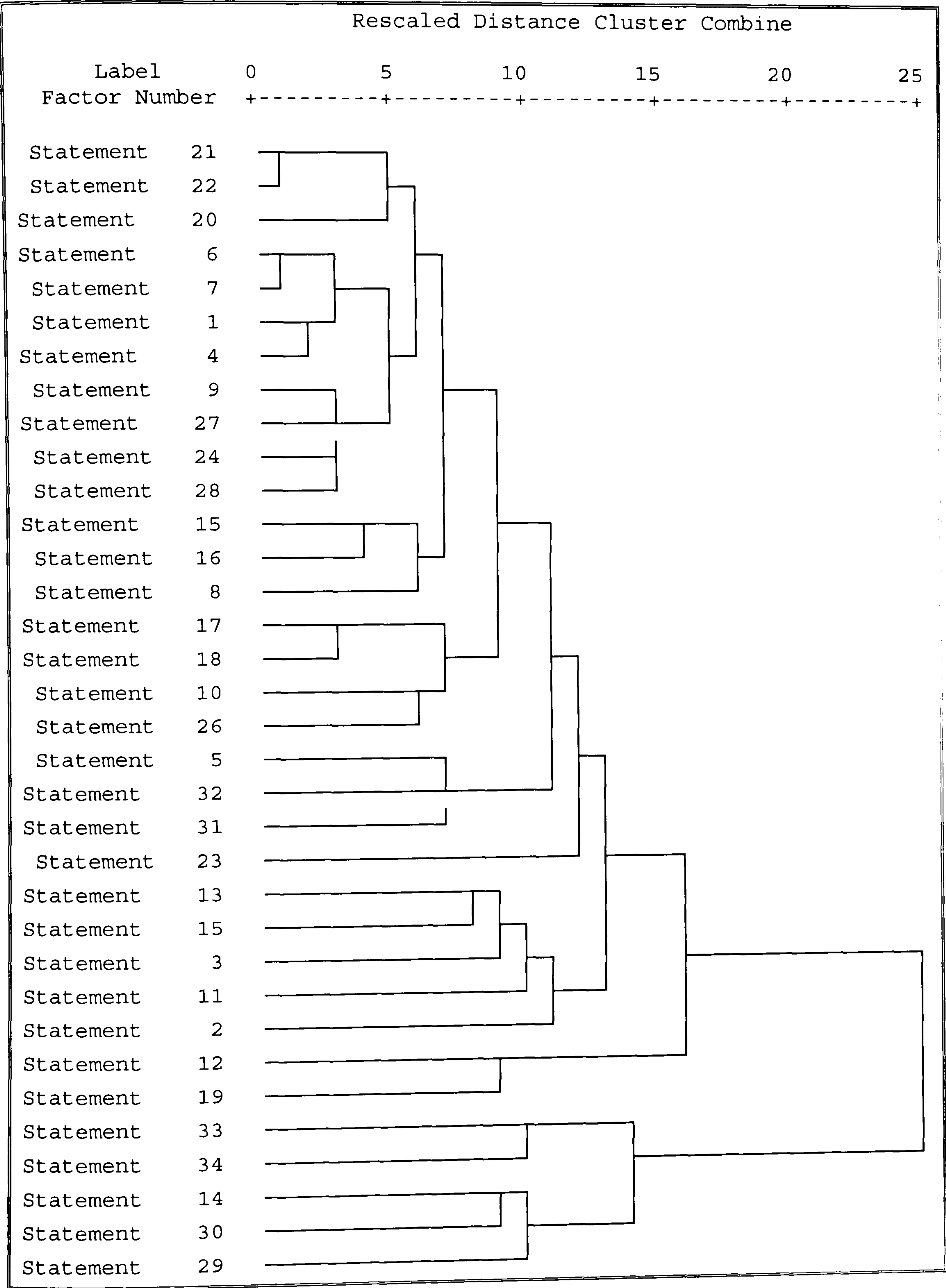
Again all the 34 statements about the barriers to trust were subjected to cluster analysis to explore whether they form any kind of groups. The result of the cluster analysis is presented in a dendrogram in Figure 11.11. The figure demonstrates that by sectioning the dendrogram at two different levels, it may be possible to get three different clusters from the 34 variables (statements). Statement numbers in the dendrogram represent same statement numbers which were used in the questionnaire ( See Appendix 4).

From the dendrogram it can be seen one obvious cluster of 11 variables, when it is sectioned at level 3. Another cluster may be formed when the dendrogram is sectioned at level 7, which contains another ten variables. The rest of the 13 variables may be combined together to form a third cluster. Clusters analysis shows that the formation of clusters interestingly follows a similar pattern as they (factors) are ranked by Friedman's rank analysis according to their priority. The 11 variables which form the first cluster, are the variables which have been ranked high in the preference ranking scale by the respondents. Again, all the variables in the second cluster have been identified as moderately important, and ranked in the middle, and the variables in the third cluster have been placed at the bottom of the ranking scale and identified as least important. In other words, it may be suggested that Friedman's analysis and cluster analysis supplement each other in prioritising the factors or issues which often hinder in the establishment of trust in collaborative relationships.



Fig 11.11

Dendrogram Presenting Linkage between Barriers to Trust





## **11.7 Relationship between perceived level of trust and perceived level of success in collaborative relationships**

### ***11.7.1 Introduction***

One of the objectives of the study was to understand the type of relationship between perceived level of trust within an alliance and its perceived level of success. Before identifying the relationships it was necessary to measure the level of trust and the level of success in the surveyed alliances. It may be appreciated that measurement of the level of trust present between people and the level of success are very difficult, as there are no universally accepted rules and methods to measure them. Following sections describe the methods which were used to measure trust levels and success levels in the relationships.

### ***11.7.2 Perceived level of trust present in the relationships***

There is no straightforward way which could be used to measure the level of trust between people, therefore, we used some indicators of trust in a relationships. From the literature review we identified different factors, the presence or absence of which in a relationship may indicate the level of trust in that relationship. Some examples of such indicators are ‘placing high value on the relationship’, ‘not disclosing secrets outside the relationship’, ‘offering technical assistance to each other’, ‘people do not break their promises’, ‘people work together as a combined team’, ‘people are honest during negotiation’, ‘people understand each other problems’, ‘risks and rewards are fairly shared’ etc. To measure the level of trust in the relationships, 31 statements were made, relating to different indicators which were mentioned in the literature. Those statements were put on a Likert type scale, constructed with five mutually exclusive response categories (i.e. 1= strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree, WO = without opinion). The respondents were asked to indicate the degree to which they believed the factors were present in their respective relationship by circling the appropriate numbers. Respondents who were not sure about any indicator and/or would not want to provide any opinion could select ‘without opinion’ option. Before performing any



analysis the scores were however, inverted, to put highest weight on strongly agree option and lowest weight on strongly disagree option.

As mentioned in the chapter on methodology that the respondents were selected from five different relationships i.e. A, B, C, D and E. The number of respondents of each relationship varied a great deal due to variation of the magnitude of relationships, number of people involved in the relationships, alliance experience of the people involved, and accessibility. As can be seen in the Table 11.29 the 100 respondents from five different relationships provided altogether 2957 answers out of possible 3100 answers, and in 143 cases they either checked ‘without opinion’ option or did not check any option.

**Table: 11.29            Counts of responses on perceived level of trust in different relationships**

Alliance Name	Number of respondents	Count of actual responses	Number of possible responses	Without opinion
A	18	551	558	7
B	6	180	186	6
C	44	1315	1364	49
D	14	399	434	35
E	18	512	558	46
Total	100	2957	3100	143

To measure the level of trust in different relationships average scores of all the statements articulating the indicators of trust were calculated, which are shown in Table 11.30. As can be seen the highest level of trust is present in alliance ‘B’ which is followed by alliance ‘A’. The other three alliances i.e. ‘C’, ‘D’ and ‘E’ have more or less similar levels of trust which are lower than alliances ‘A’ and ‘B’.

**Table: 11.30            Average scores of perceived level of trust in different relationships**

Name of Alliances	A	B	C	D	E
Average scores on perceived trust level	3.78	3.98	3.23	3.26	3.31



### 11.7.3 Perceived level of success of the relationships

Measurement of success of a collaborative relationship is also often a difficult task. One of the major difficulties of measuring success is setting up of the criteria. The criteria may vary with the variation of the type of company, size of company, their short-term and long-term goals, the business environment they operate in and the perceived attitudes on success and failure. The first study identified perceived success and failure criteria in alliancing and partnering in the UK oil and gas industry and these criteria were used to measure the perceived level of success of the five relationships. Factors like, ‘achievement of goal in terms of cost saving’, ‘achievement of target in term of time’, ‘increased volume of business’, ‘presence of safety performance’, ‘presence of shared risks and reward’, ‘achievement of shared aligned goals’, ‘achievement of goal in terms of production’, ‘continuity of work’ are used as the criteria to measure success of a collaborative relationship in the UK oil and gas industry (Haque *et al*, 2000). Altogether 11 statements were made in the questionnaire articulating those success criteria. The respondents were asked to indicate the degree to which they were present in their relationship by scoring the statements as follows: 1 strongly agree, 2 to agree, 3 neither agree nor disagree, 4 disagree, 5 strongly disagree and WO (without opinion). Again, the scores were inverted to put highest weight on strongly agree option and lowest weight on strongly disagree option and WO was considered as missing value during analysis of the data. Counts of the responses of the five relationships are shown in Table 11.31.

**Table: 11.31 Count of responses on perceived success level in different relationships**

Alliance Name	Number of respondents	Count of actual responses	Number of possible responses	Without opinion
A	18	196	198	2
B	6	60	66	6
C	44	454	484	30
D	14	144	154	10
E	18	174	198	24
Total	100	1028	1100	72



Average scores on perceived level of success for each of the alliances was also calculated which are presented in the following table (Table: 11.32). As can be seen the highest perceived level of success is present in relationship ‘B’ which is followed by relationship ‘A’. Relationships ‘C’, ‘D’ and ‘E’ have lower level of success in comparison to the other two relationships.

**Table: 11.32**            **Average scores on perceived level of success in different relationships**

	A	B	C	D	E
Average scores on perceived success level	3.85	4.02	3.23	3.34	3.34

***11.7.4 Relationship between level of trust and level of success in collaborative relationships***

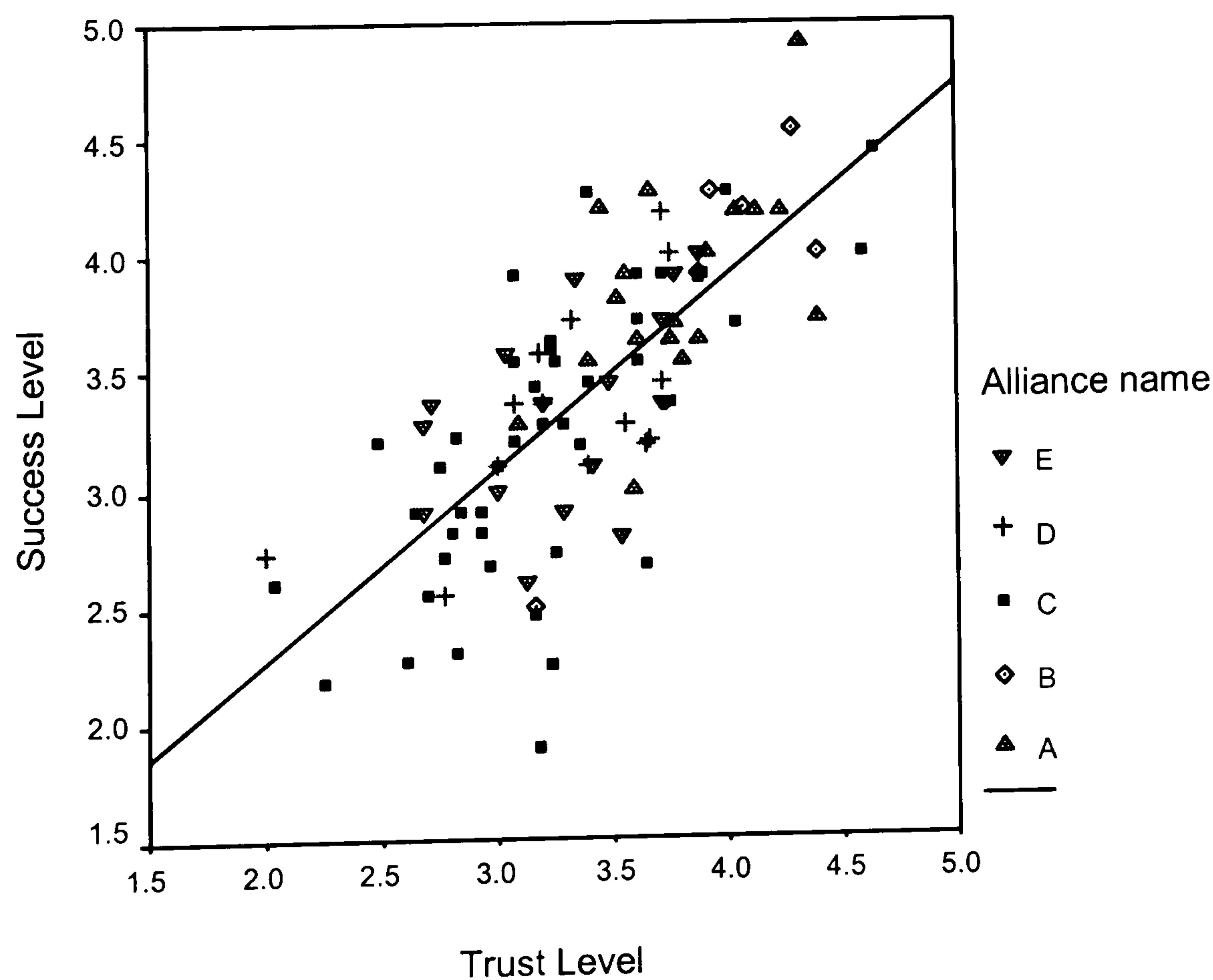
Having done the calculation of average scores of trust levels and success levels in the relationships, investigation was done to identify the relationship between these two phenomena. To explore the correlation between perceived level of trust and perceived level of success in the relationships surveyed, two different perspectives were applied. Firstly, the correlation was examined from the perspective of all respondents and secondly, from the perspective of five surveyed collaborative relationships. To analyse the relationship from the perspective of all respondents, their average scores for the 31 statements on trust indicators were calculated. Similarly respondents’ average score for 11 statements on criteria of success were calculated, which are shown in Appendix 5. An inspection of data on trust level and success levels of each respondent indicated that there might be some association between two variables as we could see that a change in the value of one variable went hand-in-hand with a change in other variable. To have a clear idea about the association, the data was arranged in a scatter plot by putting the values of independent variable (level of trust) on the vertical axis and the values of dependent variable (level of success) on the horizontal axis, and a regression line was fitted through the scatter plot of cases that ‘best fits’ the data (Figure: 11.12). The scatter diagram enables us to observe the data graphically and to draw preliminary



conclusions about the possible relationship between the variables (Anderson *et al*, 1996). An examination of the plot indicates that the two variables appear linearly related. The relationship was also examined from the perspective of total average scores of the five alliances.

To examine the relationship from the perspective of the five relationships separately, average scores on the ‘level of trust’ and the ‘level of success’ of each relationship were calculated on the basis of total average scores of all the respondents belonging to that relationship. The scores were arranged in a scatter plot by putting the values of dependent variable (success level) on the vertical axis and the values of independent variable (trust level) on the horizontal axis with different symbols for different relationships ( see Figure. 11.13).

**Figure 11.12 Scatter diagrams of respondents’ average scores on perceived level of trust and perceived level of success**

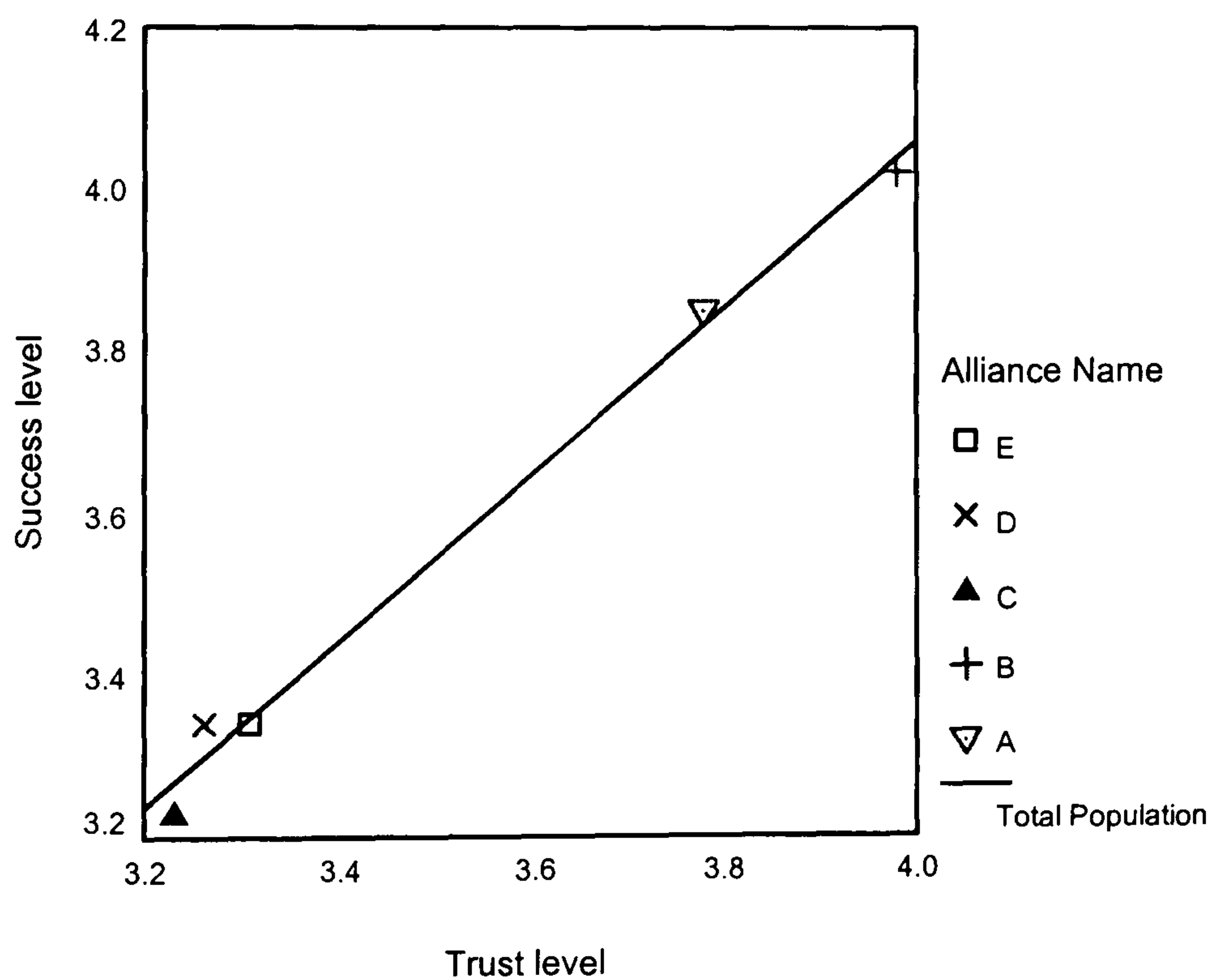




A regression line was also fitted through the scatter plot of alliances that ‘best fits’ the data. The scatter plot of the two variables showed a clear relationship. Level of success appeared to be higher with higher level of trust in a relationship. In addition, points of the coordinates of different relationships appeared to be approximated by a straight line.

Having identified a positive relationship between level of trust and level of success in collaborative relationships, a linear regression analysis was conducted to evaluate the success level from the overall trust level in collaborative relationships.

**Figure 11.13** Relationship between level of trust and level of success in different alliances



Results of the regression analysis are shown in Table 11.33 and Table: 11.34. From the results of regression analysis it may be possible to predict the level of success from the level of trust in a collaborative relationship. The scatter plot for the two variables, as shown in Figure 11.12 and 11.13, indicate that the two variables are linearly related. That is to say when overall trust level increases the overall success level also increases.



Table: 11.33

Regression Model Summary

R	R square	Adjusted R square	Std. error of the estimate
.726 <sup>a</sup>	.527	.522	.411

a. Predictors: (constant) Trust level

b. Dependent variable: Success level

Table: 11.34

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardised Coefficient	t	Sig.
	B	Std. Error	Beta		
(Constant)	.620	.271	.726	2.284	.025
Trust Level	.822	.079		10.401	.000

a. Dependent Variable: Success Level

The correlation between trust index and success index is .726. Approximately 52% ( $r^2 = .527$ ) of the variance of the success level index is associated with overall trust level. The regression equation for predicting the overall success is:

*Predicted overall success of a collaborative relationship = .822 Overall trust level + .620*

The study has identified a strong relationship between the level of trust present in an alliance and level of success for that alliance. However the fact that perceived success and perceived trust go up and down together does not mean there is a causal relationship between them. It may be argued that possibly a virtuous spiral exists between trust and success, where success brings trust and trust brings success. As opposed to the virtuous spiral there may also be a vicious spiral where distrust brings failure and failure bring distrust. Again before making any conclusion from the finding one should consider the difficulties of measuring those two abstract issues, limitations of statistical analysis, human error, and involvement of other factors which are discussed in the next chapter.



## CHAPTER 12

### DISCUSSION ON THE SECOND PHASE STUDY

#### 12.1 Introduction

Having identified presence of trust as the most important critical success factor in alliancing and partnering in the first phase study, the second phase took the form of a detailed study of 'perception of trust in collaborative relationships in the oil and gas industry'. The study investigated the meaning of trust, factors or conditions which help to develop trust, factors or conditions which diminish trust, and the effects of the presence of trust in collaborative relationships in the UK oil and gas industry.

#### 12.2 Sample

Information/data for the study was collected from 100 respondents who belong to five relationships involving 21 companies from the North Sea oil and gas industry. The relationships were established to accomplish different joint activities in the industry for example, construction and maintenance of platforms, well construction and maintenance, engineering and maintenance management, procurement, material and stores manning and management, etc.

People from all levels, i.e. senior managers, middle managers and technical specialists working in different types of companies i.e. operators and contractors participated in the study. Rather than selecting randomly, the respondents were selected on the basis of their experience. This may raise questions about the external validity or generalisability of the study. It may be argued that although absence of random selection of respondents has, to some extent, reduced the level of external validity of the study, nevertheless, the preferred selection method has made it possible to select people who had experience of either managing or working in



collaborative relationships and who were able to provide more accurate information from their experiences for this specialised study.

