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CRITICAL INVESTIGATION OF JOINT VENTURES
BY UK CONTRACTORS WITH OTHER
EUROPEAN PARTNERS

By
MOHD. YUSSUF IZZUDIN MOHD. ALI

A Doctoral Thesis

Submitted in partial fulfilment of the requirements
for the award of

Doctor of Philosophy of the Loughborough University of
Technology

August 1994

ABSTRACT

This study investigates the interactions between the partners in the joint ventures between the UK Contractors and other European (EC) partners. The dynamics of interactions were focused at three levels of the joint ventures: Structure, Organisation and Team. The variables of the interactions at these levels were tested for their relationships with the pattern of success.

The general study of joint ventures has been concerned with the macro inter-firms relationships. However, this study is attempting to seek a pattern of success of the EC JVs from the internal micro level of the JV organisation, i.e. the partners' interactions. The pattern of success for the JVs studied was measured based on ten goals. The expectations and the outcomes of achieving these goals were used to identify the pattern of success of the JVs.

Eight cases were available as the sample size and the data were collected by structured interviews as well as by telephone. The UK Contractors' perceptions were only taken for this study. The Spearman Correlation and the non-parametric statistics were used to seek the statistical tests of the various relationships of the variables and against the pattern of high and low JV success.

The interactions of the partners at the structure and team were strongly correlated with the pattern of success. The organisation level has strong correlation with the decision-making process indicating that high problems in decision-making is associated with high success. Trust was not having statistically significant correlation with all the variables of interaction, but all cases had high level of trust. The study found strong relationships between the pattern of success of the JVs with the structuring of the interaction based on the sharing of expertise and resources as well as the leadership personality and members' characteristics of the JV teams. Further study into deeper areas of these interaction dynamics is greatly recommended.
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CHAPTER 1

INTRODUCTION
CHAPTER 1

INTRODUCTION

1.1: Introduction

The general literature on Joint Ventures is mainly concerned with strategic choice rather than JV implementation. The views are mainly concerned with the risks of involving other companies in a joint project especially for long-term commitment. The difficulty of "sharing" has caused Joint Ventures to be, in the past, an option of the last resort. It is the nature of business and the need for exploiting the opportunities in the global market that has given an awareness of the strategic choice of a Joint Venture. This could be a new trend towards further globalisation but evidence of its implementation is yet to be empirically explored.

Some observers predict that joint ventures are opportunities for the future for reasons such as heightened global competition, increased risk, ever-larger projects, and the fast pace of technological change (Anderson, 1990). Joint venturing is often considered as a risky strategic choice. The risks are concerned with the relationship between the partners. This is due to the fact that joint ventures (JVs) have more room for friction. Corning vice chairman, Van campbell (Lewis, 1990) said:
"Too much stress on contingencies and on termination provisions is a stress on the wrong elements. The essence of a joint venture is mutual trust between the parents. Too much time worrying about failure can cause failure."

It is the intention of this thesis to identify the right element in the nature of recent International Construction Joint Ventures between the UK Contractors and other European partners and the manner of implementing them successfully.

1.2: Objectives of the study

The main direction of this study is exploratory in nature. As Yin (1984) noted, exploratory research allows an investigator to examine a phenomenon and develop suggestive ideas in a flexible way. This is done when a theory is in its evolutionary stage, such as the international joint venture (IJV) theory (Parkhe, 1993a). Parkhe (1993a) suggests that in the next stage, descriptions of patterns that were suspected in the exploratory stage are developed. The final stage is the explanatory research. However, the first stage of exploratory research is recommended by Parkhe (1993a) to be in a form of a single-case study program. The overall objective of this study is to identify the states of Joint Venture activities in the industry, specifically by looking at the successful performance of JVs
between the UK Contractors with other European partners at three organisation levels, i.e. the Structure, the Organisation, and the Team. This is not done by a single case study. Several cases were available for study and their variety is useful for initial exploratory research. At the same time, patterns can also be developed as an initial explanation of the phenomena in IJV in construction. In construction, there are a variety of projects with several different features in the type, size, location and other projects' and environmental features. As far as an IJV is concerned, there should be common features in the study of the relationships within the IJV. Therefore, a study across several cases is pursued. The following questions form the context of the overall objectives of this study:

1. What is the state of construction joint ventures within the European Community?

2. How did the UK Contractors perform in joint venturing with other European partners?

3. What relationships exist among the JV structure, process and performance.

4. What are the perceptions of the UK contractors in joint venturing with other European partners?

It is crucial to understand why companies co-operate to undertake construction projects. The one-off nature, the
locations and the duration of the construction projects are the main differences which make construction less free to be adaptable to a long-term strategic option of Joint Ventures. Even if some companies in the Construction Industry are willing to pursue long-term co-operation in a JV, the mode is either based on a long-term project such as the BOOT (Build, Own, Operate and Transfer) or a standby arrangement with the partner for any relevant partnership when a relevant project is mutually secured. These are companies' strategies which will not be part of this study.

The construction JVs usually involves a contractual arrangement. A JV may be formed with corporate entity. Unless a company knows a partner very well, a contractual arrangement could be a useful step towards a JV Company. However, since this study is investigating the performance of JV projects rather than the company, the focus within the project itself is the main concern. This excludes the need to assess the wider areas of company's strategic management. The cut-off point is the JV Agreement where parties have officially agreed to work in a JV. At this stage the individual company's strategy has been brought together into an agreed co-operative form where mutual understanding between partners have been shaped towards achieving success. What transpires after the agreement will be the dynamic of interactions to manage and control the project. The variations between JVs can be anticipated from the nature of their (the partners) involvement in the Joint Venture. The interactions are the main concern in JV relationships.
The main objective of this study is, therefore, to investigate the determinants of success and failure of the EC construction JVs, specifically, between the UK Contractors and the other European partners. The analysis of the JV organisations is considered at the level of interactions of the partners at the three organisational levels: structure, organisation and team, particularly concerned with managing the JVs. This enables the relationships of the various interactional variables at the three levels to be correlated with the pattern of success of the JVs in order to understand their critical relationships toward the JV success.

1.3: Overview

Research into Joint Ventures is increasing but is mostly concerned with the manufacturing industries. The main areas of interest for most researchers are at the strategic level of the company. As such, the joint Venture is a procedure used from several alternatives in handling specific business phenomena such as access to new market, competition, government policy, or economies of scale. The company's strategy must also justify the cost/benefit analysis of a choice. The Joint Venture is a choice which benefits the partners individually and jointly. Profitability and liability have to be shared. The relationships between partners have to be harmonised. The contributions and
commitments have to be consistent. Trust, mutual understanding and respect have to be maintained and enhanced. Individual benefits have to be transformed into shared benefits. The individual parent's autonomy has to be sacrificed. The need to maximise the shared benefits has to be the cause for concern by the Joint Venture partners.

Torgersen (1969) said that an individual may or may not be free to co-operate, but if he elects to participate in the co-operative system, he must then sacrifice some of his individuality, some of his freedom. He also said that in effect, by increasing the creative economy as a whole it is possible for the co-operative system to be more generous in the "economy of exchange". Since globalisation has encouraged the organisational co-operative system, the form and method has to be operationalised in an appropriate manner.

A construction joint venture is a co-operation between two or more companies for various reasons dependent upon the need of the projects and the environments. However, it is mainly a project-driven motive of action for short-term access to new technology, knowledge and expertise, or the provision of resources, or access to a new market. There are cases of construction joint ventures which have been formed for long-term partnership but are on a project-to-project basis. The decisions to JV in the Construction Industry can also be due to the need for competitive advantage, and to secure a project through economies of scale.
In some countries, the governments require a foreign company to JV with a local partner (for technology transfer). Certainly, there are several motives leading to the formation of international JVs which may result from the needs of the projects and the environments. However, the lack of empirical evidences in the construction joint ventures motivates this study. The deficiency in the empirical-based research effort into Joint Ventures in construction may be due to the following reasons:

1) The number of joint ventures have not been sufficiently numerous to be significantly sampled for effective conclusions. Are European partners attractive to the UK Contractors? Practice in construction joint ventures seems to be orientated to other more attractive markets (e.g. Asia, South Africa & the Middle East). Analysis of demand, suggests how long a market opportunity may be expected to remain attractive and the windows of opportunity in some markets are often so short-lived that firms use joint ventures to leapfrog into these growing markets to exploit them before their luster fades (Rao & Rutenberg, 1979). Unless co-operative strategies are being forged to permit firms to phase out of an industry, demand must be attractive enough to justify a firm's investment - whether through a joint venture or by going it alone. Market attractiveness is determined, in part, by demand growth rates and by uncertainty concerning the nature of demand.
Harrigan, 1988). Harrigan also said that the more attractive the perceived reward of serving a market, the more tempting the use of co-operative strategies will be, particularly where the costs of entry seem to be high, or the payback period on investment seems to be short, for one firm to undertake alone. Generally, the EC joint ventures are relatively low compared with those set up with non-EC partners (Cecchini et al. 1988).

2) Forms of JVs vary, which further sub-divide the population into much smaller groups. The different forms of JVs have different organisational characteristics which make comparison difficult. The varied nature of the construction projects is another major drawback in obtaining consistency in the prediction of the performances of the JVs.

3) The popular trend of "Strategic Management" in research seldom provides continuous effort to bring about its practical implementation. The main concern of the contractors is with regard to implementation of the JVs. The rigorous research emphasis upon strategic issues may indicate the initial stage of empirical development in JVs.

Joint Ventures have been labelled as the most risky form of business because of the rate of failures shown by previous
performance. Schaan (1988) said that the high failure rate among joint ventures certainly confirms that managers are justified in their scepticism about this type of organisational form. Independent studies show that 70 per cent of joint ventures fail to meet their parents' expectations or are disbanded (Business Week, 21 July 1986). Schaan (1988) predicted that the proportion of joint venture failures will remain high because of inherent difficulties in this area of activity. Certainly this prediction is a pessimistic one. Though the fact could be true, it is to be expected from this empirical study that it will help to build the knowledge concerning this fact by exploring some possible patterns that could provide an insight into a better understanding of their strengths and weaknesses.

Whatever the reasons, a joint venture (that is, at least two companies pooling resources to create a new, separate organisation) is now an accepted way to organise a business. Anderson (1990) said that this acceptance raises a difficult question: how is the performance of a joint venture to be evaluated? At first glance, the answer seems clear: evaluate them just like a division of the parent. But which parent? Anderson also said that many joint ventures are not intended to fill standard business objectives (such as making profits). Instead, they are created to learn a technology, open a market, "keep a window" on an opportunity, or block a competitor. Anderson recognises that it is not easy to assess how well a venture meets
qualitative objectives such as these, but management cannot and should not ignore them by resorting to simple comparisons on one or two readily available measures such as profitability.

Empirical support provided by Chakravarthy (1986) found that traditional accounting figures, including profitability measures, are statistically not enough to distinguish 'excellent' from 'ordinary' firms. Excellent firms are also distinguished by their characteristics and methods (inputs), suggesting the need to view performance as a combination of many factors. In support of this position, a Conference Board survey of top executives finds a strong sentiment that financial measures assess only one facet of performance and that a number of other factors, many of them qualitative, must be weighed (Anderson, 1990).

The parameters of the strategies of the companies involved in JVs, particularly with regard to construction, is limited to securing projects, relationships with the partners, potential gains and the risks. A short-term strategy will obviously produce a different emphasis from the long-term strategy. For example, a staff training program does not justify a short-term undertaking but is an element of a long-term program. Learning in a short-term project is quite limited so, for a first-time partnership, it can be very difficult to adapt within the relationship. Apart from cultural differences, there are several individual and
organisational differences as well. However, this study focuses on the organisation, rather than the individual, as a unit of analysis.

The environmental selection is by virtue of a fit to external criteria, such as the market mechanism selecting identically producing firms under conditions of perfect competition. The environment selects the most fit organisations, and the individual units are relatively powerless to affect the process (Aldrich, 1979). This theory of environmental fit is not too sensitive to the Construction Industry due to the fact that construction activity is a one-off contractual arrangement rather than a permanent dependence on market forces such as the manufactured products. The statement above which states that "the environment selects the most fit organisation" is referring to the market forces which selects an organisation and this is not relevant in construction. Furthermore, a JV in construction is a new organisation created for a temporary venture rather than an organisational change.