### **12.3 The Meaning of Trust**

The first part of the questionnaire aims to understand what people meant when they think or speak about 'trust'. Trust is an abstract social phenomenon and the meaning of trust may be different for different people in different circumstances. Based on one person's disposition, experience and values, trustworthiness is also perceived differently. In a working relationship the expectation of a trustor from a trustee may be different in different circumstances. For example, a person 'A' may place trust in another person 'B' for his competence to do certain work, or 'B' is known to 'A' from previous working experience, or 'B' has limited opportunities of taking advantage of 'A'. Close observation of these three reasons for placing trust indicates that they represent three separate kinds of trust namely, competence trust, process-based trust, and weak form of trust as described in the literature review in chapter 8. That is, when a person thinks or speaks about trust he or she may have in mind some of the many types of trust identified in the literature.

To understand the meaning of trust between people in working relationships in the oil and gas industry, 18 statements were created, each stating one type of trust. The 18 statements related to 13 types of trust, as for some types of trust there were more than one statement. The 13 types of trust are contractual trust, competence trust, process based trust, strong form of trust, cognitive trust, normative trust, deterrent based trust, calculative trust, good will trust, semi-strong form trust, weak form trust, institutional trust and characteristic based trust. Respondents scored each statement separately to indicate their agreement, disagreement, or neutral position about the statement. The priority of a statement was measured by the total scores of that statement. Friedman's test was performed to rank the statements. Friedman's mean ranking distinguished the most preferred statement from the least preferred statement while taking consideration of their obtained scores (Henry, 2000). Cluster analysis



was performed to group the statements depending on their obtained scores. Both of the statistical analyses show a similar pattern of grouping of the statements, which have obviously strengthened the grouping of the statement that will be discussed in this chapter.

In hindsight, the ideas of making statements were generated from the literature review and the first phase study, as well as researcher's own social and working experiences. Although 18 statements were made to express 13 types of trust, there is the possibility that the researcher had not come across some other kinds of trust during or before the questionnaire was made. As a result the questionnaire may not have included all types of trust which may exist in working relationships. Although the statements were made simple, clear and concise however, it is possible that at some point some of the respondents were confused in choosing the appropriate response category and had chosen the responses which do not reflect his or her true opinions from the supplied response category (i.e. 1= strongly agree, 2= agree, 3= uncertain, 4= disagree, 5= strongly disagree).

### ***12.3.1 Highly ranked trust types***

Ranking of the statements of different types of trust indicates that in the oil and gas industry alliances, 'contractual trust' is considered as the most important type. In contractual trust, it is believed that an individual will do what he said he would do. That is, the person will keep his promise and uphold universal ethical standards or norms. Keeping promises is the fundamental basis which enables trust to be established between people. If someone makes a promise that he does not intend to keep, he uses others as means, not ends. In a situation where someone believes that he has been cheated by another, it would be almost impossible to grow trust between them.

People consider that 'competence trust', where trust is based on the collaborative partner's knowledge and skill to carry out required tasks, is the second most



important type of trust. Companies working in the UK oil and gas industry are involved in a complex business which requires sophisticated technologies and skills from a wide range of industrial sectors. Again, people have to work in very harsh environment where a small error can cause disaster. In such an environment people must be competent to carry out the tasks to which they are assigned. One may argue that the respondents have given high priority to competence trust because of the high degree of competence that is required to work in the offshore environment. If trust is placed on incompetent people, and they are employed to work in the sensitive offshore environment (e.g. installation of a platform), their incompetent action may cause great losses for the collaborative project.

As would be expected, process-based trust and strong form of trust are also ranked highly by the respondents. Process based trust arises from previous experience. When people gain pleasant experiences by working together in the past, this will encourage them to place trust in each other next time, as the foundation for trust has already been laid before. The strong form of trust is about belief in the standard of behaviour of the other. The belief would be gained through direct working experience or from the information which is in the public domain. When company 'A' believes that it would be against the standard of behaviour of another company 'B' to take advantage of them, then company 'A' will be willing to place trust in 'B'. This type of belief may develop either through previous transactions or from the available information. When a person or an establishment demonstrates repeated trustworthy behaviour for a considerable time, this encourages others to believe that trusting behaviour is the norm of that establishment and it would be against their standard practice to take advantage of others.

One interesting point must be made here. It is often difficult to distinguish whether trust is placed in people or in the organisation they work for, as far as the organisational trust is concerned. It is the people who represent an organisation and deal with other people of another organisation. When a person exhibits repeated



trustworthy behaviour he becomes a more trustworthy person, so the organisation he represents also become more trusted. It is between the people components of collaborative organisations where trust is grown or decays.

In the oil and gas industry people place trust in someone whom they believe to have a similar kind of thinking. This type of trust is classified as cognition based trust. Sharing of cognition provides a basis for understanding of a partner and for predicting that partner's actions. For example, if two companies adopt a similar policy on sharing risks and rewards, or safety standards, this would provide them with a platform of common cognition and give confidence to trust each other on those matters. Trust that is cognition-based, rests upon the knowledge people have of others and the evidence of their trustworthiness (McAlester, 1995).

### ***12.3.2 Moderately ranked trust types***

The respondents have placed some types of trust in the middle of the ranking scale. Normative type trust is the first type of trust in this group. Normative type trust depends on collaborative partners sharing common values, including common concepts of moral obligation. Common values and norms of moral obligation can develop in a long-standing relationship where trust was originally created in an incremental manner. Collaboration in the UK oil and gas industry is mainly characterised by long term relationships, which allow the partners to understand each others' values and norms of moral obligation. When the alliance partners realise that they share values and norms of moral obligation, it encourages them to place trust in each other further.

This group also contains the types of trust which involve calculation of the risks of trusting others, and the deterrents that inhibit other people's advantage taking behaviour. People place trust in their working partners in situations where they believe that risk of such trust is low. This type of situation may arise in offshore



collaboration where some types of service contracts are concerned, for example, contract for supplying utilities, food etc.

Again, people working in a collaborative relationship perceive that they would trust others if there were enough deterrents in the system to inhibit advantage-taking behaviour. Deterrents reduce or stop advantage taking behaviour because in such situations the potential cost of advantage taking behaviour or breaking trust is much higher than the benefit gained. For example, when an operator places an order to a contractor for a certain job, and the contractor performs the job without meeting the specified standard, there is every chance that the operator will not trust the contractor again and offer him another job. It is possible that because of this deterrent, the contractor will make sure that the job is done properly. Again, if there were provisions of penalties for breaking trust, it would encourage people to behave trustworthily. In civilised societies, some deterrents e.g. losing name or fame, inhibit people from taking advantage of others, and encourage them to behave trustworthily.

Goodwill trust is another important type of trust which belongs to this middle-ranking group. Good will trust refers to mutual expectations of open commitment to each other. There are no explicit promises or professional standards which are expected to be fulfilled in goodwill trust. One collaborative partner is free to take actions in favour of others which would be beneficial to them. In 'good will trust' mutual expectation is higher than other type of trust e.g. 'contractual trust' and 'competence trust'. Lack of opportunistic behaviour, which applies most to other types of trust, is not a sufficient condition for good will trust. For example, a collaborative partner who withholds new technological information may be not acting opportunistically, however in goodwill trust it is expected that the partner would not withhold the information but would voluntarily pass it to his partner. Here one trading partner is committed to taking initiatives (or exercising discretion) to exploit new opportunities for the other, over and above what was explicitly promised (Sako, 2000).



It may be interesting to note that goodwill trust has been placed fairly low in the ranking list. If we believe Sako (1992, pp. 31-48) we would expect goodwill trust to figure strongly in mature collaborative relationships. But in this survey it was ranked 10<sup>th</sup> out of 18, which is a bit of a surprise. There may be number of reasons behind it. Firstly, it takes time and suitable environment to grow this kind of high standard trust. It involves a gradual expansion in the congruence in beliefs about what is acceptable. In an industry like oil and gas, it may not be appropriate to expect predomination of goodwill trust because only ten years ago business transactions were mainly conducted in an adversarial and opportunistic environment (Woolfson *et al*, 1998). Secondly, the study only considered the UK business environment where trust between partner companies is much lower than that in Japan (Sako, 1992). Thirdly, there are strong similarities between strong form of trust, normative trust and goodwill trust. Respondents' opinions may have scattered among the three types of trust, as the responses to the three combined rate highest. Finally, it may also be possible that our statement didn't properly reflect what Sako meant by goodwill trust and thus it did not attract sufficient responses.

Weak and semi-strong forms of trust are two further types of trusts which have received moderate priority. Weak form of trust exists in an environment where it is believed that there is limited opportunity of taking advantage of another. It may be argued that, the weak form of trust has received less priority here because in the oil and gas industry this state of affairs is unusual. The industry is involved in a business which requires highly sophisticated technologies, involves huge resources, and profits are also very high here, and therefore there are many opportunities for advantage taking. Another possible reason is that, when deciding to trust another person, our respondents do not give much thought to whether there are many advantage taking behaviours or not.

Semi-strong form of trust arises in a working relationship where a collaborative partner feels that a formal contract would stop the other taking advantage of him. A



formal contract sets out the rights and obligations of the parties to be followed during their courses of action. It also ensures that the relative novelty of the collaborative attitudes does not itself serve as the catalyst for disputes (Beggs, 1998). In a collaborative relationship the parties do not set out with the view that the relationship will deteriorate. However, the fact is that if a dispute does end up in court, the main evidence of parties' intended obligations towards each other will be the partnering agreement they signed. The court's decision will turn upon the particular terms of that agreement. An agreement or contract of this kind provides the confidence which is needed to place trust in other collaborative partners; in other words partners trust each other assuming that the contract will stop them taking advantage of each other.

The majority of the relationships in the UK oil and gas industry are based on conventional contract. The agreement to collaborate and the terms of the risk and reward structure are often contained in a separate alliance agreement which goes with the main contract. However, the respondents have not given importance to the semi-strong form of trust. They have also given very little priority on the importance of formal contract in development and maintenance of trust, which is discussed in this chapter later. It is surprising that formal contract has attracted so much less importance when most of the relationships are based on formal contract. Possible interpretation may be that the respondents do not believe that formal contract is important when it comes to the question of trust.

#### ***12.3.4 Low ranking trust types***

The statements which paraphrase institutional trust are placed at the bottom of the ranking list. Institutional based trust is tied to formal societal structure depending on firm specific attributes. Sources of institutional based trust are traditions, certifications, brand name or memberships in certain associations (Lane and Bechmann, 2000). The analysis suggests that in the UK oil and gas industry institutional based trust is not considered important. It suggests that people in the oil



industry consider the person, rather than the institution he or she belongs to before placing trust in him or her.

In relation to this finding two arguments may be made. Firstly, it would seem logical to say that it is always the people and not the organisations that trust each other. Barney and Hansen (1994) also suggest that exchanges between firms are exchanges between individuals or small groups of individuals. Secondly, even though a person belongs to a reputed company, it carries no assurance that he will behave in a trustworthy manner. On the other hand, if a person belongs to a company with which there has been no dealing previously it will not stop him being trustworthy. The thing that matters more in the industry is the people's attitude or motivation towards trustworthy behaviour. Nevertheless, it is argued that it is easier to develop a trust based relationship if the risks involved are reduced by institutional mechanisms such as effective law to enforce contracts and/or a strongly developed moral opprobrium for any violation of the social norms applying to trust.

Another form of trust which has been placed at the bottom of the ranking list is characteristic based trust. Like other types of trust characteristic based trust is independent of a concrete exchange experience. The sources of this kind of trust are personal characteristics such as age, sex, or belonging to a particular ethnic or social group. The study reveals that in the oil and gas industry personal characteristics are given low priority before placing trust, as the analysis shows that characteristic based trust is placed at the bottom of the ranking list. It may not be surprising that characteristic trust has least priority, because in the oil and gas industry, people from diverse nationalities, ethnic backgrounds, ages and sexes are engaged in different kinds of jobs. If trust were placed in people considering just their personal characteristics it would have negative impact on the industry working relationships. The reasons for this is that in such situation one group would find it difficult to trust another group because that they have different personal characteristics.



The analysis shows that when people in the oil and gas industry think or speak about trust they bestow some priority to one type of trust over another. However, it may often be difficult to understand the type of trust which is considered by the trustor when he places trust in another. Sometime the trustor may be influenced by two, three or even more types of trust before or during placing trust in others.

To make it clear we may consider two examples. In contractual trust, it is expected that people will do what they said they would do. Company 'A' places contractual trust in company 'B' for delivering a supply in time, because they said they would do it. However, it may be possible that company 'B' will deliver the supply not only because they have said they would, but also because there are some deterrents in place in the social system, e.g. loss of reputation or some other kind of penalties. That is to say, in a situation like this, deterrent based trust and contractual trust both contribute to the trust development process. To take another example, 'A' promises 'B' that he would do some work for him and performs the task perfectly. This may encourage 'B' to believe that 'A' is very competent and ultimately competence trust will be developed. Now it is likely that 'B' will trust 'A' to do a similar job a second time. It may be argued that 'B' is influenced here by three kinds of trust, first contractual trust as 'A' has kept his word, second 'competence trust', as he has done the first job competently, and third 'process based trust'. From the first job 'A' has become known to 'B' as a good worker, which would encourage him to place trust in 'A' again for the second job. In process based trust people trust others as result of experience.

In summary, from an analysis of the whole sample the answer to the research question 'what do people who work in oil industry alliances mean when they speak or think about?', appears to be that people consider others' commitment, capabilities, standard of behaviour when they speak or think about trust. Previous experience and commonalties in values or norms are also very important in this regard.



### ***12.3.5 Variation between groups***

As mentioned earlier, the respondents were divided into different groups depending on their organisation types, job levels, and experiences in working with collaborative relationships. Analyses of variance tests were performed to see whether there was any difference in the opinion of different groups. However, the tests show that there is no significant difference between the groups. Analyses of variance tests were also performed on the data in relation to effects of presence of trust, factors which enable trust and factors that can threaten trust, which are discussed later in this chapter, to see whether there was any difference in the opinion of different groups. The tests show no significant difference between the groups.

### ***12.3.6 Attitudes towards trust***

From the responses of the statements on trust type it was possible to divide the respondents on their attitudes towards trust. Attitudes may be seen as knowledge, beliefs and feelings about other/s and means through which interactions with others are defined and structured (Jones and George, 1998). There has already been discussion in the chapter on analysis (chapter 11) on how the respondents were divided into three groups i.e. 'Trusting', 'Neutral', and 'Non-trusting' based on the scores they provided to the statements on meaning of trust. The trusting group has a high propensity to trust, that is, they have positive attitude towards trust. They are less doubtful about others and place trust in others easily. From past experiences, knowledge and interaction they may have developed value systems which encourage them to trust others. Jones and George (1998) believe that values may create a propensity to trust, which is more basic and general than trust based on specific situations and relationships. Values are general principles or an individual's guiding system. They are relatively permanent and make a setting for the experience of trust.

The Non-trusting group is on the other side of the trusting attitude continuum. These people are very suspicious and do not trust others easily. They do not easily find a reason to trust others because their attitude is driven by suspicion. Perhaps they have



had negative experience of partners' opportunistic behaviour in the past which has made them afraid of trusting others. Therefore, they consider many things before placing trust in anybody and that most of the time they do not trust others.

'Neutral' group is in the middle of trusting attitude continuum. Perhaps this group of people does not trust other people right away, first analysing the circumstances, then judging the others' attitudes before placing trust in them. When they are reasonably convinced that the others would keep their promise, or would not take advantage on them, they trust them.

Further analysis of the respondents' opinions from the perspective of their trusting attitudes, shows that peoples' trusting attitudes have significant influence on their opinions on different issues related to trust e.g. effects of presence of trust between collaborative partners, conditions which increase or decrease trust between them etc. From this finding it may be argued that the make up of a person's trusting attitude influences greatly his or her thinking on different issues related to trust.

Understanding the link between peoples' values and their propensity to trust might be an interesting area for further research. This kind of study might enable us to comprehend the process involved in developing trust, that is why people trust or distrust other? What kind of characteristics or social background makes a person more trustworthy? What social background has most or least influence on peoples' attitude on trust? What is important in making social and business environment trustworthy? What changes peoples' attitudes towards trust? etc.

#### **12.4 Effect of Presence of Trust in Collaborative Relationships**

It has been suggested in the literature that presence of trust between collaborative partners can provide a number of benefits to them e.g. it may act as a governing mechanism against opportunistic behaviour, increase comfort between collaborative



partners, reduce transaction costs and so on. It is also suggested that presence of trust in a working relationship can have some apparently negative effects e.g. loss of power by some partners, increased risk of misuse of confidential information.

Opinions were gathered on this issue from the people working in the oil and gas industry by asking them 'What is the effect of the presence of trust in the UK oil and gas industry?' People put forward their opinions by scoring 23 statements on effects of trust in collaborative relationships. Friedman's test was performed to rank and group the statements depending on their scores. Cluster analysis was also performed to separate the statements into different clusters. Friedman's ranking and cluster analysis allowed the statements to be split into three groups.

#### *12.4.1 Highly ranked effects*

Four effects of trust comprise the highest ranking group:-

- allows people to depend on each other with confidence
- makes each person feel more comfortable about the relationship
- improves the efficiency of joint activities
- enables increased co-operation between companies

It is interesting to observe that the respondents see a kind of link between high trust and improved efficiency. The other three effects can be said to relate to the health of a relationship and the effects have clear linkage between them. If co-operation between companies is increased then it would enable the efficiency (and effectiveness) of their joint activities to improve, because there will be reduced barriers to efficient working arising from bureaucracy, lack of communication, mutual suspicion etc. Co-operation between companies can increase if people feel so comfortable about the relationship that they are confident in depending on their colleagues from other companies.



#### ***12.4.2 Low ranked effects***

The effects of trust which are ranked lowest by the respondents are:-

- allows companies to use confidential information for their own benefit
- increases vulnerability of the companies involved
- benefits only the powerful companies in the relationship

Each of these suggest a possible negative effect of high levels of trust in a collaborative relationship, and clearly the respondents indicate that they do not agree that presence of trust can create those kinds of problems in their industry. Rather, they are positive about the importance of presence of trust in their working relationships. This view is also supported by the first phase study where a different set of respondents have identified presence of trust as the most important success factors of alliancing and partnering in the industry.

#### ***12.4.3 Medium ranked effects***

The remaining effects, which received a medium ranking, are listed below. Related effects have been grouped together:-

##### ***Reduced cost***

- reduces cost of co-ordinating the task contractors and suppliers
- reduces the costs of maintaining the relationship
- reduces business operation cost

##### ***Reduced barriers to doing business***

- enables new work to be initiated more easily
- enable free flow of information
- enables companies involved to adapt more easily to unforeseen circumstances
- reduces the bureaucratic barriers to getting work done



### *Reduced fear and uncertainty*

- reduces uncertainty regarding peoples behaviour
- reduces the fear of opportunistic behaviour

### *Rewards to the companies involved*

- enables the companies to agree to share risks and rewards
- results in increased innovation and learning
- improves competitive advantage of companies involved
- increases the volume and scope of business

To summarise, with regard to the research question "What do people, who work in alliance in the UK oil and gas industry, perceive as the effects of presence or absence of trust in relationship?" the study suggests that presence of high level of trust in a collaborative relationship makes the relationship more comfortable, where people can depend on each other with confidence and enable increased co-operation between partners resulting in higher efficiency in joint activities. The study also suggests that people do not consider that presence of trust increases the vulnerability of the companies involved or benefits only powerful companies in the relationship.

## **12.5 Factors Which Enable Trust in Collaborative Relationships**

Trust is an abstract dynamic social phenomenon, development of which is dependent on the fabric of social bonding between people. Many factors individually and collectively influence the development of trust in working relationships. These factors may be different in different types of industry, at different stages of relationships, in different social, cultural and economical environment of the industry, at different geographical regions and so on.

The study which is discussed in this chapter aimed to identify the factors which have greater influence, and the factors which have greater or lesser influence in developing trust between collaborative partners in the UK oil and gas industry. In



total, 34 statements, describing different conditions or factors, which enable trust to develop in collaborative relationships, were made in the questionnaire. The respondents scored the statements by expressing their agreements or disagreements. Friedman's ranking test was performed to rank the statements and cluster analysis was performed to group them according to their obtained scores. The factors were grouped into three, according to their priority. Out of the 34 statements, 11 fall into the high priority group, 18 are in the moderate priority group and five are in the least priority group. The statements which fall into the high and low priority are discussed below.

### ***12.5.1 Highly ranked trust enablers***

The trust enablers most highly ranked by the respondents have been put into groups depending on their function, and are presented as follows:-

#### *Lack of opportunistic behaviour*

- consistency of peoples' actions with their words
- not misleading each other
- negotiation in an atmosphere of honesty
- non exploitation of temporary weakness
- high value placed on the relationship

#### *Close working relationship*

- face to face contact with collaborative partners
- working together as a team
- experience of working together

#### *Communication*

- frequent communication
- communication and information exchange
- open discussion to solutions to problems



These three groups are clearly linked in that close working relationships naturally lead to and depend on high levels of communication. If within a close working relationship people keep their promises and refrain from advantage taking behaviour, then trust will flourish.

The high ranking of honesty and the keeping of promises as enablers of trust seems to be in line with respondents' choice of contractual trust as their most considered trust type. It is difficult to work in an environment where people do not keep promises. Kant (1724-1804), the famous philosopher, suggested that it is always wrong to make false promises - promises which we do not intend to keep - and if everyone adopts and acts on a principle of making false promises, no one would trust anyone else, or believe that they would honour their promises. When collaborative partners understand that other partners will not take advantage of them they will be confident in placing their trust. We saw in chapter 8 that Dwyer and Lagace (1986) believe that trust will grow when partners' behaviour is seen to be non-manipulative, non-evaluative, problem solving, spontaneous and tentative. A similar view is advanced by Bromiley and Cumming (1992) that feeling of trust will develop as expectations grow that the partners keep commitments, are honest in negotiations, and will not take advantage of another's vulnerability.

Close working relationships, with face to face contact, are also highly rated as enablers of trust. Close contacts allow collaborative partners to understand each other's values, norms and moral obligations which enable them to predict or understand others' likely behaviour in business exchanges. Close contact also creates opportunities to establish bonding between the partners and encourages trust to develop between them. Shapiro *et al* (1992) argue the more knowledge or contact parties have the better the chances they will come to understand and predict each other's behaviour. Close contact allows sharing of the cognition and common ways of thinking between the parties concerned. Sharing of cognition provides a basis for understanding of a partner and for predicting a partner's actions. Common cognition



provides the assurance that one can reasonably predict other people's behaviour on the basis of shared expectations (McAlester, 1995). Close contact allows collaborative partners to obtain knowledge that is vital in placing trust on each other. Simmel (1964) suggests that it is always good to place trust with informed knowledge rather than placing blind trust in somebody. However, it is also argued that the amount of knowledge necessary for trust is somewhere between total knowledge and total ignorance. Given total knowledge, there is no need to trust, and given total ignorance, there is no basis upon which to trust rationally (Lumann, 1979). Past working experiences make people aware of their working partners' moral obligations, propensity to keeping word, honesty, sincerity, and competency through the concrete experience of social and/or economical exchanges. If a collaborative partner showed trustworthy behaviour in the past it may be expected that he or she would do the same in the future transactions. As we saw in chapter 8 Zucker (1986) characterised this kind of trust as process based trust. Child and Faulkner (1998) suggest production of trust in this mode arises through the mutual reinforcement of investments in trust and the quality of co-operation associated with it. The security and stability of such recurring reciprocal exchanges enable learning and engender trust (Creed & Miles, 1996).

The third group of highly ranked enablers relate to communication, which is linked strongly to the idea of close working relationships. The relationships should be nurtured by frequent open communication, open discussions of solutions to problems, having regular meetings with each other, working as a team etc. Open discussions increase transparency and keep everyone aware of what is happening. The chances of misunderstanding are thereby reduced. Regular communication keeps the parties in constant contact with others, and helps to exchange information about wants, performance and approaches to problems. Lewicki and Bunker (1996) argue that without regular communication, one can 'lose touch' with the other not only emotionally but in the ability to think alike and predict the reaction of others.



Although it is generally suggested that openness and communication allow trust to develop between people, recently, O'Neill (2002) has observed that openness and availability of information does not necessarily lead to increased trust. She suggested that, "There has never been more abundant information about individuals and institutions. ...Openness and transparency are now possible on a scale of which past ages could barely dream. We are flooded with information about government departments and government policies..... So if making more information about more public policies, institutions and professionals more widely and freely available is the key to building trust, we must be well on the high road towards an ever more trusting society". However, she observes that, "mistrust and suspicion are on the increase in our society, and we are suffering from crisis of trust even openness or transparency is now all too easy". Nevertheless, it can be argued that O'Neill is considering the trust of individuals for public institutions, whereas, in this study, we consider trust between individuals from different companies but at the working level. In this situation it could still be the case that good communication would enable trust to develop.

#### ***12.5.2 Low ranked trust enablers***

The majority of the respondents disagreed with statements which suggest that the following would be enablers of trust:-

- provision of penalties for breaking trust
- putting systems and procedures in place to detect advantage-taking behaviour
- having written contract
- sharing information cautiously
- imbalance of power i.e. one partner is more powerful than others

It is interesting that the respondents give a low ranking to the presence of systems and procedures for detecting advantage-taking behaviour, fear of penalties or legally binding contracts as enablers of trust between collaborative partners. However, it has been suggested that it would be easier for trust - based relationships to develop if



the risks involved are reduced by institutional mechanisms. These mechanisms include effective laws to enforce contracts, efficient supervision by appropriate agencies, and a strongly developed moral opprobrium for any violation of the social norms applying to trust (Lane and Bachmann, 1996). Again, Shapiro *et al* (1992) also suggest that along with other types of trust, deterrence-based trust operates in business relationship. This type of trust is based on consistency of behaviour that people will do what they say they are going to do, and behaviour consistency is sustained by the threat of punishment (e.g. loss of relationships) that will occur if consistency is not maintained.

However, some social scientists suggest that true quality of business relationships is to be found in the form of informal understanding and practices, which are not part of the contract itself, but lie 'beyond contract'. Written and legally binding contracts should be seen as indicating a low level of trust, and detailed contractual agreements are inimical to the development of trust (Beale and Dugdale, 1975; Sitkin and Roth, 1993). In the UK oil and gas industry the majority of the relationships between companies rest on conventional formal contracts, and the agreement to collaborate is recorded in an additional document. Many of the collaborative agreements may amount to little more than a framework agreement stating the basic philosophical aim of the relationship. Some framework agreements are drafted by reference to minimum conditions of satisfaction (MCOS). MCOS are normally stated by the operators at the outset of the project and actual methods of implementation are left up to individual participants (Beggs, 1998).

The respondents did not agree with statement 'Sharing information cautiously to avoid it being misused'. Sharing information cautiously implies lack of trust, and it would seem that respondents agree that behaving in this way is unlikely to enable the growth of trust. It may be possible that respondents appreciate the importance of sharing confidential information with their collaborative partners, because withholding crucial information may jeopardise the purpose of collaboration and



cause losses for all the partners. In the offshore oil and gas industry many projects require highly sophisticated technologies and major activities are performed in remote harsh deep-sea environments where availability of information is vital.

The respondents strongly reject the idea that trust would develop if one company were more powerful than the others. However, as discussed later, they also discount imbalance of influence as a barrier to trust, and so it could be concluded that they regard balance of power as a neutral factor in the development of trust.

## **12.6 Factors That Can Threaten Trust in Collaborative Relationships**

As mentioned in the analysis chapter, respondents provided their opinion on potential barriers to trust by scoring 34 statements. Statistical tests were performed to rank the statements according to their priority. Depending on the ranking scores the statements (factors) were divided into three groups, high priority group, moderate priority group and low priority group. The characteristics of the high and low priority groups are discussed below.

### ***12.6.1 Highly ranked barriers to trust***

As shown in the list below, there seem to be three distinct, but interrelated, ideas expressed in the statements ranked highly as barriers to trust by the respondents.

#### *Opportunistic or advantage taking behaviour*

- one company takes advantage of another or manipulates others to gain advantage
- one party exploits temporary weakness of other parties
- promises are broken
- breach of contract

#### *Misuse of information which belongs in the relationship*

- one party uses confidential information to its own advantage
- one party withholds important information



- misleading information is passed
- people think that secrets are disclosed outside the alliance

#### *Lack of honesty and fairness*

- people are not truthful with each other
- people think that unfair accusations are being made

The essence of forming a collaborative relationship is to work together for mutual benefits. It is expected that in a collaborative relationship, no partner will take advantage of others, and all partners will work sincerely and honestly to fulfil their objectives. When these expectations are violated by one or more partners, either by behaving dishonestly or by taking advantage of others, it upsets the victims, creates misunderstanding between the partners and causes a sense of disruption of trust. When this kind of behaviour is repeated or likely to spread to other transactions it may cause a breakdown of trust between the partners.

The statements show four ways in which misuse of information can cause serious damage to trust between collaborative partners. When a collaborative partner withholds important information which could be used by the others for common benefits or provides misleading information that has damaging effects on a collaborative project, that partner will obviously lose his credibility and be less trusted by others. A similar loss of trust would result from the use of information for a partner's own benefit or disclosure of important information to others outside the relationship. These advantage-taking activities are against the spirit of collaboration. They provide benefit only to a certain group and cause suffering to others. Parties, which are involved in such activities, will not be trusted by others and thus trust between collaborative partners will be diminished.

#### ***12.6.2 Low ranked barriers to trust***

The respondents had a low level of agreement with the following as barriers to trust:-



- companies have different organisational cultures
- many layers of management in the parent companies
- highly formalised management control systems
- one company has more influence than the others

It is interesting that the respondents have low agreement that firm-specific factors, broadly related to organisational culture or organisational systems, or organisational structure, are barriers to trust. Therefore, it may be argued that person-specific factors are more important than firm-specific factors when it comes to the question of fostering trust in collaborative relationships. Trust in collaborative relationships is undermined mainly by peoples' advantage taking behaviour, dishonesty, insincerity to the relationship and poor performance. Organisational systems and procedures appear to have little role to play here.

Although collaboration is made between organisations and there is both inter-organisational trust and inter-personal trust, it is always the people not organisations that trust each other (Blomqvist and Stahle, 2000). Again Zaheer *et al* (1998) define inter-organisational trust as "the extent of trust placed in the partner organisation by the members of a focal organisation". Development of trust either between people or organisation follows a gradual process, and the same might be expected in the decline of trust. However, sometime the decline can occur in a single violation that is so severe that it effectively eliminates all trust; other times the decline is a more gradual erosion of trust (Lewicki and Bunker (1996). Violation of expectation produces a sense of disruption of trust, of profound confusion, but not distrust. Distrust only emerges when the suspicion arises that disruption of expectations in one exchange is likely to spread to other transactions. To distrust, then, implies an attribution of intentionality that continues throughout all interactions or exchanges, at least of a particular type. Hence trust can be disrupted without producing distrust (Zucker, 1986).



It is slightly surprising that imbalance of power between companies (as described by imbalance of influence) is also given a low rating as a barrier to trust. A number of social scientists argue that balance of power between collaborative partners should play an important role in developing and fostering trust. Dwyer and Lagace (1986) believe that both parties in a collaborative relationship need to be seen as having equal power for trust to emerge. Graham *et al*, 1995 also argue that in an inter-organisational relationship both partners need to be perceived to at least have roughly equal influences over the domain of service being supplied, even if they have different amounts of power over other domains. Anderson and Weitz (1989) believe that a power imbalance leads to exploitation by one party, with the other party becoming dissatisfied and, therefore, less willing to enter into long term co-operation and runs the risk of breaking down the relationship sooner or later. Even if it does not, the weaker partner simply serves as a tool for its dominant counterpart. While such relationship may be convenient from the dominant partner's point of view, it is unlikely to produce the synergistic, creative results that more reciprocal collaboration is supposed to bring about (Gray, 1989).

At the time of the study, imbalance of power between the partners was a fact of life. The collaborations were formed between very large companies (operators) and the contractors most of which were much smaller. Therefore, the collaborative companies are possibly accustomed to this fact and/or do not find experience that imbalance of power is a problem in developing trust between them.

### ***12.6.3 Summary of enablers and barriers***

Previous sections have discussed the high ranking and low ranking enablers and barriers of trust development. It would be reasonable to expect symmetry between enablers and barriers, such that the presence of a factor as a highly ranked barrier would be reflected by the absence of that factor as a highly ranked enabler. As trust



in collaborative relationship is closely associated with basic norms and behaviours, social customs and rules and regulation of the companies involved (Zucker, 1986), violation of those norms, customs or rules and regulation may also result in breaking of trust or development of distrust among the partners (John Child, 1998). However, such symmetry would not necessarily be shown by the low-ranking factors.

The highly ranked factors do exhibit this symmetry to some extent because "honesty and lack of opportunistic behaviour" as enablers can be linked with "opportunistic behaviour and lack of honesty and fairness" as barriers. The other broad groupings of enablers which include "close working relationships" and "communication" do not seem to have as obvious a reflection in the highly ranked barrier of misuse of information.

The investigation into enablers and barriers of trust in collaborative relationships was prompted by the research question, "What do people who work in the UK oil and gas industry consider needs to be done to maintain or increase level of trust in relationship?" The results of the investigation suggest that the important ways of maintaining or increasing trust would be:-

- Take steps to discourage advantage taking behaviour by encouraging honesty and openness in all transaction
- Encourage the development of close working relationships and create the environment where the team members can work closely with face to face contract.
- Encourage frequent and open communication between the team members
- Ensure that promises are kept
- Discourage the misuse of information which is confidential to member of the relationship.



## **12.7 Relationship between Level of Success and Level of Trust in Collaborative Relationships**

As stated in the literature review many social scientists have suggested presence of trust between collaborative partners enhances the performance of a relationship. The first phase research of the PhD study also suggests that presence of trust is one of the most important success factors of a collaborative relationship. Hence data was collected on the levels of trust and the levels of success in the surveyed relationships to try to understand the relationship between them. It can be appreciated that measuring trust and measuring success in a collaborative relationship are difficult because there are no straightforward methods of measurement in these cases. As mentioned in the chapters on literature and on analysis (chapter 8 and 11) presence of some factors (condition) for example, 'keeping promise', 'not disclosing secrets outside the relationship', 'not taking advantage of others' in a collaborative relationship may indicate the presence of trust in that relationship. Therefore, the respondents were requested to indicate the degree to which they believe those factors were present in their respective relationships. Again, from the first phase study, it was possible to identify the perceived criteria of measuring success of collaborative relationships in the UK oil and gas industry. Some examples of those criteria are, 'achievement of goals in terms of cost saving', 'achievement of goals in terms of timely or early completion of a project', 'greater volume of work', 'presence of satisfactory safety performance', 'satisfaction with sharing of risks and rewards' etc. That is to say two different sets of criteria (groups of statements) were used to measure level of success and level of trust present in the relationships.

Each respondent scored both the groups of statements, i.e. the statements indicating presence of trust and the statements indicating presence of success in a collaborative relationship, keeping in mind his or her own relationship. Each respondent's total scores for both the factors, i.e. level of trust and the level of success were calculated and thereafter follow-up regression analysis was performed to find out the relations between them.



The analysis shows that there is a direct positive relationship between the perceived level of trust present in a relationship and the perceived level of success of that relationship. That is, where high levels of trust exist between the collaborative partners, the level of success is also high in that relationship and when the perceived level of trust between collaborative partners is low in a relationship, the perceived level of success is also low in that relationship. Although it was expected that there would be a positive relationship between the perceived level of trust and the perceived level of success in the surveyed relationships, the present study shows a very strong ( $r = .726$ ) correlation between trust and success.

The study has identified a strong relationship between the level of trust and the level of success in collaborative relationship, and the correlation analysis has suggested straightforward formula for predicting success level in a relationship based on the level of trust. However, we are dealing here with two abstract phenomena of which the relationship in the real life is not so straightforward. Therefore, before making any conclusion one should consider the following aspects. Firstly, the parameters used for the study to measure trust levels and success levels are not universally standard, the researcher used his own logic taking help from related publications and the findings of the first phase study. Secondly, regression analysis cannot be interpreted as a procedure for establishing a cause-and-effect relationship between variables. It can only indicate how or to what extent variables are associated with each other. Thirdly, trust is an abstract phenomenon in our social life, the meaning of which is different to different people in different circumstances. Similarly, perceptions of success of a relationship are not the same to all stakeholders, as different people measure success by setting different criteria. Fourthly, as Cook and Campbell (1979) mention, in social science research causal inferences will never be proved with certainty since the inferences we make depend upon many assumptions that can not be directly verified. Finally, the sample sizes are not equal for all relationships, and the sample size is very low at least in one relationship i.e. 'B'.



Therefore, before making any assumption, it is important to consider all other issues, which directly or indirectly influence the success of a collaborative relationship. It must be remembered that mere presence of trust alone can not make an alliance successful because there are also many other factors involved in the process. Of course trust remains a very important part of the jigsaw.

## **12.8 Conclusion**

The study attempted to comprehend the meaning of trust from the perspective of collaborative relationships in the oil and gas industry. It also aimed to identify the factors which encourage trust to develop and the factors which diminish trust between collaborative partners. The effect of presence of trust in relationships is studied as well.

The study suggests that when people speak or think about trust (or more precisely placing trust in others) they primarily consider whether others will keep their promise, whether they are competent, whether they have similar cognition, and the kind of behaviour they showed in previous transactions (if any). The study indicates that the development of trust between partners in a collaborative relationship is encouraged where they do not take advantage of others' weakness, make frequent and open communication, make face to face contact to discuss problems or prospects, keep promises and do not misuse sensitive information. On the other hand, trust between the partners is undermined mainly by their advantage taking behaviour, dishonesty, insincerity to the relationship and poor performance.

Trusting relationships are important in several ways. Trust between people is indispensable as a means of acquiring other things of value. If we never trust anyone, we could never learn anything useful from anyone else; after all they might not be telling us the truth. Nor could we co-operate with other people in a working relationship after all they might fail to honour their side of the deal (Hills, 2002). The present study also indicates that trust between people is very important in



collaborative relationships, as it identifies a strong relationship between the level of trust present among collaborative partners and the success of the relationship.

However, in the real world, one has to appreciate that not everyone is trustworthy and that some people will take advantage of others' honesty. We have to learn to recognise those people who have little respect of trust and take advantage of others' honesty and sincerity. But whenever possible, we must do our best to create and sustain a trusting environment. We simply cannot afford not to. As Kant (1724-1804) shows us, when trust breaks down, not only do we miss out on the benefit of co-operation, but no less important we lose respect for one another.



## **CHAPTER 13**

### **CONTRIBUTION OF THE RESEARCH AND ITS LIMITATIONS**

#### **13.1 Introduction**

This chapter seeks to evaluate the research process of the two studies that have formed the basis of the previous chapters of this thesis. First of all it provides a short description of the two phase study, then it discusses the limitations of the studies. Finally, it outlines the contribution the research has made to knowledge.

#### **13.2 Short Description of the Research**

This PhD research was conducted in two phases. The first phase aimed at an understanding of the perceived distinguishing characteristics, criteria of success, criteria of failure, critical success factors, and the factors which often cause failure of alliances and partnering in the industry. The study brought together many interesting findings which have been illustrated and discussed in chapters 6 and chapter 7.

Along with other findings, the first phase study identified 'presence of trust' as the most important critical success factor of collaborative relationships in the oil and gas industry, and so the second phase took the form of a detailed study of 'perception of trust in collaborative relationships in the UK oil and gas industry'. The second phase study has distilled out valuable information on the perception of trust in the industry, which has been discussed in chapter 11 and chapter 12.

The study has improved understanding of what people, who work in oil and gas industry collaborative relationships, mean when they speak or think about trust. In addition the study has shed additional light on the effects of the presence of trust in relationships, how trust can be fostered (factors which enable trust to grow) and the factors which can damage trust in a collaborative relationship. The study also



identified a strong correlation between perceived level of trust present in a relationship and its perceived level of success.

### **13.3 Possible Short Comings**

As mentioned in the methodology chapters, precautions were taken to avoid shortfalls and errors in both studies of the research. However, in the real world everything is not perfect and many unwanted things may happen. The following sections outline possible shortcoming of the studies.

#### ***13.3.1 Absence of random sampling***

Although in the first phase study the sample was drawn randomly, in the second phase a non-random sampling method was used to select the respondents. In the second phase the sample was drawn by adopting purposive or judgmental sampling method to ensure that only the people who had experience and knowledge in the subject matter were selected. Although the absence of random sampling in the study may have lessened some degree of external validity, this was compensated a great deal by higher response rate (61%) and possibly more credible answers from the experienced respondents. In circumstances where a researcher needs to select people with special characteristics, judgmental or purposive sampling method is practised (Jackson, 1995; Robson, 1997; Parkhe, 1993).

#### ***13.3.2 Low number of respondents especially in one group of the first phase study***

As mentioned in chapter 7 on discussion of results of the first phase study, the number of respondents from the group of people who worked at the frontline or at shop floor level was comparatively lower than that the other two groups i.e. senior management and middle management group in the first phase study. Although initiatives were taken to obtain more responses from that group, however, for practical reasons e.g. lack of interest and insufficient knowledge in the area, the initiatives were in vain. Thus no conclusions were drawn from the result of this group.



### ***13.3.3 Absence of statistical analysis, and limitations of statistical tests***

In the first phase study, data was mainly qualitative in nature. Content analysis was performed to develop concepts and categories. Those concepts were sorted by frequency of their occurrences to distinguish more popular concepts from less popular concepts. That analysis was considered sufficient to reveal the answers to the research questions and hence no further statistical analysis was performed in the first phase study.

In the second phase study several statistical tests were performed e.g. analysis of variance test, Friedman's ranking test, Cluster analysis, Regression analysis etc. Those tests were used to interpret the results and draw conclusions from the results. However, as suggested by many social scientists, there may be a number of shortcomings in the use of statistical tests in social science research.

### ***13.3.4 Absence of interview***

As stated in the methodology chapters, data/information was collected for both the studies by questionnaire survey and no interviews were conducted for this purpose. However, in the case of the second phase study, a number of face to face meetings and informal interviews were conducted with senior managers of all the surveyed relationships, (whom we called contact managers), before carrying out the survey. Again, in the case of confused or unclear responses, the respondents were contacted further either through e-mail or telephone to obtain clearer pictures of their responses. It is recognised that in addition to the questionnaire survey, interview techniques could have brought some additional information. For example, interviews could have been used to gain more insight into such questions as; why 'goodwill trust' had a low ranking, when it would be expected that this kind of trust would be beneficial to a collaborative relationship, or why a 'formal contract' is given low importance as a trust enabler. However, because of limitations of time it was decided not to conduct further interviews.



### ***13.3.5 Limitations of the questionnaire and respondents' ability to answer the questions***

As illustrated in the chapter on methodology of the second phase study (chapter 8) Likert type questions were used to collect data/information where a number of statements were constructed to obtain respondents' opinions on the subject matters under investigation. Insights from the literature review and the experience from the first phase study were used to make the statements. Although great care was taken to cover all possible areas which have been mentioned in the literature regarding the subject matters, and to make the statements as simple and concise as possible, it is possible that some of the issues were missed by the researcher and were not included in the questionnaire. It may also be possible that some of the statements were not clear enough or were confusing to some of the respondents and thereby they could not respond properly. Again, in some cases respondents might have had some limitations in terms of their knowledge or experience or time in answering the questions, which may have affected the responses.

## **13.4 Contribution to the Knowledge**

The research has brought some new information and ideas to the knowledge of Business Management, which can be summarised as follows:

### ***13.4.1 Identification of success and failure criteria, and critical success and failure factors of oil and gas industry collaborative relationships.***

Measurement of performance i.e. success or failure of collaborative relationships is an important but difficult task. The main difficulties lie in the setting up of criteria against which success and failure are measured. Social scientists have suggested different criteria or standards which could be used to measure success and failure of alliances and partnering or similar types of collaborative relationships. However, most of the proposed criteria are based on theory and are backed by very little or no empirical data. Again, very few of them are about alliances and partnering in the oil



and gas industry. The cases of the factors which enhance success and the factors which cause failure of collaborative relationships are similar.

This research has identified different perceived criteria for measuring success or failure of alliances and partnering in the UK oil and industry. The study has also identified different factors which are considered important in making alliances and partnering successful, as well as the factors which often cause failure of the relationship. Those identified criteria of measuring success and failure, and critical success and failure factors could also be used in similar kinds of relationships between organisations in other industries, because motives for forming relationships are more or less the same for all organisations i.e. to improve business performance and profitability.