The study of construction JVs must be focused upon the organisation because the immediate concern for success by the partners is mostly in relation to their relationship. This is the direction which this critical investigation into the JVs by the UK Contractors with other European partners is to be pursued.
The concepts of "differentiation and integration" developed by Lawrence and Lorsch (1967) are central to the "organisation and environment" perspective, and have found favour among many researchers in construction management (Winch, 1989). For Lawrence and Lorsch (1967), "differentiation" is the extent of the division of the organisation into distinctive sub-systems due to differing environmental contingencies, and "integration" is the extent of co-ordination of the various sub-systems to achieve common tasks. As Reuschemeyer (1986) emphasises these two concepts are not dichotomous, but two different dimensions - differentiation is a feature of structure, while integration is an element of process. To achieve integration, further differentiation may be required. This is exactly what has happened in construction with the emergence of project management jobs and management contracting firms (Winch, 1989). In this study these two concepts are used as the categories of structuring JVs based on the intent for the co-operative roles of the partners.

The need to JV with another company is based mainly on complementary co-operation which is differentiated by the nature of the "assets" contributed and agreed between partners to achieve common objectives. "Assets" refers to either material things, or knowledge and skills inherited by each partner. These "assets" are the influencing factor for the selection of partners besides several other factors such as the 'environment' mentioned earlier. The integration of
these complementary assets by the partners produces the synergic gains which each of the partners would not achieve by working alone. The extent of differentiation and integration in Joint Ventures is mainly concerned with the nature of the desired interaction between the partners. Winch (1989) recognised that the main element of differentiation in the construction project is between firms, not within them. Morris (1973) when referring to the nature of construction work, puts the dilemma thus: "The building process is heavily differentiated and is likely to become even more so, as technology becomes more sophisticated, yet at the same time there is an increasing need for it to become more integrated."

When the construction process itself is highly differentiated, the need for a JV to be integrated is much more demanded, especially for the situation with shared ownership. It creates the need to integrate the construction process which is inherent in any construction project plus the elements of partnership in order to maintain and enhance the relationship necessary for the JV success. So the structure of JV in this sense is aiming at a certain degree of integration to accommodate the differentiated environment of the construction tasks and different characteristics of the partners and their cultural backgrounds.

Therefore, the way to view the construction JV, particularly for this study, is to structure the JV in an integrated
manner to an extent that the tasks can be shared between the partners. The extent of the integration depends on the extent of the sharing required within the JV organisation. This has an influence upon the organisation and the team of the JV which indicates both the emerging process and the pattern of success.

Cartwright and Cooper (1989) recognised that the human or "people" factors, relating to their expertise and culture, played a significant role in the success of JVs. They suggested, in their study of JVs within the information technology (IT) industry, that cultural compatibility was to be a likely predictor of organisational success. The psychological and mental well-being of the employees were also studied as the expected consequences of the cultural compatibility. They concluded that organisational success can be measured both in financial and human terms, although, their inter-relationship is likely to be demonstrated in a longer-term study of the ventures studied. The psychological and mental well-being of its employees were likely to be detrimentally effected by any unsuccessful JV which generally had a short life cycle.

Since cultural issues are inherent features of the partners in JVs, the performance of the relationships should be able to portray the character of the relationships between the UK Contractors and other European partners in joint venturing in the Construction Industry. This is the main objective of this investigation.
1.4: Scope and Limitation

This study focuses on the Joint Ventures by the UK Contractors with other European partners particularly in the European Community (EC). The UK Contractors are defined as those companies that are originally British owned who are involved in the construction business. The European partners are companies originating from any of the EC countries who became partners in the construction joint ventures with the UK Contractors. The EC partners may be the designers, specialist contractors, or other construction-related companies.