#### ***13.4.2 Development of methodology***

In the first phase study general data base software was used to support analysis of the content of free text responses and this methodology could be used in analysing similar type of data. The sets of questions and the statements used in the second phase study could be considered as a contribution to the social science research method. This method could be used to evaluate the success of a collaborative relationship and to assess the level of trust within a relationship. Again, with required modification of the question style and question statements, it could also be used in the study of other similar social phenomena e.g. integrity, honesty. Using this method peoples' attitudes toward trust i.e. whether they have trusting attitude, or non-trusting attitudes, or neutral could be measured

#### ***13.4.3 Aspects of trust were studied in the oil and gas industry, which have not been studied before.***

According to the objectives of the second phase study this PhD research has identified the meaning and effects of trust, as well as the factors which enable and factors which diminish trust in collaborative relationships in the UK oil and gas



industry. Although many theories and propositions have been put forward in the literature regarding those issues of trust which have discussed in chapter 8 on literature review, nevertheless most of the publications regarding those issues are outwith oil and gas industry and not many of them are supported by empirical data. Findings of this study on the role of trust in collaborative relationship in the UK oil and gas industry are unique.

The study has shed more light on what people in collaborative relationship mean when they talk about trusting each other. Along with the identification of trust enablers and barriers, the study has shown a strong correlation between the level of trust present in collaborative relationships and their success.

It is likely that the findings for the upstream oil and gas industry could be of general application to other areas.

#### ***13.4.4 Peoples' trusting attitude and its influence on their thinking***

The study has shown how responses to a set of statements can be used to divide people into those with a high propensity to trust others (with a “trusting attitude”) and those with a low propensity to trust (with a “non-trusting attitude”). The study has then shown how peoples’ opinion concerning trust enablers and barrier differ significantly between trusting and non-trusting groups.

It is possible that this method of characterising respondents could be useful in other surveys.



## CHAPTER 14

### OVERALL CONCLUSIONS AND RECOMMENDATIONS

#### 14.1 Introduction

This final chapter offers an overall conclusion for this research in the light of the findings of its two studies. Then it reflects on the research process and illustrates some of the lessons which have been learned through the process. It also offers some recommendations, which could be used by policy makers, managers and other stakeholders for the better management of collaborative relationships in the UK oil and gas industry. Some of the recommendations are also applicable to other industry relationships. The chapter ends with recommended areas of further research.

#### 14.2 Conclusions

##### *14.2.1 Summary of the research*

This PhD research was conducted in two phases. The first phase study identified distinguishing features, criteria of success, criteria of failure, critical success and failure factors of collaborative relationships in the UK upstream oil and gas industry. The study was conducted through a questionnaire survey among three different groups of people from the industry and the respondents were selected randomly from these groups. These three groups are; (a) participants of the Offshore Europe '99 Exhibition and conference (delegates and business persons), (b) CRINE champions group who were recognised for their positive contributions in different CRINE (cost reduction initiatives for the new era) initiatives, and (c) six groups of trainees who attended different training courses at Robert Gordon Institute of Technology courses in the academic year of 1999-2000. Mostly qualitative data/information was collected for the study and content analysis methodology was adopted to analyse the data.



Along with other findings, the first phase study identified 'presence of trust' as the most important critical success factor of collaborative relationships. The second phase study took the form of a detailed study of 'perception of trust in collaborative relationships in the UK oil and gas industry'. In the second phase peoples' opinions were gathered to understand what is meant by trust, what are the effects of presence of trust and the factors which enable and diminish trust between people in collaborative relationships in the industry. The correlation between level of trust present in a relationship and its level of success was also assessed. A self-administered questionnaire survey method was used to obtain data for the study. Data was collected from five relationships involving 21 companies from the UK oil and gas industry, and a number of statistical techniques and tests were performed to extract information from the data.

#### ***14.2.2 Overall findings of the first phase study***

##### ***14.2.2.1 Distinguishing characteristics***

The first phase study suggests that 'shared benefit', 'co-operation', 'shared goals', 'trusting attitude', 'clear and consistent targets', 'increased volume of work', 'team spirit', 'close working relationship', 'cost saving targets' and 'willingness to change' are perceived as the important distinguishing characteristics of alliancing and partnering in the UK oil and gas industry.

##### ***14.2.2.2 Criteria of success***

Naturally one would expect that achievement of goals would be the main criteria to measure success of a business relationship, and this has also been suggested by the respondents of the present study. The study shows that in general, performance level i.e. achievement of goals expressed in terms of cost saving, time and safety level, sharing risk reward among alliance partners, and acquiring more business are broadly used criteria of measuring success of alliancing and partnering in the UK oil and gas industry. 'Presence of shared aligned goals', 'achievement of shared aligned



goals', 'presence of continuity of work' are some other criteria for measuring success in the industry.

#### *14.2.2.3 Criteria of failure*

With regard to the criteria of failure, the study suggests that failures of alliances and partnering are mainly judged by the failure of achievement of goals and targets expressed in terms of cost saving, time and safety performance. Other important failure criteria according to priority are, presence of adversarial behaviour, absence of close working relationship, absence of continuity of work, absence of open communication, absence of trusting attitudes, and absence of work which meets satisfaction. As may be expected most of the failure criteria are the opposite of success criteria. That is to say, the same criterion is often used to measure success and failure of an alliance, achievement of which is considered as success and non-achievement of which is considered as failure of the relationship.

#### *14.2.2.4 Critical success factors*

The study indicates that, in general, 'trusting attitudes/ behaviour' is perceived to be the most important success factor for alliancing and partnering in the UK oil and gas industry. 'Shared and aligned goals', 'presence of open behaviour', 'presence of shared knowledge', 'clear role', 'commitment of members to relationship', 'co-operative behaviour' and 'honesty' are other important critical success factors.

It may be noted that some factors which have been mentioned in the literature as success factors e.g. 'no-blame culture', 'training', 'use of external facilitator', 'change of attitude', 'sufficient resources' 'past experience of collaboration management' and 'choice of partners' are not considered highly important by the respondents for making alliances successful. Again, some of the factors which have been suggested by the respondents as important success factors e.g. 'shared knowledge', 'co-operative behaviour' 'early involvement of people' are not common in the literature.



#### *14.2.2.5 Factors which can cause failure*

Critical failure factors are the factors whose presences make a relationship more likely to fail. The study suggests that in the UK oil and gas industry, 'absence of shared aligned goals', 'absence of clear targets', 'absence of trusting attitudes', 'absence of unhindered communication', 'presence of unaddressed cultural differences', 'absence of leadership', 'presence of adversarial behaviour', 'absence of fair allocation of risk and reward', 'absence of open behaviour and willingness to change' and 'absence of commitment' are perceived as the main failure factors of alliances and partnering.

It is interesting to note that although 'presence of trust' is ranked high as a success factor, 'absence of trust' has been placed in the third position as a failure factor. Again some failure factors such as 'absence of leadership', 'absence of fair allocation of risks rewards', 'presence of cultural differences', 'absence of willingness to change' are rated high, whereas the corresponding success factors have not been ranked highly by the respondents. This suggests that, there are some factors absence of which in a relationship may cause failure, but mere presence of which will not necessarily bring success.

#### *14.2.2.6 Declining interest in alliances*

The study indicates that the intensity of interest in forming alliances and partnering in the UK oil and gas industry has possibly declined in the recent years, especially among the large companies. There may be various reasons behind this, for example, change of business environment. In recent years many companies have adopted merger and acquisition strategy in the industry and by doing this they may have found different ways of getting economies of scale. The dramatic fall of oil price in 1998 may be another reason. During this crisis possibly the oil companies wanted to



have more control over their business activities having thought that they would gain financially by not adopting alliances and partnering strategy. Another possibility is that in the changed business environment current senior managements of oil companies are not attracted to the idea of alliances and partnering but rather they prefer to have a power based approach to relationships with their suppliers. It may also be possible that many oil companies still pursue collaborative strategy but do not always use the name “alliances and partnering”. Whatever the situation, it would be interesting to know the ways business to business relationships are maintained in the oil and gas industry.

#### *14.2.2.7 Common concepts or themes*

As stated in chapter 5, concepts, which express similar ideas, were clustered together into common concepts or themes, and were analysed on the basis of frequency of their occurrence. The study suggests that about 50% of the opinions gathered in the survey were about two themes i.e. 'Goal/Objective/Target' and 'Behaviour/Attitude'. Therefore these two themes can be considered as the vital themes in alliancing and partnering relationships. There are a few other themes which are quite important, e.g. 'Performance/Service level', 'Risk and reward', and 'Relationship'.

### ***14.2.3 Overall findings of the second phase study***

#### *14.2.3.1 Meaning of trust*

From the insight of the literature review it can be suggested that when people speak or think about trust they indicate several types of trust. In the literature, 13 types of trust have been mentioned that could exist between people in collaborative relationships, namely, characteristics based trust, cognition based trust, contractual trust, competence trust, process-based trust, strong form of trust, goodwill trust, calculative trust, weak form of trust, semi-strong trust, Normative trust, deterrence-based trust, and knowledge-based trust. Out of the 13 types of trust five types i.e. contractual trust, competence trust, process-based trust, strong form of trust, and



cognition trust are considered most important in the oil industry. Calculative trust, characteristics - based trust and institutional trust are given least priority, which suggests that in the oil industry, peoples' competence, capability, honesty and sincerity count more than their ethnicity or personal characteristics when the question of placing trust in them arises.

From the responses on the meaning of trust, it was possible to divide the respondents into three categories i.e. respondents with 'trusting attitudes', respondents with 'non-trusting attitudes' and respondents who are 'neutral'. The study also suggests that peoples' trusting attitudes have substantial influences on their thinking on issues related to trust. Respondents with trusting attitudes are more positive on the effects of presence of trust than the non-trusting group. There are also differences in their opinions on the factors which enable and diminish trust between collaborative partners.

#### *14.2.3.2 Effects of trust*

With regards to the effect of trust, the respondents consider that the presence of trust allows people to depend on each other with confidence, makes the relationship more comfortable and increases efficiency and co-operation between companies.

The study suggests that people are less concerned about the negative effects of trust in collaborative relationship. As the study shows, the respondents in general agree more with the positive effects and disagree more with the negative effects e.g. 'benefit only powerful companies', 'misuse of confidential information for own benefits' etc.

The study also suggests that the people in the UK oil and gas industry consider that there is a strong link between presence of trust of a relationship and its success. In a relationship where there is higher perceived level of trust, the perceived success level is also high, and in a relationship where perceived level of trust is low, the perceived success level is also low. This view is also supported by the first phase study where



a different set of respondents have identified presence of trust as the most important success factor of alliancing and partnering in the industry.

#### *14.2.3.3 Factors which enable and diminish trust*

With regard to the factors which are important in fostering trust, the respondents gave highest priority to the factors which indicate absence of opportunistic behaviour. On the other hand, presence of factors which indicate opportunistic behaviour will diminish trust and in extreme cases may produce distrust.

Communication and information exchange is another important issue. It is considered that frequent open communication and open discussions of the problems help in developing trust between collaborative partners, whereas if people conceal important information or misuse information for their own benefits then trust would be affected adversely.

The presence or absence of other factors, such as honesty, sincerity, close working relationships can have positive or negative effects on the process of development of trust between collaborative partners.

It must be mentioned that while the presence of some of the factors increases trust, their absence does not always decrease trust. Similarly, presence of some factors may diminish trust, whereas absence of them will not necessarily encourage trust in the relationship. Therefore, it can be suggested that increase or decrease of trust between people in collaborative relationships is not a straight forward process, rather it is a complex phenomenon and results from a combination of effects of many factors

Another interesting finding of the study is that, some hard issues e.g. organisational systems, procedures, written contracts, have less bearing on the trust development



and diminishing process. Rather it is the peoples' behaviour, attitudes, sincerity and honesty that are more important in this regard.

#### ***14.2.4 Importance of trust in collaborative relationships***

Considering the finding of both the studies it could be suggested that in the UK oil and gas industry collaborative relationships 'trust' is an important phenomenon and plays a vital role in improving performance of collaborative relationships. The following arguments can be put forward to support this proposition:

The first phase study suggests that although there are several factors which contribute positively towards the success of collaborative relationships, presence of trust is considered as the most important factor among them.

Secondly, from the finding of the second phase study it may be possible to suggest that the people in the oil and gas industry have an overall positive attitude towards trust. In the question regarding the meaning of trust, several reasons were given why people might trust each other. In response to this question the majority of respondents agreed with most of the statements, and the average score of all the respondents over all the statements was higher than the mid point.

Again, most of the people agreed with the statements which suggest the benefits of presence of trust in a relationship e.g. feel more comfortable about the relationship, people depend on each other with confidence, increase co-operation between companies, improve the efficiency of joint activities etc. At the same time most of the respondents disagree with the statements which suggest the harmful effects of the presence of high level of trust in a relationship e.g. 'will increase vulnerability', 'use of confidential information for own benefit', 'benefit only the powerful companies' etc.



Finally, the study indicates that there is a very strong relationship between perceived level of trust present in a relationship and its perceived level of success. In the relationships where perceived level of trust was high, the level of success was also high and in the relationships where level of trust was low success level was also low.

#### ***14.2.5 Peoples' attitudes towards trust***

The study suggests that depending on the attitudes towards trust, people could be divided into three groups namely 'people with trusting attitudes', 'people with non-trusting attitudes' and people in the middle i.e. neutral. The trusting group has a high propensity to trust, they are less doubtful about others and place trust in others easily as they have agreed with most of the statements stating different reasons of placing trust in each other. The Non-trusting group is on the other side of the trusting attitude continuum. These people are very suspicious and do not trust others easily, as they have disagreed with most of the statements, putting forward different reasons for placing trust in other. They do not easily find a reason to trust others; possibly their attitude is driven by suspicion. The 'neutral' group is in the middle of the trusting attitude continuum. Perhaps this group of people does not trust other people right away, first analysing the circumstances, then judging the others' attitudes before placing trust in them. When they are reasonably happy that the others would not take advantage on them, or would keep their promise they trust them.

### **14.3 Recommendations**

The research has covered some important aspects of collaborative relationships in the UK oil and gas industry and has revealed some interesting findings. From the insights of the literature review and findings of both the studies the following recommendations are made:

- Measurement of success or failure of collaborative relationships is often difficult, because of lack or absence of appropriate criteria or standards against which performances can be measured. The research has brought together different criteria which are considered important by the people who have a stake in the oil



and industry. The important criteria of success are; achievement of goals expressed in terms of cost saving, time and safety level, sharing of risks and rewards and acquiring more business. On the other hand, important criteria of failure are; non-achievement of goals expressed in cost, time and target, presence of adversarial behaviour, absence of satisfactory safety performance. These are the highly scored criteria and there are also other criteria which have been mentioned in chapter 7. Depending on the circumstances, those criteria could be used by checking their absence or presence in the relationship to measure success or failure of alliances and partnering or similar type of relationships. It may be possible to create a proper environment at the onset of the relationship that helps in fulfilling some of the criteria e.g. making provision for appropriate risk and reward arrangement.

- The study has identified some factors or conditions e.g. presence of trusting attitudes, shared and aligned goals, open behaviour, shared knowledge, clear roles, which are considered critical in making collaborative relationships successful in the industry. Managers and policy makers should endeavour to create a business environment that sustains those conditions or factors. At the same time they need to be aware of the conditions or factors that adversely affect and often cause failure of the relationships. Absence of shared goals, absence of clear and consistent goals, absence of trusting attitudes, absence of open and unhindered communication are some examples. It is also important to create an environment that discourages the presence of those factors.
- The first phase study has revealed that ‘presence of trust’ is considered as the most important success factor of alliances and partnering in the industry. Again the second phase study suggests that there is a direct positive relationship between presence of trust in a collaborative relationship and its level of success. That is where high levels of trust exists between collaborative partners, the level of success is also high in that relationship and when the perceived level of trust



between collaborative partners is low in a relationship, the perceived level of success is also low in that relationship. It is suggested that organisations in the UK oil and gas industry involved in collaborative relationships create an environment that fosters trust within and between collaborative organisations. This will increase co-operation between the partners, enhance efficiency and thereby success of the relationships.

The organisations also need to be aware of the factors which encourage trust to develop and become established between collaborative partners, and the factors which diminish trust between them. Some of the important encouraging factors are lack of opportunistic behaviour, close working relationship, open communication etc. Some of the damaging factors are opportunistic behaviour, improper use of information, lack of honesty, insincerity to the relationship etc. Detailed discussions have been made on those important factors in chapters 11 and 12. It is, therefore, important that the involved organisations in collaborative relationships make open communications, establish close working relationships with each other, and adopt a philosophy that discourages opportunistic behaviour and encourages honesty and sincerity which will in turn increase trust between them and thereby the success of their relationships.

- The literature review of the first phase study suggest that small companies are not involved in the core part of alliances and partnering in the UK oil and gas industry. Some small companies are able to put forward excellent ideas, which is very useful for the industry. Hence, it is important to structure collaborative relationships in such a way that small companies can play their role effectively.

#### **14. 4 Reflection and lessons learned**

As mentioned in chapter 4, 5 and 9 care was taken to uphold the validity and reliability of the research process and thus establish credibility of the findings. Nevertheless, on reflection, the research process could have been improved if some



things were done differently. The following section gives an account of these reflections.

#### ***14.4.1 Triangulation or using multiple methods***

The use of several different research methods to study the same domain is sometimes called triangulation. Triangulation is considered as a valuable research strategy because each research method has particular strengths and weaknesses (Babbie, 1995).

Baker, 1994 suggests that in triangulation, the researchers gather evidence from multiple sources in order to address the questions at hand from different points of view. For example, research may be approached by employing more than one theory, participant, method or analysis.

Using more than one perspective can have substantial advantages, even though it almost inevitably adds to the time required. One important benefit of multiple methods is in the reduction of inappropriate certainty. Using a single method and finding a clear-cut result may delude the investigator into believing that they have found the right answer. Using other methods may point to differing answers, may remove specious certainty and may help to counter threats to validity.

Denzin(1988) has distinguished four types of triangulation:

- *Data triangulation*: the use of more than one method of data collection (e.g. observation, interviews, documents);
- *Observer triangulation*: using more than one observer in the study;
- *Methodological triangulation*: combining quantitative and qualitative approaches;
- *Theory triangulation*: using multiple theories or perspectives.



However it must be born in mind that use of multiple methods or triangulation can create confusion and uncertainty as it opens up possibilities of discrepancies or disagreements among the findings from different sources. For example, interviews and documents may be contradictory; two observers may disagree about what happened. Bloor (1997, pp. 38-41) argues that while triangulation is relevant to validity, it raises both logical and practical difficulties, e.g. when findings collected by different methods differ to a degree which makes their direct comparison problematic.

For both the studies discussed in this thesis, data was collected by questionnaire survey. However if data could have been collected using more than one method for this phase it would have increased triangulation. For example by conducting interviews additional information could have collected to clarify or check the information gathered from the survey. Again it could have been possible to look at the distinguishing features of alliance agreements or alliance mission statements from internal company documents or could have interviewed a different set of people to obtain additional information. It would also have reduced the chance of inappropriate certainty if it had occurred in the study.

It would also have been possible to conduct some case studies or to adopt a grounded theory approach especially in the phase 2 study. The study was conducted to understand different issues associated with trust between collaborative partners e.g. what people mean when they speak or think about trust, under what circumstance trust between people is increased or what are the reasons of declining of trust and what effects trust has on the success of collaborative relationships. Case studies would have allowed observation of transactions between people and their mutual behaviour, and collection of additional information on top of information collected through the questionnaire survey. It could have been possible to interview a different set of people about trust issues, or use some internal company documents to obtain another view of the success of each relationship. Perhaps it could have



been also possible to obtain a check on my proposed “propensity to trust” test by setting up an experiment involving a group of people, getting them to complete my “propensity to trust” statements, giving them a series of tasks which might indicate whether each is a trusting or non-trusting person then seeing if there is any correlation with their scores from my statements. In this way validity and triangulation of the study could have been increased. As mentioned earlier because of the limitations of resources it was not possible to perform case studies. However, the importance of this process is recognised and achieving triangulation would be an important consideration in future research.

#### ***14.4.2 Sampling issues***

The first phase study aimed to understand peoples’ perception of criteria of success and failure, and critical success and failure factors of alliances and partnering in the UK oil and gas industry. As mentioned in earlier chapters, the survey sample was drawn from three groups of people opportunistically. However, ideally the sampling could have been done differently. All alliances and partnering could have been identified and divided into strata as there were different types of alliance (e.g. some were short term some were long term, some alliance partners had closer cooperation than others, some alliances were formed to construct platforms, some were for maintenance of platforms etc). Having made the stratification it could have been selected a sample from each stratum using a random sampling method. This sampling method would have ensured that the sample included different types of alliances.

#### ***14.4.3 Adaptation of longitudinal study***

In the second phase peoples’ perceptions of trust in collaborative relationships were studied, and a cross sectional view was taken to understand them. Trust is an abstract phenomenon of social life and many issues are associated with it e.g. peoples’ view about life, their expectation from others, their culture, beliefs etc. Again the perception may not be static; it may change over time with changes of circumstance.



With a cross sectional study it may not be possible capture all the subtleties of people' lives. A longitudinal study may be required which allows observation of how people conduct themselves in exchange relationships over a long period of time and under different circumstances.

#### ***14.4.4 Use of grounded theory approach***

A grounded theory approach could have been adopted to understand some of the issues of the phase 2 study more clearly e.g. “what do people mean when they talk about trust?, what are the components of trust in oil and gas industry?”, “what do people consider needs to be done to maintain or increase levels of trust in relationships?”, “what is the relationship between perceived level of trust within a collaborative relationship and its perceived level of success?” With a self administered questionnaire it may not have been obtained a clear picture of these complicated issues. A clear picture could have been obtained of these kinds of research questions by adopting grounded theory approaches. As mentioned in chapter 4 grounded theory is not a theory at all. It is an overall strategy for doing research. As an analytical tool, grounded theory involves breaking down the qualitative data into concepts, linking the concepts and integrating them in a way to give a new meaning to the data. In a grounded theory approach the researcher collects some data on his area of interest with an open mind, analyses them and goes to the field to collect more related information and analyse it. This process continues until the researcher obtains a clear picture of the phenomenon which leads him to develop hypotheses. By adopting this approach it would have been possible to collect information on the issues surrounding trust by observing peoples' behaviour, or by asking questions or by using other appropriate methods. It would have allowed understanding how people act and react with their alliance partners in different circumstances. How trust between them grows, and what causes breaking of trust. How people at different working levels interact with each other when the question of placing trust arises. In grounded theory methodology data collection is a long-term



process, although this could be an effective research strategy to answer this kind of research question.

#### ***14.4.5 Structure of the questionnaire***

In the first phase survey, respondents were requested to suggest their perceived distinguishing characteristics, criteria of success, criteria of failure, critical success factors, and critical failure factors by asking five questions. An example of the type of response sought was given in each of these questions. It may be possible that those examples have influenced some the respondents when they answered those questions. For example in the ‘critical success factor’ question, ‘trust’ was the example and the analysis showed that ‘trust’ was mentioned most frequently by the respondents as a success factor. Although ‘trust’ was one of the 69 success factors mentioned by the respondents, only 9% respondents mentioned ‘trust’ first time, which suggests that the examples have influenced the respondents very little, if at all. However, with hindsight, it would have been better not to have provided examples in the questionnaire.

In the second phase survey, respondents were requested to express their agreement, disagreement or uncertainty with the statements which were made to measure their opinion on different issues surrounding trust. In a few questions respondents might have found difficulty in distinguishing between two statements because of their quite similar meaning. For example, in the question about ‘what helps trust to grow in an alliance in the UK oil and gas industry’ 34 statements were made. Of the 34 statements two statements were ‘trust between alliance partners will increase if they do not mislead each other’ and ‘trust between alliance partners will increase if their actions are consistent with their words’

Although the effects of the two statements may be the same, there is slight difference between the two actions. “Misleading each other” implies an active intention



whereas “action not consistent with their words” could happen even if the intention was not there. It is now realise that it would have been better to make the statements more distinguishable.

#### ***14.4.6 Refinement of concepts***

Concepts were developed from the text responses of the first phase study using content analysis. During the process of content analysis each response text was studied carefully and thoroughly. Each word and sentence was examined in an attempt to encapsulate the participants’ meaning. Significant statements, phrases and words directly relating to the phenomenon under study were identified, and were captured under suitable concepts. Statements, phrases and words having similar meaning were captured under similar concepts. Further review of these concepts suggests that, although there are differences in underlying meaning, some of the concepts could be interpreted as having a similar sense. Having done the analysis and interpretation of the concepts, it is now recognise that it would have been better to develop concepts which were distinctly different from each other. This would have removed any shortcomings. In performing content analysis on qualitative data in future, additional care will be given in this respect.

### **14.5 Concluding remarks**

This research has explored several aspects of the relationships between companies in the UK upstream oil and gas industry, including the importance of trusting and collaborative ways of working. The research has confirmed many of the ideas to be found in the literature and has added some new ones. It is hoped that the research findings will be useful to the industry.



## **14.6 Recommendations for further research**

This research has covered some of the interesting areas of collaborative relationships, and the role of trust in relationships in the UK oil and gas industry. The findings of the present research could probably be applied to other kinds of collaborative relationships. Conducting research of this kind in other sectors could bring useful information for senior managers, politicians and other policy makers in formulating appropriate strategies of collaboration.

The study suggests that small and medium sized enterprises are rarely involved in oil industry alliances and partnering activities. It would be interesting to know how SME's involvement in alliances and partnering could be improved. Again it was recognised that the intensity of interest in alliances and partnering in the UK oil and gas industry has possibly declined in recent years. Therefore, an investigation into the causes of declining interest in alliances and partnering is recommended.

The study has concentrated on trusting and collaborative aspects of business to business relationships. As different authors have suggested, there are situations where a collaborative way of working is not effective, rather the relationships need to be governed by power. It would be interesting to understand how power could be used effectively to bring positive outcomes in business to business relationships. Hence from the insights of the present research the following areas are recommended for future research. Depending on the types of research questions these research projects could be approached in different ways. For example, survey strategy could be adapted for 'Role of small and medium enterprises' and 'Decline of interest in partnering and alliances' studies where data could be collected by self administered questionnaires and interviews. A grounded theory approach could be appropriate for the studies on 'trust'. Case studies and surveys could be applied for the research projects on 'power' studies.



### ***14.6.1 Research in collaborative relationships in oil and gas industry***

#### ***Small and Medium enterprises***

##### ***Role of small and medium enterprises in collaborative relationships in the UK oil and gas industry***

###### **Possible research questions**

- To what extent are SMEs involved with the core alliances and partnering activities in the UK upstream oil and gas industry?
- What role can SMEs play in collaborative activities in the UK upstream oil and gas industry?
- How can SMEs' involvement in alliances and partnering be improved?
- What benefit will the industry gain from active participation of SMEs in collaborative relationships in the UK upstream oil and gas industry?

#### ***Decline of interest in partnering and alliances***

##### ***An investigation into the causes of declining interest in alliances and partnering in the UK oil and gas industry.***

###### **Possible research questions**

- What are the causes of loss of interest in alliances and partnering in the UK oil and gas industry?
- Which group(s) of companies i.e. operators, contractors, or SMEs have been losing interest more?
- How could partnering and alliancing relationships be strengthened?
- Is there any other kind of relationship evolving in the industry, if so, what kind of relationships are they?
- What are the major lessons of alliances in the UK oil and gas industry?



### ***14.6.2 Research in collaborative relationships in non-oil organisations***

#### ***Other UK industries***

*How have the ideas of collaboration been taken up in other UK industries? Have they been modified? Does the use of ideas follow the same pattern as with the North Sea industry?*

#### ***UK Public sector and voluntary organisation***

*Study of collaborative relationships between different departments (e.g. Social/ Housing/ Health/ Education) of Public Sector Organisations and Key Voluntary Organisations: barriers and opportunities.*

Possible research questions

- What is the existing relationship structure between companies/organisations (e.g. management structures, risk and reward structure, chain of commands, flow of information etc)?
- What are the criteria for assessing success and failure of collaborative relationships?
- What benefits have the involved companies/ organisations been gaining from the partnering and alliancing relationship?
- What kind of barriers have the involved companies/ organisations been facing to maintain the relationship?
- Is there any scope for improving the relationship?

### ***14.6.3 Studies on trust***

#### ***Value and trust***

*An understanding of the link between peoples' values and their propensity to trust others.*

Possible research questions

- Why people trust or distrust others?
- What kind of characteristics or social background makes a person trustworthier?



- What social background has most or least impact influencing on peoples' attitude on trust?
- What changes peoples' attitudes towards trust?

### *Role and perception of trust in other organisations*

*Role and perception of trust in collaborative relationships in other UK industries (e.g. automobile, construction, pharmaceuticals, food industries)*

*Role and perception of trust in collaborative relationships between different departments of public sector organisations.*

### Possible research questions

- What types of trust are present between people working in collaborative organisations?
- What are the effects of presence or absence of trust in collaborative organisation?
- What needs to be done to maintain or increase levels of trust in collaborative organisation?

### *Studies on the process of trust development*

*A study on the process of trust development mechanism between people in an organisation*

*A study on the process of trust development mechanism between two or more organisations.*

### Possible research questions

- What organisational structure (e.g. management structures, reward structure, chain of commands, flow of information between and within departments) is favourable to developing trust between people working in different departments?
- Why in working relationships do people trust or distrust other?



- How do people at different working levels interact with each other when the question of placing trust arises?
- What kind of characteristics or social background makes a person trustworthy in the working environment?
- What is important in making the social and business environment which encourages trust?
- What changes people's attitudes toward trust in working environment?

#### ***14.6.4 Studies on power***

*Studies on understanding of the existing power regime structure in oil and gas industry inter-organisational relationships.*

Possible research questions:

- What are the sources of power for organisations working in the UK oil and gas industry?
- Under what circumstances do suppliers/contractors gain domination over buyers?
- What are the sub regimes of power within overall power regime in the UK oil and gas industry?
- How does power move in exchange relationships over time?

*Studies on the role of power in the oil and gas industry inter-organisational relationships.*

Possible research questions:

- What are the effects of buyers' dominance on oil and gas industry inter-organisational relationships?
- What are the effects of suppliers' dominance on oil and gas industry inter-organisational relationships?



- What are the effects of buyer-supplier power equilibrium on oil and gas industry inter-organisational relationships?
- Given the power dominance of buyers in the oil and gas industry, how could buyers' inherent power be used for sustainable development of the industry?



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# APPENDICES



# **APPENDIX 1**

## **Sample Questionnaire Used in the First Phase Study**





What Do You Think About Partnering and Alliancing?

This questionnaire is a part of research on alliances and partnering being conducted by the Offshore Management Centre of Robert Gordon University in Aberdeen. It would be highly appreciated if you kindly fill in the questionnaire. All information will be kept confidential and neither any name nor company will be identified in reports of this research. Thank you for your co-operation.

1. Have you been involved with any of the alliances or partnering or any other collaboration in the UK upstream oil and gas industry? Please tick Yes ☐ No ☐

If Yes please go to question 2. If No please go to question 3.

2. Please give the name and member companies of up to 4 alliances in which you have been involved. Please make an assessment of the level of collaboration and level of success for each

No	Name of alliance and member companies	Starting year	Collaboration level	Level of success
1				
2				
3				
4				

For collaboration level: 1=Highly adversarial, 2=Fairly adversarial, 3=Neutral, 4=Fairly collaborative and 5= highly collaborative. For success level: 1= Absolute failure, 2= Partial failure, 3= Neither success nor failure, 4= Partial success, 5= Absolute success.

3. What type of organisation do you work for? Please tick

Operator	Contractor/ Supplier	Other (Please indicate)
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- 4.How many employees in your organisation? Please tick

1 - 9	10 - 49	50 - 249	250- 499	500 +
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5. Please suggest up to four important characteristics which distinguish alliances or partnering from contractual relationships:

1	3
2	4



6. Please list up to five criteria, in order of priority, which would indicate success or failure of alliances and partnering. (e.g. achievement of cost reduction targets)

Criteria of Success	Criteria of Failure
1	1
2	2
3	3
4	4
5	5

7. Please list up to six factors (e.g. trust), in order of priority, which are critical to the success of alliances and partnering.

1	4
2	5
3	6

8. Please list up to six factors in order of priority which often cause failure (e.g. absence of clear mission) of alliances or partnering.

1	4
2	5
3	6

9. Please circle a number to show how much you agree or disagree with the following statements (where 1=Strongly agree, 2 =Agree, 3 =Neither agree nor disagree, 4 =Disagree, 5 = Strongly disagree)

Partnering and alliancing is an appropriate strategy for operators and their contractors	1	2	3	4	5
Partnering and alliancing is a good strategy for operators but not for contractors	1	2	3	4	5
Partnering and alliancing is a good strategy for contractors but doesn't add value to operators	1	2	3	4	5
Small companies cannot fit in to alliances	1	2	3	4	5
Partnering and alliancing is a good idea, but the oil and gas industry is not gaining from it	1	2	3	4	5
Partnering and alliancing can lead to a loss of competitive edge	1	2	3	4	5
Partnering and alliancing can lead to abuse of confidential information	1	2	3	4	5
Partnering and alliancing is just a fad	1	2	3	4	5

10. How do you think relationships between companies will develop in the future?

11. Please make any other comment on alliancing or partnering.

Would you be prepared to be contacted further in connection with this research? ☐ yes ☐ no

Your name

Job Title

Company

Telephone No

e-mail



## **APPENDIX 2**

**List of Concepts and Themes which  
were Developed from the Responses  
of Phase 1 Study (Sorted by Use).**



Use: Distinguishing characteristic

Theme	Concept
Autonomy / Empowerment Behaviour / Attitude	Presence of Autonomy / Empowerment /initiative is a Distinguishing characteristic Absence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Distinguishing characteristic
Behaviour / Attitude	Absence of Blame culture is a Distinguishing characteristic
Behaviour / Attitude	Emphasis on Beliefs, attitudes, behaviours is a Distinguishing characteristic
Behaviour / Attitude	More of Co-operative (and supportive) behaviour is a Distinguishing characteristic
Behaviour / Attitude	Presence of Appreciative behaviour by customer is a Distinguishing characteristic
Behaviour / Attitude	Presence of Blame culture is a Distinguishing characteristic
Behaviour / Attitude	Presence of Co-operative (and supportive) behaviour is a Distinguishing
Behaviour / Attitude	Presence of Emphasis on continuous improvement is a Distinguishing characteristic
Behaviour / Attitude	Presence of High morale & "team spirit" is a Distinguishing characteristic
Behaviour / Attitude	Presence of High motivation is a Distinguishing characteristic
Behaviour / Attitude	Presence of Innovative behaviour is a Distinguishing characteristic
Behaviour / Attitude	Presence of Open behaviour and willingness to change is a Distinguishing characteristic
Behaviour / Attitude	Presence of Respect for other's confidential information is a Distinguishing characteristic
Behaviour / Attitude	Presence of Shared responsibility (and accountability) is a Distinguishing
Behaviour / Attitude	Presence of Trusting attitude/behaviour is a Distinguishing characteristic
Behaviour / Attitude	Presence of Understanding of others capabilities and needs is a Distinguishing characteristic
Commitment / Ownership / Buy in	Presence of Commitment of members to relationship and its success is a Distinguishing characteristic
Communication	Presence of Open and unhindered communication is a Distinguishing characteristic
Communication	Presence of Open communication of cost information is a Distinguishing
Communication	Presence of Shared knowledge and/or information is a Distinguishing characteristic
Control / Governance	Absence of Control of budget and/or expenditure and/or resources employed is a Distinguishing characteristic
Control / Governance	Presence of Effective management Board for the relationship is a Distinguishing characteristic
Control / Governance	Presence of Management of interfaces between companies or groups is a Distinguishing characteristic
Cost / Inefficiency / Waste	Less of Duplication of work is a Distinguishing characteristic
Cost / Inefficiency / Waste	Less of Excessive documentation is a Distinguishing characteristic
Custom and practice	Presence of Reference to client and or contract when problem arises is a Distinguishing characteristic
Expertise / Skill / Experience	Presence of Complementary expertise / skill / competence/ experience is a Distinguishing characteristic
Expertise / Skill / Experience	Presence of Training for alliance members is a Distinguishing characteristic
Goal/ Objective / Target	Absence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic
Goal/ Objective / Target	Achievement of Shared and aligned goals, objectives or targets is a Distinguishing characteristic
Goal/ Objective / Target	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic
Goal/ Objective / Target	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic
Goal/ Objective / Target	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic
Market	More of Market share of market influence is a Distinguishing characteristic
Openness / Honesty / Integrity / Sincerity	Absence of Customer openness , honesty, integrity and/or sincerity is a Distinguishing characteristic
Openness / Honesty / Integrity / Sincerity	Presence of Openness , Honesty, Integrity and/or Sincerity is a Distinguishing characteristic
Performance / Service level	Improved Satisfactory achieved level of performance or service is a Distinguishing characteristic



Performance / Service level	Presence of Flexibility or speed of response to changes is a Distinguishing characteristic
Performance / Service level	Presence of Satisfactory achieved level of performance or service is a Distinguishing characteristic
Public Image	Improved Public image is a Distinguishing characteristic
Relationship	Absence of Clear roles within relationship is a Distinguishing characteristic
Relationship	Absence of Formal contract is a Distinguishing characteristic
Relationship	Presence of Clear roles within relationship is a Distinguishing characteristic
Relationship	Presence of Close working relationship is a Distinguishing characteristic
Relationship	Presence of Cross equity holdings is a Distinguishing characteristic
Relationship	Presence of Friendship within relationship is a Distinguishing characteristic
Relationship	Presence of Non-adversarial relationship is a Distinguishing characteristic
Resources	More of Shared resources (including expertise) is a Distinguishing characteristic
Resources	Presence of Shared resources (including expertise) is a Distinguishing characteristic
Risk and reward / Benefit members	More of Risk, reward or profitability shared to the satisfaction of relationship is a Distinguishing characteristic
Risk and reward / Benefit	More of Shared benefit or risk and reward is a Distinguishing characteristic
Risk and reward / Benefit	Presence of Reward which depends on performance is a Distinguishing
Risk and reward / Benefit	Presence of Shared benefit or risk and reward is a Distinguishing characteristic
Standardisation	Presence of Use of standard equipment is a Distinguishing characteristic
Team	Appropriate Mix of people and skills in team is a Distinguishing characteristic
Team	Presence of Integrated team, without inter-company boundaries is a Distinguishing characteristic
Team	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Distinguishing characteristic
Team	Presence of Management working as a collaborative team is a Distinguishing characteristic
Team	Presence of Multi-disciplinary working is a Distinguishing characteristic
Team	Presence of Team approach to tasks and problem solving is a Distinguishing characteristic
Team	Presence of Team members located in same place is a Distinguishing characteristic
Work/Volume of business	More of Work or volume of business is a Distinguishing characteristic
Work/Volume of business	Presence of Continuity of work is a Distinguishing characteristic

## Use: Success Criterion

Theme	Concept
Behaviour / Attitude	Less of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Success criterion
Behaviour / Attitude	More of Understanding of others capabilities and needs is a Success criterion
Behaviour / Attitude	Presence of High morale & "team spirit" is a Success criterion
Behaviour / Attitude	Presence of Innovative behaviour is a Success criterion
Behaviour / Attitude	Presence of Open behaviour is a Success criterion
Behaviour / Attitude	Presence of Trusting attitude/behaviour is a Success criterion
Behaviour / Attitude	Presence of Willingness to discuss problems and solve them jointly is a Success criterion
Communication	Presence of Communication which is good, clear and frequent is a Success criterion
Communication	Presence of Good understanding of the language and terms used in the relationship is a Success criterion
Communication	Presence of Open and unhindered communication is a Success criterion
Communication	Presence of Open communication of cost information is a Success criterion
Communication criterion	Presence of Technology transfer between relationship members is a Success
Control / Governance	Presence of Control of growth of scope of work is a Success criterion
Control / Governance	Presence of Effective management Board for the relationship is a Success criterion
Control / Governance	Presence of Management of activities and risks, including action when performance is unsatisfactory is a Success criterion
Control / Governance criterion	Presence of Timely payment of contractors' / suppliers' invoices is a Success
Cost / Inefficiency / Waste	Less of Cost, inefficiency or waste is a Success criterion
Cost / Inefficiency / Waste	Less of Excessive documentation is a Success criterion



Custom and practice	Presence of Challenge to custom and practice is a Success criterion
Expertise / Skill / Experience	Improved Expertise / skill / competence/ experience is a Success criterion
Expertise / Skill / Experience	Presence of Complementary expertise / skill / competence/ experience is a Success criterion
Expertise / Skill / Experience	Presence of Expertise / skill / competence/ experience is a Success criterion
Fairness	Presence of Fair allocation of work is a Success criterion
Fairness	Presence of Fairness is a Success criterion
Goal/ Objective / Target	Achievement of Goals, objectives or targets expressed in terms of added value is a Success criterion
Goal/ Objective / Target saving	Achievement of Goals, objectives or targets expressed in terms of cost or cost (capex and/or opex) is a Success criterion
Goal/ Objective / Target	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion
Goal/ Objective / Target	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion
Goal/ Objective / Target	Achievement of Shared and aligned goals, objectives or targets is a Success criterion
Goal/ Objective / Target criterion	Presence of Clear and/or consistent goals, objectives or targets is a Success criterion
Goal/ Objective / Target	Presence of Shared and aligned goals, objectives or targets is a Success criterion
Goal/ Objective / Target	Presence of Well understood goals, objectives or targets is a Success criterion
Leadership	Presence of Leadership (strong and proactive) from senior managers is a Success criterion
Market	Presence of Market share of market influence is a Success criterion
Openness / Honesty / Integrity / Sincerity	Presence of Contractor openness , honesty, integrity and/or sincerity is a Success criterion
Performance / Service level	Absence of Problems which cause reduced performance is a Success criterion
Performance / Service level	Achievement of Satisfactory environmental protection performance is a Success criterion
Performance / Service level	Appropriate Balance between capex and opex is a Success criterion
Performance / Service Level	Improved Satisfactory achieved level of performance or service is a Success criterion
Performance / Service level	More of atisfactory achieved level of performance or service is a Success criterion
Performance / Service level	More of Satisfactory environmental protection performance is a Success criterion
Performance / Service level	More of Satisfactory safety performance is a Success criterion
Performance / Service level	More of Value of company shares (on stock market) is a Success criterion
Performance / Service level	Presence of Competitiveness of relationship performance as compared to the market is a Success criterion
Performance / Service level	Presence of Equipment functioning as specified is a Success criterion
Performance / Service level	Presence of Extraordinary performance derived from close working relationship is a Success criterion
Performance / Service level	Presence of Flexibility or speed of response to changes is a Success criterion
Performance / Service criterion level	Presence of Members perception that relationship is successful is a Success
Performance / Service level	Presence of Satisfactory achieved level of performance or service is a Success criterion
Performance / Service level	Presence of Satisfactory safety performance is a Success criterion
Performance / Service level	Presence of Work which meets or exceeds specification is a Success criterion
Plan	Presence of Clear and consistent plan is a Success criterion
Public Image	More of Public image is a Success criterion
Relationship	Less of Competitor companies as members of the relationship is a Success criterion
Relationship	Presence of Clear roles within relationship is a Success criterion
Relationship	Presence of Close working relationship is a Success criterion
Relationship criterion	Presence of Equal treatment of members within the relationship is a Success



Relationship	Presence of Friendship within relationship is a Success criterion
Resources	Presence of Adequate resources is a Success criterion
Resources	Presence of Shared resources (including expertise) is a Success criterion
Risk and reward / Benefit members	More of Risk, reward or profitability shared to the satisfaction of relationship is a Success criterion
Risk and reward / Benefit	Presence of Fair allocation of risks, rewards and profits is a Success criterion
Risk and reward / Benefit	Presence of Reward which depends on performance is a Success criterion
Risk and reward / Benefit	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion
Risk and reward / Benefit	Presence of Shared benefit or risk and reward is a Success criterion
Standardisation	Presence of Use of common working practices is a Success criterion
Supply chain	Presence of Collaboration across the supply chain is a Success criterion
Supply chain	Presence of Management of Supply Chain is a Success criterion
Team	Appropriate Mix of people and skills in team is a Success criterion
Team	More of Involvement of customer as a member of the team is a Success criterion
Work/Volume of business	More of Award of complete job rather than a part job. is a Success criterion
Work/Volume of business	More of Work or volume of business is a Success criterion
Work/Volume of business	Presence of Award of complete job rather than a part job. is a Success criterion
Work/Volume of business	Presence of Continuity of work is a Success criterion