The framework of analysis for JVs has to be developed. It is to be an accepted fact that JV success can be due to the partnership, or the project outcomes. Because one can say that a JV project was not profitable but the partnership was very satisfactory, or vice versa, this can provide an indication of negative performance. It is necessary, therefore, to measure the JV success in terms of both outcomes and these have to rely consequently on both objective and subjective data. The availability of hard data is often a problem in construction and the relevant data required for JV activities by the companies are often kept as confidential matters especially where the relationships of the partnerships are concerned. The reluctance by the participants to comment on the other's behaviour is a normal characteristic of business concerns.
Although there are 12 EC countries, the number of partners in JVs with the UK Contractors that were available for this study was very limited. Another major limitation was the collection of data from the European partners in order to gain a more complete data set. The distance and search for these partners would have been very costly indeed. Language would have been another problem. Hence, the research was carried out on one side of the partnerships, i.e. the UK Contractors only. This provided one element of consistency and also contributed to the ability to carry a wide cross-sectional study of all the appropriate JV partnerships available for investigation.

Past projects were required for this study in order to investigate the success and failure of the JVs. This gave the benefit of project completeness and a set of known final outcomes. The projects were defined as any kind of Construction work ranging from building to civil engineering work. The location of projects were not specified. The projects for this study were those specifically called "Joint Venture" and the agreement entered into by the partners was of this nature. Some JV documents were shown during interviews but none was allowed to be copied or borrowed. The reason being that JVs are considered as a specific strategic practice which not many companies carry out, and the contract conditions and other related documents are to be reserved strictly for the company's own use alone.
1.5: Organisation of the study

An overview of the literature on Joint Ventures in general is presented in Chapter 2. The purpose of this chapter is to provide an insight into the theoretical and empirical evidence of the success and failure of Joint Ventures in a wider context. The theoretical aspect of JV organisation is explored to gain understanding of the motives for JVs. The lack of literature on the success and failure of JVs was noted.

Chapter 3 reviews existing literature on organisations and management in construction, and research literature on the various aspects of JVs. Specific attention will be given to international JVs that were mainly practised within the European Community.

Chapter 4 highlights the theoretical and conceptual frameworks of this study. The main focus of the JV relationship limits the scope of the investigation to identifying the pattern of success of the cases studied by comparing performance at the levels of structure, organisation and team.

Chapter 5 describes the research approach, data collection techniques, and statistical methods used in the study. Chapter 6 presents the descriptive data of the eight cases used for the analysis of this study. The background information about the cases is given.
Chapter 7 discusses the data analysis where the various indicators of structure, organisation and team are presented together with the statistical analyses. Chapter 8 mainly provides discussion of the overall data on the pattern of success together with their analysis. The purpose of this chapter is to relate the patterns of data in an organised manner useful for drawing conclusions on the hypothesis of this study.

Chapter 9 is the final chapter which summarises the major findings based on the hypotheses, conclusions of the study together with directions for future research.
CHAPTER 2

LITERATURE REVIEW
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2.1: Introduction

The primary purpose of this chapter is to present the research literature relevant to this study. The approach taken is to present the broad foundations of organisational theories explaining the creation of organisation leading to the understanding of the formation of the temporary organisation of joint ventures in general.

Research on joint ventures can focus at two broad levels: (1) The parent company's strategic level, and (2) the JV organisational level. However, this study is concerned with the JV organisational level only. The parent company's strategic level is defined as the strategy for the decisions to JV at company level before the JV is formed. This part of the company's decisions is crucial in approaching the various undertakings which are open to the company. These options are to be selected to suit the conditions of the business environment for the company's operation.

The international business strategic research is very popular in the current trend due to the globalisation of industries. However, it is correct to argue that the field of international management is in a nascent, preparadigmatic
stage of development (Adler, 1983; Black & Mendenhall, 1990). Therefore, it is not surprising according to Parkhe (1993a) that such sub-areas as international joint ventures (IJVs) also lack a strong theoretical core or an encompassing framework that effectively integrates past research and serves as a springboard for launching future research. The organisational level is defined as the implementation stage of the JVs.

The implementation of JV is a continuity of the company's strategy. Company's strategy is often referred to as the macro level while organisation is the micro level. The objective of this chapter is to review the literature concerning the implementation of JVs with regard to the nature and the characteristics of the organisations and their performances, i.e. the micro level.)