## Use: Failure Criterion

Theme	Concept
Autonomy / Empowerment	Absence of Contractor/supplier willingness or ability to influence outcomes is a Failure criterion
Behaviour / Attitude	Absence of Co-operative (and supportive) behaviour is a Failure criterion
Behaviour / Attitude	Absence of High motivation is a Failure criterion
Behaviour / Attitude	Absence of Innovative behaviour is a Failure criterion
Behaviour / Attitude	Absence of Open behaviour and willingness to change is a Failure criterion
Behaviour / Attitude	Absence of Shared responsibility (and accountability) is a Failure criterion
Behaviour / Attitude	Absence of Trusting attitude/behaviour is a Failure criterion
Behaviour / Attitude	Absence of Understanding of others capabilities and needs is a Failure criterion
Behaviour / Attitude	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion
Behaviour / Attitude	Presence of Blame culture is a Failure criterion
Commitment / Ownership / Buy in	Absence of Commitment of members to relationship and its success is a Failure criterion
Communication	Absence of Communication which is good, clear and frequent is a Failure criterion
Communication	Absence of Good understanding of the language and terms used in the relationship is a Failure criterion
Communication	Absence of Open and unhindered communication is a Failure criterion
Communication	Absence of Shared knowledge and/or information is a Failure criterion
Control / Governance	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion
Control / Governance	Absence of Timely payment of contractors' / suppliers' invoices is a Failure criterion
Cost / Inefficiency / Waste	More of Excessive bureaucratic procedures is a Failure criterion
Cost / Inefficiency / Waste	Presence of Cost, inefficiency or waste is a Failure criterion
Cost / Inefficiency / Waste	Presence of Duplication of work is a Failure criterion
Cost / Inefficiency / Waste	Presence of Excessive documentation is a Failure criterion
Custom and practice	Presence of Reference to client and or contract when problem arises is a Failure criterion
Custom and practice	Presence of Reversion to old (adversarial) custom and practice is a Failure criterion
Fairness	Absence of Fair allocation of work is a Failure criterion
Fairness	Absence of Fairness is a Failure criterion
Goal/ Objective / Target	Absence of Clear and/or consistent goals, objectives or targets is a Failure criterion
Goal/ Objective / Target	Absence of Shared and aligned goals, objectives or targets is a Failure criterion
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets expressed in terms of production is a Failure criterion



Goal/ Objective / Target	Non-achievement of Goals, objectives or targets expressed in terms of time is a Failure criterion
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets is a Failure criterion
Goal/ Objective / Target	Presence of Clear and/or consistent goals, objectives or targets is a Failure criterion
Leadership	Absence of Leadership (strong and proactive) from senior managers is a Failure criterion
Performance / Service level	Absence of Customer perception of satisfactory achieved level of performance or service is a Failure criterion
Performance / Service level	Absence of Equipment functioning as specified is a Failure criterion
Performance / Service criterion level	Absence of Satisfactory achieved level of performance or service is a Failure
Performance / Service level	Absence of Satisfactory environmental protection performance is a Failure criterion
Performance / Service level	Absence of Satisfactory safety performance is a Failure criterion
Performance / Service level	Absence of Work which meets or exceeds specification is a Failure criterion
Performance / Service level	Less of Value of company shares (on stock market) is a Failure criterion
Relationship	Absence of Clear roles within relationship is a Failure criterion
Relationship	Absence of Close working relationship is a Failure criterion
Relationship	Absence of Good industrial relations is a Failure criterion
Relationship	Inappropriate Capability and/or culture of companies in relationship is a Failure
Relationship	Presence of Culture differences which are not addressed is a Failure criterion
Relationship	Presence of Industrial dispute is a Failure criterion
Resources	Absence of Adequate resources is a Failure criterion
Risk and reward / Benefit	Absence of Fair allocation of risks, rewards and profits is a Failure criterion
Risk and reward / Benefit	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion
Risk and reward / Benefit	Absence of Shared benefit or risk and reward is a Failure criterion
Risk and reward / Benefit	Presence of Imposed penalty payments or "painshare" is a Failure criterion
Team	Absence of Integrated team, without inter-company boundaries is a Failure criterion
Team	Absence of Team approach to tasks and problem solving is a Failure criterion
Team	Inappropriate Mix of people and skills in team is a Failure criterion
Work/Volume of business	Absence of Continuity of work is a Failure criterion
Work/Volume of business	Less of Work or volume of business is a Failure criterion

## Use: Success Factor

Theme	Concept
Autonomy / Empowerment	Presence of Autonomy / Empowerment /initiative is a Success factor
Behaviour / Attitude	Absence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Success factor
Behaviour / Attitude	Absence of Blame culture is a Success factor
Behaviour / Attitude	Absence of Sole emphasis on initial capital expenditure is a Success factor
Behaviour / Attitude	Presence of Belief in collaboration as an appropriate and beneficial strategy is a Success factor
Behaviour / Attitude	Presence of Co-operative (and supportive) behaviour is a Success factor
Behaviour / Attitude	Presence of High motivation is a Success factor
Behaviour / Attitude	Presence of Innovative behaviour is a Success factor
Behaviour / Attitude	Presence of Open behaviour and willingness to change is a Success factor
Behaviour / Attitude	Presence of Open behaviour is a Success factor
Behaviour / Attitude	Presence of Shared responsibility (and accountability) is a Success factor
Behaviour / Attitude	Presence of Tolerant behaviour is a Success factor
Behaviour / Attitude	Presence of Trusting attitude/behaviour is a Success factor
Behaviour / Attitude	Presence of Understanding of others capabilities and needs is a Success factor
Commitment / Ownership / Buy in	Presence of Commitment of members to relationship and its success is a Success factor
Communication	Presence of Open and unhindered communication is a Success factor



Communication	Presence of Shared knowledge and/or information is a Success factor
Communication	Presence of Technology transfer between relationship members is a Success factor
Control / Governance	Presence of Clear written contract is a Success factor
Control / Governance	Presence of Control of budget and/or expenditure and/or resources employed is a Success factor
Control / Governance	Presence of Effective organisational structure for relationship is a Success factor
Control / Governance	Presence of Management of activities and risks, including action when performance is unsatisfactory is a Success factor
Custom and practice	Presence of Challenge to custom and practice is a Success factor
Expertise / Skill / Experience	Appropriate Expertise / skill / competence/ experience is a Success factor
Expertise / Skill / Experience	Presence of Complementary expertise / skill / competence/ experience is a Success factor
Expertise / Skill / Experience	Presence of Expertise / skill / competence/ experience is a Success factor
Fairness	Presence of Fairness is a Success factor
Goal/ Objective / Target	Appropriate Clear and/or consistent goals, objectives or targets is a Success factor
Goal/ Objective / Target	Presence of Clear and/or consistent goals, objectives or targets is a Success factor
Goal/ Objective / Target	Presence of Shared and aligned goals, objectives or targets is a Success factor
Goal/ Objective / Target	Presence of Stretch Goals, objectives or targets is a Success factor
Leadership	Presence of Celebration of success within the relationship is a Success factor
Leadership	Presence of Early establishment of collaborative principles is a Success factor
Leadership	Presence of Leadership (strong and proactive) from senior managers is a Success factor
Market	Absence of External market changes is a Success factor
Market	Absence of Low oil price is a Success factor
Openness / Honesty / Integrity / Sincerity	Presence of Openness , Honesty, Integrity and/or Sincerity is a Success factor
Performance / Service level	Improved Satisfactory safety performance is a Success factor
Performance / Service level	Presence of Flexibility or speed of response to changes is a Success factor
Performance / Service level	Presence of Measurement of performance or service level is a Success factor
Performance / Service level	Presence of Work which meets or exceeds specification is a Success factor
Plan	Presence of Clear and consistent plan is a Success factor
Relationship	Absence of Culture differences which are not addressed is a Success factor
Relationship	Appropriate Capability and/or culture of companies in relationship is a Success factor
Relationship	Presence of Clear roles within relationship is a Success factor
Relationship	Presence of Close working relationship is a Success factor
Relationship	Presence of Cross equity holdings is a Success factor
Relationship	Presence of Involvement of small companies in the relationship is a Success factor
Relationship	Presence of Long term relationship is a Success factor
Resources	Presence of Adequate resources is a Success factor
Risk and reward / Benefit	Presence of Fair allocation of risks, rewards and profits is a Success factor
Risk and reward / Benefit	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success factor
Risk and reward / Benefit	Presence of Shared benefit or risk and reward is a Success factor
Team	Appropriate Mix of people and skills in team is a Success factor
Team	Presence of Integrated team, without inter-company boundaries is a Success factor
Team	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Success factor
Team	Presence of Involvement of customer as a member of the team is a Success factor
Team	Presence of Team approach to tasks and problem solving is a Success factor



# Use:Failure Factor

## Theme

## Concept

Autonomy / Empowerment	Absence of Contractor/supplier willingness or ability to influence outcomes is a Failure factor
Autonomy / Empowerment	Absence of Customer willingness to empower contractors and suppliers is a Failure factor
Behaviour / Attitude	Absence of High morale & "team spirit" is a Failure factor
Behaviour / Attitude	Absence of Innovative behaviour is a Failure factor
Behaviour / Attitude	Absence of Open behaviour and willingness to change is a Failure factor
Behaviour / Attitude	Absence of Respect for other's confidential information is a Failure factor
Behaviour / Attitude	Absence of Trusting attitude/behaviour is a Failure factor
Behaviour / Attitude	Absence of Willingness to discuss problems and solve them jointly is a Failure factor
Behaviour / Attitude	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor
Behaviour / Attitude	Presence of Blame culture is a Failure factor
Behaviour / Attitude	Presence of Sole emphasis on initial capital expenditure is a Failure factor
Behaviour / Attitude	Presence of Sole emphasis on price or unit cost is a Failure factor
Commitment / Ownership / Buy in	Absence of Commitment of management to relationship and its success is a Failure factor
Commitment / Ownership / Buy in	Absence of Commitment of members to relationship and its success is a Failure factor
Communication	Absence of Communication which is good, clear and frequent is a Failure factor
Communication	Absence of Good understanding of the language and terms used in the relationship is a Failure factor
Communication	Absence of Open and unhindered communication is a Failure factor
Communication	Absence of Shared knowledge and/or information is a Failure factor
Communication	Presence of Misunderstanding within the relationship is a Failure factor
Control / Governance	Absence of Clear written contract is a Failure factor
Control / Governance	Absence of Control of budget and/or expenditure and/or resources employed is a Failure factor
Control / Governance	Absence of Management of activities and risks, including action when performance is unsatisfactory is a Failure factor
Control / Governance	Absence of Time spent to build and nurture the relationship is a Failure factor
Cost / Inefficiency / Waste	Presence of Cost, inefficiency or waste is a Failure factor
Custom and practice	Presence of Reversion to old (adversarial) custom and practice is a Failure factor
Expertise / Skill / Experience	Absence of Expertise / skill / competence/ experience is a Failure factor
Expertise / Skill / Experience	Absence of Training for alliance members is a Failure factor
Goal/ Objective / Target	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor
Goal/ Objective / Target	Absence of Shared and aligned goals, objectives or targets is a Failure factor
Goal/ Objective / Target	Absence of Well understood goals, objectives or targets is a Failure factor
Goal/ Objective / Target	Inappropriate Goals, objectives or targets expressed in terms of time is a Failure factor
Goal/ Objective / Target	Inappropriate Shared and aligned goals, objectives or targets is a Failure factor
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Failure factor
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets expressed in terms of time is a Failure factor
Goal/ Objective / Target	Non-achievement of Goals, objectives or targets is a Failure factor
Leadership	Absence of Leadership (strong and proactive) from senior managers is a Failure factor
Market	Presence of External market changes is a Failure factor
Openness / Honesty / Integrity / Sincerity	Absence of Contractor openness , honesty, integrity and/or sincerity is a Failure factor
Openness / Honesty / Integrity / Sincerity	Absence of Customer openness , honesty, integrity and/or sincerity is a Failure factor
Openness / Honesty / Integrity / Sincerity	Absence of Measurement of performance or service level is a Failure factor
Performance / Service level	Absence of Measurement of performance or service level is a Failure factor



Performance / Service level	Absence of Satisfactory performance or contribution by a member company is a Failure factor
Performance / Service level	Absence of Satisfactory safety performance is a Failure factor
Performance / Service level	Absence of Work which meets or exceeds specification is a Failure factor
Plan	Absence of Clear and consistent plan is a Failure factor
Relationship	Absence of Clear roles within relationship is a Failure factor
Relationship	Absence of Close working relationship is a Failure factor
Relationship	Inappropriate Capability and/or culture of companies in relationship is a Failure factor
Relationship	Inappropriate Number of member companies in relationship is a Failure factor
Relationship	Presence of Culture differences which are not addressed is a Failure factor
Resources	Absence of Adequate resources is a Failure factor
Risk and reward / Benefit	Absence of Fair allocation of risks, rewards and profits is a Failure factor
Risk and reward / Benefit	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure factor
Team	Absence of Continuity of team members is a Failure factor
Team	Absence of Integrated team, without inter-company boundaries is a Failure factor
Team	Absence of Involvement of customer as a member of the team is a Failure factor
Team	Absence of Management working as a collaborative team is a Failure factor
Work/Volume of business	Absence of Work or volume of business is a Failure factor



# **APPENDIX 3**

**Analysis of Concepts from the Perspective of  
Respondents' Company Types, Company Sizes,  
Job Levels, and Their Alliances Experiences.**



### Distinguishing characteristics- by company type

SL No	Distinguishing characteristics mentioned by contractors/suppliers ( Number of responses =190)	Percent of responses
1	Presence of co-operation is a Distinguishing characteristic	9%
2	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	8%
3	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	6%
4	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	6%
5	More of Work or volume of business is a Distinguishing characteristic	6%
6	Presence of High morale & "team spirit" is a Distinguishing characteristic	5%
7	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic	4%
8	Presence of Integrated team, without inter-company boundaries is a Distinguishing characteristic	4%
9	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	4%
10	Presence of flexibility is a distinguishing characteristic	4%

SL No	Distinguishing characteristics mentioned by operators ( Number of responses =90)	Percent of responses
1	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	13%
2	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	11%
3	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	9%
4	Presence of Close working relationship is a Distinguishing characteristic	6%
5	Willingness to change is a Distinguishing characteristic	6%
6	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	5%
7	Presence of co-operation is a Distinguishing characteristic	5%
8	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic	4%
9	Presence of Commitment of members to relationship and its success is a Distinguishing characteristic	4%
10	More of Work or volume of business is a Distinguishing characteristic	3%



### Distinguishing characteristics- by company size

SL No	Distinguishing characteristics mentioned by large companies ( Number of responses =192)	Percent of responses
1	Presence of co-operation is a Distinguishing Characteristic	11%
2	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	9%
3	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	9%
4	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	6%
5	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	5%
6	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic	5%
7	Presence of Close working relationship is a Distinguishing characteristic	4%
8	Presence of team spirit is a Distinguishing characteristic	4%
9	Willingness to change is a Distinguishing characteristic	4%
10	Presence of open and unhindered communication is a distinguishing characteristic	3%

SL No	Distinguishing characteristics mentioned by Medium size companies ( Number of responses =58)	Percent of responses
1	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	10%
2	More of Work or volume of business is a Distinguishing characteristic	9%
3	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	7%
4	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	7%
5	Presence of Flexibility is a Distinguishing characteristic	7%
6	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	5%
7	Presence of team spirit is a Distinguishing characteristic	5%
8	Presence of Commitment of members to relationship and its success is a Distinguishing characteristic	3%
9	Absence of Clear roles within relationship is a Distinguishing characteristic	3%
10	Presence of Innovative behaviour is a Distinguishing characteristic	3%

SL No	Distinguishing characteristics mentioned by small size companies ( Number of responses = 47)	Percent of responses
1	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	11%
2	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	9%
3	More of Work or volume of business is a Distinguishing characteristic	9%
4	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	6%
5	Presence of team spirit is a Distinguishing characteristic	6%
6	Presence of Close working relationship is a Distinguishing characteristic	6%
7	Presence of Open behaviour and willingness to change is a Distinguishing characteristic	6%
8	Presence of Open and unhindered communication is a Distinguishing characteristic	6%
9	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	4%
10	Presence of co-operation is a Distinguishing Characteristic	4%



**Distinguishing characteristics- by job level**

SL No	Top fifteen distinguishing characteristics mentioned by senior managers (Number of responses = 86)	Percent of responses
1	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	9%
2	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	7%
3	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	7%
4	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	6%
5	Presence of Close working relationship is a Distinguishing characteristic	6%
6	Presence of team spirit is a Distinguishing characteristic	6%
7	Willingness to change is a Distinguishing characteristic	5%
8	Presence of Open communication of cost information is a Distinguishing characteristic	5%
9	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic	5%
10	Presence of co-operation is a Distinguishing characteristic	5%

SL No	Top fifteen distinguishing characteristics mentioned by middle managers (Number of responses =145)	Percent of responses
1	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	10%
2	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	8%
3	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	8%
4	Presence of co-operation is a Distinguishing characteristic	7%
5	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	6%
6	Presence of Flexibility is a Distinguishing characteristic	6%
7	Presence of Close working relationship is a Distinguishing characteristic	4%
8	Presence of team spirit is a Distinguishing characteristic	4%
9	Presence of Integrated team, without inter-company boundaries is a Distinguishing characteristic	4%
10	Willingness to change is a Distinguishing characteristic	3%



**Distinguishing characteristics -by respondents experiences with alliances**

SL No	Distinguishing characteristics mentioned by involved respondents (Number of responses = 201)	Percent of responses
1	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	10%
2	Presence of co-operation is a Distinguishing characteristic	10%
3	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	8%
4	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	6%
5	Presence of team spirit is a Distinguishing characteristic	5%
6	Presence of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Distinguishing characteristic	5%
7	Willingness to change is a Distinguishing characteristic	4%
8	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	4%
9	Presence of Close working relationship is a Distinguishing characteristic	4%
10	More of Work or volume of business is a Distinguishing characteristic	3%

SL No	Distinguishing characteristics mentioned by not involved respondents (Number of responses =96)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Distinguishing characteristic	10%
2	Presence of Shared and aligned goals, objectives or targets is a Distinguishing characteristic	8%
3	Presence of Shared benefit or risk and reward is a Distinguishing characteristic	6%
4	More of Work or volume of business is a Distinguishing characteristic	6%
5	Presence of co-operation is a Distinguishing characteristic	5%
6	Presence of Flexibility is a Distinguishing characteristic	5%
7	Presence of Open and unhindered communication is a Distinguishing characteristic	4%
8	Presence of Clear and/or consistent goals, objectives or targets is a Distinguishing characteristic	3%
9	Presence of team spirit is a Distinguishing characteristic	3%
10	Presence of Close working relationship is a Distinguishing characteristic	3%



### Criteria of success- by job category

SL No	Criteria of success mentioned by senior managers (SM) ( number of responses = 100)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	18%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	9%
3	More of Work or volume of business is a Success criterion	5%
4	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	5%
5	Presence of Shared and aligned goals, objectives or targets is a Success criterion	4%
6	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	4%
7	Presence of Continuity of work is a Success criterion	4%
8	More of Satisfactory safety performance is a Success criterion	3%
9	Presence of Work which meets or exceeds specification is a Success criterion	3%
10	Presence of Trusting attitude/behaviour is a Success criterion	3%

SL No	Criteria of success mentioned by middle managers (MM) ( number of responses =143)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	14%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	10%
3	More of Work or volume of business is a Success criterion	8%
4	Presence of Satisfactory safety performance is a Success criterion	8%
5	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	7%
6	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	6%
7	Presence of Shared and aligned goals, objectives or targets is a Success criterion	5%
8	Presence of Equipment functioning as specified is a Success criterion	3%
9	Presence of work which meets or exceeds specification is a success criterion	2%
10	Achievement of Goals or targets expressed in terms of production is a Success criterion	2%



### Criteria of success- by company type

SL No	Criteria of success mentioned by contractors/suppliers (number of responses = 177)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	15%
2	More of Work or volume of business is a Success criterion	8%
3	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	7%
4	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	6%
5	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	3%
6	Presence of Shared and aligned goals, objectives or targets is a Success criterion	3%
7	Presence of Continuity of work is a Success criterion	3%
8	Presence of Equipment functioning as specified is a Success criterion	3%
9	Presence of Satisfactory safety performance is a Success criterion	3%
10	Presence of Shared benefit or risk and reward is a Success criterion	3%

SL No	Criteria of success mentioned by operators ( number of responses = 91)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	13%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	11%
3	Presence of Shared benefit or risk and reward is a Success criterion	8%
4	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	7%
5	Presence of Shared and aligned goals, objectives or targets is a Success criterion	7%
6	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	5%
7	Presence of Satisfactory safety performance is a Success criterion	5%
8	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	5%
9	More of Work or volume of business is a Success criterion	4%
10	More of Satisfactory safety performance is a Success criterion	3%

SL No	Criteria of success mentioned by others (number of responses = 26)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	23%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	12%
3	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	8%
4	Presence of Work which meets or exceeds specification is a Success criterion	8%
5	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	4%
6	More of Work or volume of business is a Success criterion	4%
7	More of Satisfactory safety performance is a Success criterion	4%
8	Presence of Innovative behaviour is a Success criterion	4%
9	Less of Cost, inefficiency or waste is a Success criterion	4%
10	Presence of Continuity of work is a Success criterion	4%



### Criteria of success-by company size

SL No	Criteria of success mentioned by large companies (number of responses = 199)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	14%
2	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	12%
3	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	10%
4	More of Work or volume of business is a Success criterion	7%
5	Presence of Satisfactory safety performance is a Success criterion	7%
6	Presence of Shared and aligned goals, objectives or targets is a Success criterion	5%
7	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	5%
8	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	4%
9	Presence of equipment functioning as specified is a success criterion	3%
10	Presence of work which meet or exceed satisfaction is a success criterion	3%

SL No	Criteria of success mentioned by medium companies (number of responses = 55)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	13%
2	More of Work or volume of business is a Success criterion	7%
3	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	7%
4	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	5%
5	Presence of Continuity of work is a Success criterion	5%
6	Less of Cost, inefficiency or waste is a Success criterion	5%
7	Presence of Communication which is good, clear and frequent is a Success criterion	5%
8	Presence of Satisfactory safety performance is a Success criterion	4%
9	Appropriate Mix of people and skills in team is a Success criterion	4%
10	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	2%

SL No	Criteria of success mentioned by small companies ( number of responses = 40)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	25%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	10%
3	More of Work or volume of business is a Success criterion	6%
4	Presence of Shared and aligned goals, objectives or targets is a Success criterion	5%
5	Presence of Shared benefit or risk and reward is a Success criterion	5%
6	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	3%
7	Presence of Satisfactory safety performance is a Success criterion	3%
8	Presence of Work which meets or exceeds specification is a Success criterion	3%
9	Presence of Trusting attitude/behaviour is a Success criterion	3%
10	Appropriate Mix of people and skills in team is a Success criterion	3%



Criteria of success - by alliance involvement

SL No	Criteria of success mentioned by involved respondents (number of responses =210)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	13%
2	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	9%
3	Presence of Risk, reward or profitability shared to the satisfaction of relationship members is a Success criterion	8%
4	Presence of Shared and aligned goals, objectives or targets is a Success criterion	5%
5	Presence of Shared benefit or risk and reward is a Success criterion	5%
6	Presence of Satisfactory safety performance is a Success criterion	5%
7	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	4%
8	More of Work or volume of business is a Success criterion	3%
9	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	3%
10	More of Satisfactory safety performance is a Success criterion	3%

SL No	Criteria of success mentioned by not involved respondents (number of responses = 185)	Percent of responses
1	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	20%
2	More of Work or volume of business is a Success criterion	14%
3	Achievement of Goals, objectives or targets expressed in terms of time is a Success criterion	8%
4	Achievement of Shared and aligned goals, objectives or targets is a Success criterion	4%
5	Achievement of Goals, objectives or targets expressed in terms of production is a Success criterion	2%
6	Presence of Continuity of work is a Success criterion	2%
7	Presence of Work which meets or exceeds specification is a Success criterion	2%
8	Presence of Open communication is a Success criterion	2%
9	Obtaining more comprehensive orders is a criterion of success	2%
10	Presence of better competitiveness is a criterion of success	2%



### Criteria of failure- by company type

SL No	Criteria of failure mentioned by contractors/suppliers ( number of responses =154)	Percent of responses
1	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	10%
2	Non-achievement of Goals, objectives or targets is a Failure criterion	8%
3	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	8%
4	Absence of Close working relationship is a Failure criterion	5%
5	Absence of Open and unhindered communication is a Failure criterion	5%
6	Non-achievement of Goals expressed in terms of time is a Failure criterion	4%
7	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion	4%
8	Absence of Satisfactory safety performance is a Failure criterion	3%
9	Absence of Trusting attitude/behaviour is a Failure criterion	3%
10	Absence of Work which meets or exceeds specification is a Failure criterion	3%

SL No	Criteria of failure mentioned by operators ( number of responses =71)	Percent of responses
1	Non-achievement of Goals, objectives or targets is a Failure criterion	20%
2	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	11%
3	Absence of Satisfactory safety performance is a Failure criterion	10%
4	Non-achievement of Goals expressed in terms of time is a Failure criterion	7%
5	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	6%
6	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion	6%
7	Absence of Work which meets or exceeds specification is a Failure criterion	4%
8	Absence of Trusting attitude/behaviour is a Failure criterion	3%
9	Absence of Continuity of work is a Failure criterion	3%
10	Absence of Equipment functioning as specified is a Failure criterion	3%

SL No	Criteria of failure mentioned by others (number of responses = 24)	Percent of responses
1	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	21%
2	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	21%
3	Non-achievement of Goals expressed in terms of time is a Failure criterion	13%
4	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion	8%
5	Absence of Continuity of work is a Failure criterion	8%
6	Non-achievement of Goals, objectives or targets is a Failure criterion	4%
7	Absence of Trusting attitude/behaviour is a Failure criterion	4%
8	Presence of Blame culture is a Failure criterion	4%
9	Presence of Imposed penalty payments or "pain share" is a Failure criterion	4%
10	Inappropriate Mix of people and skills in team is a Failure criterion	4%



### Criteria of failure-company size

SL No	Criteria of failure mentioned by large companies ( number of responses =178)	Percent of responses
1	Non-achievement of Goals, objectives or targets is a Failure criterion	14%
2	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	11%
3	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	9%
4	Non-achievement of Goals expressed in terms of time is a Failure criterion	7%
5	Absence of Satisfactory safety performance is a Failure criterion	6%
6	Absence of Close working relationship is a Failure criterion	4%
7	Absence of Work which meets or exceeds specification is a Failure criterion	4%
8	Absence of Continuity of work is a Failure criterion	3%
9	Absence of Equipment functioning as specified is a Failure criterion	3%
10	Absence of Trusting attitude/behaviour is a Failure criterion	2%

SL NO	Criteria of failure mentioned by medium companies (number of responses = 48)	Percent of responses
1	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	10%
2	Absence of Open and unhindered communication is a Failure criterion	8%
3	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion	8%
4	Absence of Continuity of work is a Failure criterion	6%
5	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion	6%
6	Non-achievement of Goals, objectives or targets is a Failure criterion	4%
7	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	4%
8	Non-achievement of Goals expressed in terms of time is a Failure criterion	4%
9	Absence of Satisfactory safety performance is a Failure criterion	4%
10	Absence of Trusting attitude/behaviour is a Failure criterion	4%

SL No	Criteria of failure mentioned by small size companies (number of responses =23)	Percent of responses
1	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	17%
2	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	13%
3	Absence of Trusting attitude/behaviour is a Failure criterion	9%
4	Absence of Shared and aligned goals, objectives or targets is a Failure criterion	9%
5	Absence of Fair allocation of work is a Failure criterion	9%
6	Non-achievement of Goals, objectives or targets is a Failure criterion	4%
7	Absence of Close working relationship is a Failure criterion	4%
8	Absence of Open and unhindered communication is a Failure criterion	4%
9	Absence of Leadership (strong and proactive) from senior managers is a Failure criterion	4%
10	Absence of Open behaviour and willingness to change is a Failure factor	4%



**Criteria of failure- by job category**

SL No	Criteria of failure mentioned by senior managers (number of responses =88)	Percent of responses
1	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	15%
2	Non-achievement of Goals, objectives or targets is a Failure criterion	13%
3	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	11%
4	Non-achievement of Goals, objectives or targets expressed in terms of time is a Failure criterion	5%
5	Absence of Satisfactory safety performance is a Failure criterion	5%
6	Absence of Continuity of work is a Failure criterion	5%
7	Absence of Open and unhindered communication is a Failure criterion	5%
8	Absence of Close working relationship is a Failure criterion	2%
9	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion	2%
10	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion	2%

SL No	Criteria of failure mentioned by middle managers (number of responses = 116)	Percent of responses
1	Non-achievement of Goals, objectives or targets is a Failure criterion	12%
2	Non-achievement of Goals expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	9%
3	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	8%
4	Non-achievement of Goals expressed in terms of time is a Failure criterion	6%
5	Absence of Satisfactory safety performance is a Failure criterion	5%
6	Absence of Close working relationship is a Failure criterion	5%
7	Absence of Trusting attitude/behaviour is a Failure criterion	5%
8	Absence of Work which meets or exceeds specification is a Failure criterion	4%
9	Absence of Continuity of work is a Failure criterion	3%
10	Absence of Open and unhindered communication is a Failure criterion	3%



**Criteria of failure by alliance involvement**

SL No	Criteria of failure mentioned by involved respondents (number of responses =185)	Percent of responses
1	Non-achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	11%
2	Non-achievement of Goals, objectives or targets is a Failure criterion	11%
3	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	7%
4	Absence of Satisfactory safety performance is a Failure criterion	6%
5	Non-achievement of Goals, objectives or targets expressed in terms of time is a Failure criterion	5%
6	Absence of Close working relationship is a Failure criterion	3%
7	Absence of Continuity of work is a Failure criterion	3%
8	Absence of Work which meets or exceeds specification is a Failure criterion	3%
9	Absence of Control of budget and/or expenditure and/or resources employed is a Failure criterion	3%
10	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion	3%

SL No	Criteria of failure mentioned by not involved respondents (number of responses = 64)	Percent of responses
1	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure criterion	14%
2	Non-achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Failure criterion	11%
3	Non-achievement of Goals, objectives or targets is a Failure criterion	11%
4	Non-achievement of Goals, objectives or targets expressed in terms of time is a Failure criterion	6%
5	Absence of Open and unhindered communication is a Failure criterion	6%
6	Absence of Trusting attitude/behaviour is a Failure criterion	6%
7	Absence of Close working relationship is a Failure criterion	5%
8	Absence of Continuity of work is a Failure criterion	3%
9	Absence of Work which meets or exceeds specification is a Failure criterion	3%
10	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure criterion	3%



### Critical success factors- by company types

SL No	Critical success factors mentioned by mentioned contractors/supplier (Number of responses =186)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	17%
2	Presence of Open behaviour is a Success factor	6%
3	Presence of Shared knowledge and/or information is a Success factor	6%
4	Presence of Shared and aligned goals, objectives or targets is a Success factor	5%
5	Presence of Clear roles within relationship is a Success factor	4%
6	Presence of Co-operative (and supportive) behaviour is a Success factor	4%
7	Presence of Honesty and Sincerity is a Success factor	4%
8	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Success factor	4%
9	Presence of Commitment of members to relationship and its success is a Success factor	3%
10	Presence of Integrated team, without inter-company boundaries is a Success factor	3%

SL No	Critical success factors mentioned by operators (Number of responses = 90)	Percent of responses
1	Presence of Shared and aligned goals, objectives or targets is a Success factor	14%
2	Presence of Trusting attitude/behaviour is a Success factor	10%
3	Presence of Clear roles within relationship is a Success factor	6%
4	Presence of Open behaviour is a Success factor	4%
5	Presence of Co-operative (and supportive) behaviour is a Success factor	4%
6	Presence of Commitment of members to relationship and its success is a Success factor	4%
7	Presence of Shared knowledge and/or information is a Success factor	3%
8	Presence of Honesty and Sincerity is a Success factor	3%
9	Presence of Understanding of others capabilities and needs is a Success factor	3%
10	Presence of Clear written contract is a Success factor	3%

SL No	Critical success factors mentioned by others types of company (Number of responses = 31)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	16%
2	Presence of Open behaviour is a Success factor	10%
3	Presence of Commitment of members to relationship and its success is a Success factor	6%
4	Presence of Shared knowledge and/or information is a Success factor	6%
5	Presence of Honesty and Sincerity is a Success factor	6%
6	Presence of Shared and aligned goals, objectives or targets is a Success factor	3%
7	Presence of Clear roles within relationship is a Success factor	3%
8	Presence of Co-operative (and supportive) behaviour is a Success factor	3%
9	Presence of Integrated team, without inter-company boundaries is a Success factor	3%
10	Presence of Clear and/or consistent goals, objectives or targets is a Success factor	3%



### Critical success factors- by Job category

SL No	Critical success factors stated by Senior Managers (Number of responses =112)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	15%
2	Presence of Shared and aligned goals, objectives or targets is a Success factor	6%
3	Presence of Commitment of members to relationship and its success is a Success factor	5%
4	Presence of Open behaviour is a Success factor	4%
5	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Success factor	4%
6	Presence of Honesty and Sincerity is a Success factor	4%
7	Presence of Integrated team, without inter-company boundaries is a Success factor	4%
8	Presence of Clear written contract is a Success factor	4%
9	Presence of Clear and/or consistent goals, objectives or targets is a Success factor	4%
10	Presence of Shared benefit or risk and reward is a Success factor	4%

SL No	Critical success factors stated by Middle managers (Number of responses =138)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	14%
2	Presence of Shared and aligned goals, objectives or targets is a Success factor	9%
3	Presence of Shared knowledge and/or information is a Success factor	6%
4	Presence of Co-operative (and supportive) behaviour is a Success factor	6%
5	Presence of Open behaviour is a Success factor	5%
6	Presence of Honesty and Sincerity is a Success factor	4%
7	Presence of Clear roles within relationship is a Success factor	4%
8	Presence of Integrated team, without inter-company boundaries is a Success factor	3%
9	Presence of Leadership (strong and proactive) from senior managers is a Success factor	3%
10	Presence of Shared responsibility (and accountability) is a Success factor	3%



**Critical success factors -by company size**

SL No	Critical success factors mentioned by large companies (Number of responses =197)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	13%
2	Presence of Shared and aligned goals, objectives or targets is a Success factor	9%
3	Presence of Open behaviour is a Success factor	7%
4	Presence of Co-operative (and supportive) behaviour is a Success factor	6%
5	Presence of Shared knowledge and/or information is a Success factor	5%
6	Presence of Clear roles within relationship is a Success factor	5%
7	Presence of Commitment of members to relationship and its success is a Success factor	4%
8	Presence of Integrated team, without inter-company boundaries is a Success factor	4%
9	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Success factor	4%
10	Presence of Understanding of others capabilities and needs is a Success factor	3%

SL No	Critical success factors mentioned by medium companies (Number of responses =73)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	15%
2	Presence of Shared and aligned goals, objectives or targets is a Success factor	7%
3	Presence of Shared knowledge and/or information is a Success factor	7%
4	Presence of Honesty and Sincerity is a Success factor	5%
5	Presence of Open behaviour is a Success factor	4%
6	Presence of Commitment of members to relationship and its success is a Success factor	4%
7	Presence of Open and unhindered communication is a Success factor	4%
8	Presence of Clear roles within relationship is a Success factor	3%
9	Presence of Leadership (strong and proactive) from senior managers is a Success factor	3%
10	Presence of Clear and/or consistent goals, objectives or targets is a Success factor	3%

SL No	Critical success factors mentioned by small companies (Number of responses =37)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	24%
2	Presence of Openness , Honesty, Integrity and/or Sincerity is a Success factor	11%
3	Presence of Open behaviour is a Success factor	5%
4	Presence of Shared knowledge and/or information is a Success factor	5%
5	Presence of Clear roles within relationship is a Success factor	5%
6	Presence of Flexibility or speed of response to changes is a Success factor	5%
7	Presence of Shared benefit or risk and reward is a Success factor	5%
8	Achievement of Goals, objectives or targets expressed in terms of cost or cost saving (capex and/or opex) is a Success criterion	5%
9	Presence of Stretch Goals, objectives or targets is a Success factor	5%
10	Presence of Commitment of members to relationship and its success is a Success factor	3%



### Critical success factors- by alliance involvement

SL No	Critical success factors mentioned by involved respondents (Number of responses = 241)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	14%
2	Presence of Shared and aligned goals, objectives or targets is a Success factor	8%
3	Presence of Open behaviour is a Success factor	6%
4	Presence of Shared knowledge and/or information is a Success factor	5%
5	Presence of Clear roles within relationship is a Success factor	5%
6	Presence of Commitment of members to relationship and its success is a Success factor	4%
7	Presence of Co-operative (and supportive) behaviour is a Success factor	4%
8	Presence of Involvement (including early involvement ) of people who can influence the outcome is a Success factor	4%
9	Presence of Integrated team, without inter-company boundaries is a Success factor	3%
10	Presence of Leadership (strong and proactive) from senior managers is a Success factor	3%

SL No	Success factors mentioned by not involved respondents (Number of responses = 66)	Percent of responses
1	Presence of Trusting attitude/behaviour is a Success factor	17%
2	Presence of Honesty and Sincerity is a Success factor	11%
3	Presence of Open behaviour is a Success factor	6%
4	Presence of Shared knowledge and/or information is a Success factor	6%
5	Presence of Shared and aligned goals, objectives or targets is a Success factor	5%
6	Presence of Co-operative (and supportive) behaviour is a Success factor	5%
7	Presence of Open and unhindered communication is a Success factor	5%
8	Presence of Shared responsibility (and accountability) is a Success factor	5%
9	Presence of Commitment of members to relationship and its success is a Success factor	3%
10	Presence of Integrated team, without inter-company boundaries is a Success factor	3%



### Failure factor- by job category

SL No	Failure factors mentioned by senior management (Number of responses = 88)	Present of responses
1	Absence of Trusting attitude/behaviour is a Failure factor	10%
2	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	9%
3	Presence of Culture differences which are not addressed is a Failure factor	9%
4	Absence of Open and unhindered communication is a Failure factor	7%
5	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	7%
6	Absence of Fair allocation of risks, rewards and profits is a Failure factor	7%
7	Absence of Shared and aligned goals, objectives or targets is a Failure factor	5%
8	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	3%
9	Absence of Commitment of members to relationship and its success is a Failure factor	3%
10	Presence of Reversion to old (adversarial) custom and practice is a Failure factor	3%

SL No	Failure factors mentioned by middle managers (Number of responses = 128)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	14%
2	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	8%
3	Absence of Trusting attitude/behaviour is a Failure factor	6%
4	Absence of Open and unhindered communication is a Failure factor	6%
5	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	6%
6	Presence of Culture differences which are not addressed is a Failure factor	5%
7	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	3%
8	Absence of Fair allocation of risks, rewards and profits is a Failure factor	3%
9	Absence of Commitment of management to relationship and its success is a Failure factor	3%
10	Absence of Well understood goals, objectives or targets is a Failure factor	2%



### Failure factors- by company size

SL No	Failure factors mentioned by large size companies (Number of responses = 172)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	13%
2	Presence of Culture differences which are not addressed is a Failure factor	8%
3	Absence of Trusting attitude/behaviour is a Failure factor	7%
4	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	6%
5	Absence of Open and unhindered communication is a Failure factor	6%
6	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	5%
7	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	4%
8	Absence of Fair allocation of risks, rewards and profits is a Failure factor	3%
9	Absence of Open behaviour and willingness to change is a Failure factor	3%
10	Absence of Well understood goals, objectives or targets is a Failure factor	3%

SL No	Failure factors mentioned by medium size companies (Number of responses = 53)	Percent of responses
1	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	17%
2	Absence of Trusting attitude/behaviour is a Failure factor	9%
3	Absence of Open and unhindered communication is a Failure factor	9%
4	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	6%
5	Inappropriate Shared and aligned goals, objectives or targets is a Failure factor	6%
6	Absence of Shared and aligned goals, objectives or targets is a Failure factor	4%
7	Presence of Culture differences which are not addressed is a Failure factor	4%
8	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	4%
9	Absence of Fair allocation of risks, rewards and profits is a Failure factor	4%
10	Presence of Reversion to old (adversarial) custom and practice is a Failure factor	4%

SL No	Failure factors mentioned by small size companies (Number of responses = 25)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	12%
2	Absence of Open and unhindered communication is a Failure factor	12%
3	Absence of Trusting attitude/behaviour is a Failure factor	8%
4	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	8%
5	Absence of Fair allocation of risks, rewards and profits is a Failure factor	8%
6	Presence of Sole emphasis on price or unit cost is a Failure factor	8%
7	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	4%
8	Absence of Commitment of members to relationship and its success is a Failure factor	4%
9	Absence of Clear written contract is a Failure factor	4%
10	Absence of Commitment of management to relationship and its success is a Failure factor	4%



**Failure factor- by company types**

SL No	Failure factors mentioned by contractors/suppliers (Number of responses = 158)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	10%
2	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	8%
3	Absence of Trusting attitude/behaviour is a Failure factor	8%
4	Absence of Open and unhindered communication is a Failure factor	8%
5	Presence of Culture differences which are not addressed is a Failure factor	7%
6	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	5%
7	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	4%
8	Absence of Fair allocation of risks, rewards and profits is a Failure factor	4%
9	Absence of Commitment of members to relationship and its success is a Failure factor	3%
10	Absence of Open behaviour and willingness to change is a Failure factor	3%

SL No	Failure factor mentioned by operators ( Number of responses = 65)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	15%
2	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	8%
3	Absence of Trusting attitude/behaviour is a Failure factor	8%
4	Absence of Open and unhindered communication is a Failure factor	6%
5	Presence of Culture differences which are not addressed is a Failure factor	6%
6	Inappropriate Shared and aligned goals, objectives or targets is a Failure factor	6%
7	Absence of Open behaviour and willingness to change is a Failure factor	5%
8	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	3%
9	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	3%
10	Absence of Fair allocation of risks, rewards and profits is a Failure factor	3%

SL No	Failure factor mentioned by others (Number of responses = 27)	Percent of responses
1	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	11%
2	Absence of Shared and aligned goals, objectives or targets is a Failure factor	7%
3	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	7%
4	Absence of Open and unhindered communication is a Failure factor	7%
5	Absence of Fair allocation of risks, rewards and profits is a Failure factor	7%
6	Presence of Reversion to old (adversarial) custom and practice is a Failure factor	7%
7	Absence of Trusting attitude/behaviour is a Failure factor	4%
8	Inappropriate Shared and aligned goals, objectives or targets is a Failure factor	4%
9	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	4%
10	Absence of Risk, reward or profitability shared to the satisfaction of relationship members is a Failure factor	4%



### Criteria of failure -by alliance involvement

SL No	Failure factors mentioned by involved respondents (Number of responses = 184)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	13%
2	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	12%
3	Absence of Trusting attitude/behaviour is a Failure factor	8%
4	Presence of Culture differences which are not addressed is a Failure factor	8%
5	Absence of Open and unhindered communication is a Failure factor	7%
6	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	5%
7	Absence of Fair allocation of risks, rewards and profits is a Failure factor	4%
8	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	4%
9	Absence of Open behaviour and willingness to change is a Failure factor	3%
10	Absence of Commitment of members to relationship and its success is a Failure factor	2%

SL No	Failure factors mentioned by not-involved respondents (Number of responses = 66)	Percent of responses
1	Absence of Shared and aligned goals, objectives or targets is a Failure factor	8%
2	Absence of Open and unhindered communication is a Failure factor	8%
3	Absence of Clear and/or consistent goals, objectives or targets is a Failure factor	6%
4	Absence of Trusting attitude/behaviour is a Failure factor	6%
5	Presence of Adversarial behaviour, non co-operation and/or conflict (including litigation) is a Failure factor	6%
6	Absence of Leadership (strong and proactive) from senior managers is a Failure factor	5%
7	Absence of Fair allocation of risks, rewards and profits is a Failure factor	3%
8	Absence of Commitment of members to relationship and its success is a Failure factor	3%
9	Inappropriate Shared and aligned goals, objectives or targets is a Failure factor	3%
10	Presence of Reversion to old (adversarial) custom and practice is a Failure factor	3%



## **APPENDIX 4**

### **Sample Questionnaire Used in the Second Phase Study**



Offshore Management Centre  
The Robert Gordon University  
Viewfield Road  
AB15 7AW  
25 July 2001

«Title» «First\_name» «Second\_name»  
«Job\_title»  
«Address1», «Address2»  
«Address3»

Dear «Title» «Second\_name»

### **Survey on trust in collaborative relationships**

I presume that you have heard from Mr X, JT Project Manager about a survey on trust in collaborative relationships. I attach a questionnaire along with this letter for the survey. I should be very grateful if you would complete the questionnaire and send it back to me in the replay-paid envelope. Although the questionnaire looks very long, it can be completed in less than 30 minutes because you only have to circle your answers. If you wish to add extra comments, I would be very pleased to receive them. I will ensure that your replies are kept confidential and your answers will not be identifiable in any reports which are published.

Your replies to the questionnaire will help me in my research towards my PhD degree at Robert Gordon University. I hope that the companies and people involved in the XX collaborative relationship will also benefit from the insights obtained from the analysis of the answers.

My research concerns long-term collaborative relationships between the operators and their contractors in the UK upstream oil and gas industry. Such relationships used to be called "partnering" or "alliance", but these labels are not often used now. I am focusing my research on the role of trust in long-term collaborative relationships because all writers suggest that a high level of trust between people is a critical success factor.

The questionnaire will help me to find out what you mean when you talk about trust between people and companies, to obtain your views on the effects of trust and distrust and to find out whether you think that there are high levels of trust between the people involved in the XX relationship

If you would like more information on my research please contact me on 01224 263116, email [m.haque@rgu.ac.uk](mailto:m.haque@rgu.ac.uk), or contact my supervisor, Richard Green, on 01224 263105, email [r.l.green@rgu.ac.uk](mailto:r.l.green@rgu.ac.uk).

I would like to thank you, in advance, for completing the questionnaire.

Yours sincerely

SM Mamotazul Haque  
Research student



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**The Role of Trust in Partnering and Alliancing**



This questionnaire is a part of research on alliances and partnering being conducted by the Offshore Management Centre of Robert Gordon University in Aberdeen. It would be highly appreciated if you would kindly fill in the questionnaire. All information will be kept confidential and neither any name nor company will be identified in reports of this research. Thank you for your co-operation.

1. How long have you been involved with xxx alliance?       ----- Years       ----- months

2. What type of organisation do you work for?  
Please tick

Operator	Contractor/ Supplier	Other (Please indicate)
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3. Where do you normally work? Please tick       Onshore ☐       Offshore ☐

4. What do you mean when you speak or think about trust in your working relationships?  
Please circle the number which indicates your opinion on the following statements. [1= Strongly agree (SA), 2 = Agree, 3 = Uncertain, 4 = Disagree, 5 = Strongly disagree (SD)]

		SA				
SD		1	2	3	4	5
01	I will trust someone if I believe that she or he will do what they said they would do					
02	I will trust someone if I know that he or she has limited opportunities of taking advantage on me					
03	I will trust someone if I believe that she or he has the knowledge and skill to carry out the required tasks					
04	I will trust someone if I believe that he or she thinks the same way as I do					
05	I will trust someone if I feel I can predict the way they would act					
06	If I do not know someone, I will trust him or her if I feel that the risk is low					



07	If I do not know someone, I will trust him or her if the costs of checking are high	SA 1	2	3	4	SD 5
08	I will trust someone if I feel that she or he has the same moral standards that I have	1	2	3	4	5
09	I will trust someone who has a socially acceptable profession (e.g. doctor, teacher, chartered engineer)	1	2	3	4	5
10	I will trust someone whom I believe will do whatever is needed to further the benefit of me or my company	1	2	3	4	5
11	I will trust someone who belongs to a socially recognised organisation (e.g. Institution of Mechanical Engineers, a large oil company)	1	2	3	4	5
12	I will trust someone who belongs to the same social group as I do	1	2	3	4	5
13	I will trust someone if I believe that it would be against their standards of behaviour to take advantage of me or my company	1	2	3	4	5
14	I will trust someone who is the same sex as I am	1	2	3	4	5
15	I will trust someone who is the same age as I am	1	2	3	4	5
16	I will trust someone if I feel that our contract prevents him or her from taking advantage of me or my company	1	2	3	4	5
17	I will trust someone who is known to me from previous working experiences	1	2	3	4	5
18	I will trust someone if I believe that the potential cost to him or her of breaking my trust is greater than the value he or she would gain	1	2	3	4	5

If you have any other comments about what you mean by trust please write them here

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5. What is the effect of the presence of trust in the UK oil and gas industry alliances? Please circle the number which indicates your opinion. [1= Strongly agree (SA), 2 = Agree, 3 = Uncertain, 4 = Disagree, 5 = Strongly disagree (SD)]

		SA				SD
01	High levels of trust in an alliance will reduce uncertainty regarding behaviour of the partners	1	2	3	4	5
02	High level of trust in an alliance will improve competitive advantage of the companies involved	1	2	3	4	5
03	High levels of trust in an alliance will increase the volume and scope of business of the alliance partners	1	2	3	4	5
04	High levels of trust in an alliance will reduce the costs of co-ordinating the tasks of contractors and suppliers	1	2	3	4	5
05	High levels of trust between alliance partners will reduce the fear of opportunistic (advantage-taking) behaviour	1	2	3	4	5
06	High levels of trust in an alliance will reduce business operation costs	1	2	3	4	5
07	High levels of trust in an alliance will only benefit the powerful companies in the alliance	1	2	3	4	5
08	High levels of trust in an alliance will increase vulnerability	1	2	3	4	5
09	If there is high levels of trust partners will use the information for their own benefit	1	2	3	4	5
10	High levels of trust in an alliance will improve the efficiency of alliance activities	1	2	3	4	5
11	High levels trust between alliance partners will reduce the risks of co-operation	1	2	3	4	5
12	High levels of trust between alliance partners will result in increased innovation and learning	1	2	3	4	5
13	High levels of trust between alliance partners will reduce the costs of maintaining the relationships	1	2	3	4	5
14	High levels of trust between alliance partners will allow them to depend on each other with confidence	1	2	3	4	5
15	High levels of trust will enable alliance partners to agree to share risks and rewards	1	2	3	4	5
16	High levels of trust between alliance partners will reduce or remove the need for investment in monitoring and controls	1	2	3	4	5



17	High levels of trust between alliance partners will increase the comfort in the relationships of each partner	SA	1	2	3	4	5	SD
18	High levels of trust between alliance partners will enable them to adapt to unforeseen circumstance		1	2	3	4	5	
19	High levels of trust in an alliance will enable increased co-operation between alliance partners		1	2	3	4	5	
20	High levels of trust between alliance partners will reduce the completion time of a project		1	2	3	4	5	
21	High levels of trust will enable information to flow freely between alliance partners		1	2	3	4	5	
22	High level of trust enables new work to be initiated more easily		1	2	3	4	5	
23	High level of trust in an alliance will reduce the bureaucratic barriers to getting work done		1	2	3	4	5	

If you have any other comments about the benefits of high level of trust please write them here

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6. In your opinion, what helps trust to grow in an alliance in the UK oil and gas industry?

Please circle the number which indicates your opinion: [1= Strongly agree (SA), 2 = Agree, 3 = Uncertain 4 = Disagree, 5 = Strongly disagree(SD), WO = Without opinion)]

		SA				SD	
01	Trust between alliance partners will increase if they have experience of working together	1	2	3	4	5	WO
02	Communication and information exchange will increase trust between alliance partners	1	2	3	4	5	WO
03	Trust between alliance partners will increase if there are few layers of management in the companies involved	1	2	3	4	5	WO
04	Face to face contact increases trust between alliance partners	1	2	3	4	5	WO
05	Trust between alliance partners will increase if the cultures of the organisations are similar	1	2	3	4	5	WO
06	Trust between alliance partners will increase if they identify problems early and resolve them without dispute	1	2	3	4	5	WO



07	Trust between alliance partners will increase if one partner is more powerful than the others	SA 1	2	3	SD 4	5	WO
08	Trust between alliance partners will increase if there is flexibility and willingness to adapt	1	2	3	4	5	WO
09	Trust between alliance partners will increase if they place high value on the relationship	1	2	3	4	5	WO
10	Trust between alliance partners will increase if they believe high trust groups will be more successful than the low trust groups	1	2	3	4	5	WO
11	Trust between alliance partners will increase if they provide technical assistance to each other	1	2	3	4	5	WO
12	Trust between alliance partners will increase if they have the same objectives	1	2	3	4	5	WO
13	Trust between alliance partners will increase if they communicate frequently	1	2	3	4	5	WO
14	Trust between alliance partners will increase if there is open discussion of solutions to alliance problems	1	2	3	4	5	WO
15	Trust between alliance partners will increase if they share information cautiously to avoid it being misused	1	2	3	4	5	WO
16	Trust between alliance partners will increase if they perform their jobs with professionalism and dedication	1	2	3	4	5	WO
17	Trust between alliance partners will increase if they understand each others problems at work	1	2	3	4	5	WO
18	Trust between alliance partners will increase if their actions are consistent with their words	1	2	3	4	5	WO
19	Trust between alliance partners will increase if they adhere to a set of principles which governs behaviour in the alliance	1	2	3	4	5	WO
20	Trust between people will increase if they do not mislead each other	1	2	3	4	5	WO
21	Trust between alliance partners will increase if they meet negotiated obligations	1	2	3	4	5	WO
22	Trust between alliance partners will increase if there is trust between senior managers	1	2	3	4	5	WO



23	Trust between alliance partners will increase if they do whatever is necessary to ensure the success of the alliance even if it involves tasks to which they had not agreed previously.	SA 1	2	3	4	SD 5	WO
24	Trust between alliance partners will increase if one partner does not exploit to his advantage any temporary weakness of other partners	1	2	3	4	5	WO
25	Trust between alliance partners will increase if there are systems and procedures to detect advantage taking behaviour	1	2	3	4	5	WO
26	Trust between alliance partners will increase if they do not disclose confidences and secrets outside the alliance	1	2	3	4	5	WO
27	Trust between alliance partners will increase if they have a clear mission	1	2	3	4	5	WO
28	Trust between alliance partners will increase if risks and rewards are shared fairly	1	2	3	4	5	WO
29	Trust between alliance partners will increase when they work together as a combined team	1	2	3	4	5	WO
30	Trust between alliance partners will increase if they have a written contract	1	2	3	4	5	WO
31	Trust between alliance partners will increase when the cost of breaking trust is high	1	2	3	4	5	WO
32	Trust between alliance partners will increase if decisions can be taken without reference to parent companies	1	2	3	4	5	WO
33	Trust between alliance partners will increase if they are tolerant of each others problems	1	2	3	4	5	WO
34	Trust between alliance partners will increase if they are honest during negotiation	1	2	3	4	5	WO

If you have any other opinions on how trust between alliance partners can be increased please write them here

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7. What can threaten trust in the UK oil and gas industry? Please circle the number which indicates your opinion. [1= Strongly agree (SA), 2 = Agree, 3 = Uncertain 4 = Disagree, 5 = Strongly disagree(SD), WO = Without opinion)]

- |    |   | SA |   |   |   | SD |    |
|----|---|----|---|---|---|----|----|
| 01 | Trust between alliance partners will decrease if one partner takes advantage of another                         | 1  | 2 | 3 | 4 | 5  | WO |
| 02 | Trust between alliance partners will decrease if they compete with each other                                   | 1  | 2 | 3 | 4 | 5  | WO |
| 03 | Trust between alliance partners will decrease if they have different goals                                      | 1  | 2 | 3 | 4 | 5  | WO |
| 04 | Trust between alliance partners will decrease if one partner manipulates others to gain advantage over them     | 1  | 2 | 3 | 4 | 5  | WO |
| 05 | Trust between alliance partners will decrease if there are uncertainties in the alliance                        | 1  | 2 | 3 | 4 | 5  | WO |
| 06 | Trust between alliance partners will decrease if one partner uses confidential information to his own advantage | 1  | 2 | 3 | 4 | 5  | WO |
| 07 | Trust between alliance partners will decrease if deadlines are not met  | 1  | 2 | 3 | 4 | 5  | WO |
| 08 | Trust between alliance partners will decrease if a partner is not competent to undertake the required tasks     | 1  | 2 | 3 | 4 | 5  | WO |
| 09 | Trust between alliance partners will decrease if they provide misleading information                            | 1  | 2 | 3 | 4 | 5  | WO |
| 10 | Trust between alliance partners will decrease if there is lack of communication between them                    | 1  | 2 | 3 | 4 | 5  | WO |
| 11 | Trust between alliance partners will decrease if there is distrust between senior managers                      | 1  | 2 | 3 | 4 | 5  | WO |
| 12 | Trust between alliance partners will decrease if there is uncertainty about how a task should be performed      | 1  | 2 | 3 | 4 | 5  | WO |
| 13 | Trust between alliance partners will decrease if they do not place high value on the relationship               | 1  | 2 | 3 | 4 | 5  | WO |
| 14 | Trust between alliance partners will decrease if they have different organisational cultures                    | 1  | 2 | 3 | 4 | 5  | WO |
| 15 | Trust between alliance partners will decrease if they do not negotiate fairly                                   | 1  | 2 | 3 | 4 | 5  | WO |



16	Trust between alliance partners will decrease if they try to get out of the commitments they have made	SA 1	2	3	SD 4	5	WO
17	Trust between alliance partners will decrease if there is uncertainty of roles and responsibilities	1	2	3	4	5	WO
18	Trust between alliance partners will decrease when problems are not being identified and resolved jointly	1	2	3	4	5	WO
19	Trust between alliance partners will decrease when one party withholds information which is important to the other	1	2	3	4	5	WO
20	Trust between alliance partners will decrease if a contract is breached	1	2	3	4	5	WO
21	Trust between alliance partners will decrease when they do not speak the truth	1	2	3	4	5	WO
22	Trust between alliance partners will decrease if promises are broken	1	2	3	4	5	WO
23	Trust between alliance partners will decrease if one partner uses ideas from the alliance for his own interest	1	2	3	4	5	WO
24	Trust between alliance partners will decrease when they disclose confidences and secrets to others outside the alliance	1	2	3	4	5	WO
25	Trust between alliance partners will decrease if they do not understand each other problems	1	2	3	4	5	WO
26	Trust between alliance partners will decrease if they do not meet negotiated obligations	1	2	3	4	5	WO
27	Trust between alliance partners will decrease when they accuse each other unfairly	1	2	3	4	5	WO
28	Trust between alliance partners will decrease if one partner exploits to his advantage any temporary weakness of other partners	1	2	3	4	5	WO
29	Trust between alliance partners will decrease if there are many layers of management in the parent companies	1	2	3	4	5	WO
30	Trust between alliance partners will decrease if one partner has more influence than others	1	2	3	4	5	WO







08	In the xxx alliance, the other companies have same moral standards that I do	SA	SD
		1 2 3 4 5	1 2 3 4 5
09	In the xxx alliance, the other companies will do everything they can do to the benefit of my company	1 2 3 4 5	
10	In the xxx alliance, the other companies are known to me from previous working experience	1 2 3 4 5	
11	In the xxx alliance, the potential cost of breaking trust for the other companies is higher than the short term advantage	1 2 3 4 5	
12	In the xxx alliance, it would be against the other companies' standards of behaviour to take advantage on me or my company	1 2 3 4 5	
13	In the xxx alliance the other companies would do whatever is needed to further the benefits of my company	1 2 3 4 5	
14	In the xxx alliance, the other companies would not take advantage of me or my company because it would be against the standard of behaviour which is expected in this alliance	1 2 3 4 5	

If you have any other comments about the type of trust between you and alliance partners please write them here

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9. Listed below are factors, which might indicate the level of trust present between alliance partners. Please indicate the degree to which you believe that they are present in your alliance by encircling appropriate number [1= Strongly agree (SA), 2 = Agree, 3 = Uncertain 4 = Disagree, 5 = Strongly disagree(SD), WO = Without opinion)]

		SA	SD	
		1 2 3 4 5	1 2 3 4 5	WO
01	In the xxx alliance, the alliance partners have the same objectives			
02	In the xxx alliance, the alliance partners communicate frequently	1 2 3 4 5		WO
03	In the xxx alliance, there is open discussion of solutions to alliance problems	1 2 3 4 5		WO
04	In the xxx alliance, the alliance partners share information openly	1 2 3 4 5		WO



06	In the xxx alliance, the alliance partners perform their job with professionalism and dedication	SA 1	2	3	4	SD 5	WO
07	In the xxx alliance, the alliance partners understand each others problems at work	1	2	3	4	5	WO
08	In the xxx alliance, the alliance partners' actions are consistent with their words	1	2	3	4	5	WO
09	In the xxx alliance, the alliance partners adhere to a set of principles which governs behaviour in the alliance	1	2	3	4	5	WO
10	In the xxx alliance, the alliance partners document all aspects of negotiations	1	2	3	4	5	WO
11	In the xxx alliance, the alliance partners meet negotiated obligations	1	2	3	4	5	WO
12	In the xxx alliance, there is trust between senior managers	1	2	3	4	5	WO
13	In the xxx alliance, the alliance partners are honest during negotiation	1	2	3	4	5	WO
14	In the xxx alliance, one partner does not exploit to his advantage any temporary weakness of other partners	1	2	3	4	5	WO
15	In the xxx alliance, the alliance partners do whatever is necessary to ensure the success of the alliance even if it involves tasks to which they had not agreed previously.	1	2	3	4	5	WO
16	In the xxx alliance, the alliance partners have a clear mission	1	2	3	4	5	WO
17	In the xxx alliance, the alliance partners have enough resources	1	2	3	4	5	WO
18	In the xxx alliance, risks and rewards are fairly shared	1	2	3	4	5	WO
19	In the xxx alliance, the alliance partners work together as a combined team.	1	2	3	4	5	WO
20	In the xxx alliance, the alliance partners do not try to get out of their commitments	1	2	3	4	5	WO
21	In the xxx alliance, there is no major conflict between alliance partners	1	2	3	4	5	WO
22	In the xxx alliance, problems are identified and resolved jointly	1	2	3	4	5	WO



23	In the xxx alliance, the alliance partners do not break their promises	SA	1	2	3	4	5	SD	WO
24	In the xxx alliance, the alliance partners do not disclose confidences and secrets outside the alliance	1	2	3	4	5	WO		
25	In the xxx alliance, the alliance partners have long experience of working together	1	2	3	4	5	WO		
26	In the xxx alliance, the alliance partners have face to face contact	1	2	3	4	5	WO		
27	In the xxx alliance, there is flexibility and willingness to adapt	1	2	3	4	5	WO		
28	In the xxx alliance, the alliance partners place high value on the relationship	1	2	3	4	5	WO		
29	In the xxx alliance, high trust groups get more reward than low trust groups	1	2	3	4	5	WO		
30	In the xxx alliance, the alliance partners offer technical assistance to each other	1	2	3	4	5	WO		
31	In the xxx alliance, there are systems and procedures to detect advantage taking behaviour	1	2	3	4	5	WO		
32	In the xxx alliance, the alliance partners have written contract	1	2	3	4	5	WO		
33	In the xxx alliance, the alliance partners work together without referring to their parent companies	1	2	3	4	5	WO		

If you have any other comments please write them here

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**10.** Listed below are factors which might indicate success of an alliance. Please indicate the degree to which you believe that they are present in xxx alliance by encircling appropriate number[1= Strongly agree (SA), 2 = Agree, 3 = Uncertain 4 = Disagree, 5 = Strongly disagree(SD), WO = Without opinion]

		SA						SD	
01	The xxx alliance has been successful in reducing the costs of completing tasks.	1	2	3	4	5	WO		
02	Since it joined the xxx alliance, my own company has been able to reduce its costs.	1	2	3	4	5	WO		



03	In xxx alliance projects are completed in time	SA	SD							
		1	2	3	4	5	WO			
04	In my company work volume or scope of business has increased because of forming an alliance	1	2	3	4	5	WO			
05	In xxx alliance there is satisfaction with risk reward or profitability shared among alliance partners	1	2	3	4	5	WO			
06	In xxx alliance there is satisfactory safety performance	1	2	3	4	5	WO			
07	In xxx alliance, partners share common goal	1	2	3	4	5	WO			
08	In our alliance, shared and aligned goals are achieved	1	2	3	4	5	WO			
09	In our alliance, production targets are achieved	1	2	3	4	5	WO			
10	Senior management of the involved companies is committed to the alliance	1	2	3	4	5	WO			
11	Senior management of my organisation is committed to the alliance	1	2	3	4	5	WO			

If you have any other comments please write them here

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11. What stage is the xxx alliance at present?

Starting

☐

Ongoing

☐

Terminating

☐

Please write you Job title and company name for analysis purpose

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Job Title

Company

You may wish to write your name and telephone number in case we need to contact you further

Your name

Telephone No

Thank you for your help in completing this survey. Please return the completed questionnaire in the supplied self-addressed envelope



# **APPENDIX 5**

## **Average Scores on Trust Level and Success Level in Different Alliances**



**Respondents average scores on trust levels and success level in different alliances**

Respondent Number	Collaborative Relationship	Success level (Y)	Trust Level (X)	Respondent Number	Collaborative Relationship	Success level (Y)	Trust Level (X)
1	C	3.70	4.03	52	B	4.27	3.94
2	C	3.91	3.61	53	B	3.91	3.87
3	C	2.60	2.04	54	B	2.50	3.16
4	C	2.55	2.70	55	B	4.00	4.39
5	C	2.30	2.82	56	D	2.73	2.00
6	C	3.43	3.16	57	D	3.09	3.00
7	C	3.55	3.06	58	D	3.73	3.32
8	C	2.27	2.61	59	D	3.36	3.06
9	C	3.60	3.23	60	D	3.18	3.65
10	C	3.20	2.48	61	D	4.00	3.74
11	C	3.45	3.39	62	D	2.55	2.77
12	C	3.73	3.61	63	D	4.18	3.71
13	C	3.18	3.35	64	D	3.27	3.55
14	C	2.25	3.23	65	D	3.36	3.19
15	C	4.00	4.58	66	D	3.57	3.17
16	C	2.82	2.93	67	D	3.09	3.39
17	C	2.91	2.65	68	A	3.64	3.61
18	C	2.82	2.81	69	A	3.55	3.81
19	C	3.90	3.88	70	A	4.27	3.66
20	C	3.55	3.26	71	A	3.73	4.39
21	C	1.89	3.18	72	A	3.82	3.52
22	C	2.70	2.77	73	A	3.00	3.58
23	C	3.27	3.19	74	A	3.64	3.87
24	C	2.18	2.26	75	A	3.70	3.77
25	C	4.45	4.65	76	A	4.18	4.13
26	C	3.91	3.90	77	A	3.91	3.55
27	C	2.91	2.94	78	A	3.27	3.10
28	C	3.09	3.00	79	A	4.20	3.45
29	C	3.27	3.29	80	A	4.00	3.90
30	C	3.55	3.61	81	A	3.55	3.39
31	C	4.27	3.39	82	A	4.18	4.03
32	C	2.45	3.16	83	A	3.64	3.76
33	C	3.64	3.23	84	A	4.18	4.23
34	C	2.73	3.26	85	A	4.91	4.32
35	C	3.36	3.74	87	E	3.91	3.77
36	C	2.67	2.97	88	C	3.91	3.71
37	E	2.60	3.13	89	B	4.55	4.29
38	E	3.90	3.33	90	E	2.91	2.68
39	E	3.27	2.68	91	C	3.22	2.83
40	E	3.00	3.00	92	E	2.80	3.53
41	E	3.57	3.04	93	C	3.91	3.06
42	E	3.09	3.42	94	C	3.20	3.07
44	E	3.36	3.71	95	D	3.45	3.71



45	E	2.91	3.29	96	C	2.67	3.65
46	E	3.45	3.48	97	C	2.91	2.84
47	E	3.73	3.71	98	E	3.36	3.19
48	E	3.36	2.71	99	C	4.27	4.00
49	E	3.36	3.73	100	C	3.09	2.76
50	E	4.00	3.87	101	D	3.20	3.67
51	B	4.20	4.06				