This chapter also defines joint venture in a more practical manner, i.e. as applied to the international construction activity as well as the inherent need for co-operation. The way the JVs are to be viewed is presented to provide the direction for the analysis of JV in this study. The scenario of international JVs and EC JVs are also presented. Organisation-environment link theories are issues discussed at the parent's strategic level. These theories do not affect the managing of the JV organisations in construction because the projects are fixed products, not like any other consumer products which are vulnerable in the conditions of
their demands and supply. On the other hand, the inherent problem of project co-ordination is often being debated. This makes the task of project management essential. However, JV organisation has its unique problems due to the hybrid arrangement of the partnerships. Finally, this chapter also presented some remarks on the theories of successful international JVs.

2.2 : Definitions of Joint Ventures

The Joint Venture is one form of strategic alliance. Strategic alliance is a term favoured by Americans in describing inter-firm alliances. Inter-firm alliance is one area of interest in international business research currently having wide popularity. This is due to the globalisation of industries and the potential business opportunities available across the globe. Researchers are very keen to know why several options governing these businesses are used interchangeably. Why don't they just use one mode of transaction? Of course, the answer is simply that different business environments and situations require a different mode of transaction.

Joint ventures are an important alternative to acquisitions, mergers, licensing, franchise and other modes of contracting and internal development. These are usually referred to as the market and the hierarchy (Williamson, 1975, 1985).
Williamson proposes that firms choose how to transact according to the criterion of minimising the sum of production and transaction costs. Production costs may differ between firms due to the scale of operations, to learning, or to proprietary knowledge. Transaction costs refer to the expenses incurred for writing and enforcing contracts, for haggling over terms and contingent claims, for deviating from optimal kinds of investments in order to increase dependence on a party or to stabilise a relationship, and for administering a transaction.

A JV is adopted when firms decide to share ownership. The reason for doing that is because of the diseconomies of acquisition due to the costs of divesting or managing unrelated activities or the higher costs of internal development such as vertical or horizontal integrations. A transaction cost explanation for why market transactions are not chosen rests on potential exploitation of one party when assets are dedicated to the relationship and there is uncertainty over redress. So, market transactions could be too fraught with opportunistic risk. A JV should be a more reasonable option but it needs to be distinguished from a contract. Kogut (1988) explains the difference that lies in the uncertainty over performance which plays a fundamental role in encouraging a JV over a contract.

In construction, a contract is highly uncertain over its performance due to the multiplicity of organisational
objectives of the various sub-contracting parties involved. A JV can reduce this uncertainty provided the relationship is sustained. Explicit version of the partners' understanding must be set to provide certainty to their relationship. In construction, a JV is often based on contractual agreement. The JV relationship intends to minimise the high transaction cost of sub-contracting by converting it to shared ownership and control. Construction activity is inherently a contracting business. It has a high transaction cost, particularly in co-ordinating the various independent operational parties to the project.

A JV addresses this issue by creating a superior monitoring mechanism and alignment of incentives to reveal information, share technologies, and guarantee performance. Instrumental in achieving this alignment, are the rules of sharing costs and/or profits and the mutual investment in dedicated assets, i.e. assets which are specialised to purchases or sales from a specific firm. Thus, both parties gain or lose by the performance of the venture (Kogut, 1988). As such, the study of construction JVs will be within the scope of the relationship described above.

A definition of international JV is useful to envisage the area of this study.
An international joint venture is defined as the temporary organisation of two or more companies from different countries operating as co-operative partners in single entity for prescribed and limited purposes.

This definition is adopted from Andrews (1984) with a modified version to suit the international focus of this study. The notion of "joint control" specified by Andrews's definition is not explicitly stated in the definition given above, due to the fact that a JV is itself a shared ownership and control which is its inherent nature.

In most situations JVs are entered into without sacrificing the interests and entities of the partners' companies. The formation of a joint venture is usually the result of mutual understanding and trust between the partners. The extent of the inter-dependence that influence a JV must be so strong such that the conventional sub-contracting practice would be inappropriate. The JV relationship must adapt to the environmental and organisational characteristics of the Construction Industry. With the emphasis on the relationship between the parent companies, an integrating definition is added:

A JV is defined as a process of integrating skills and resources as demanded by the environment and the organisation.
Jordan D. Lewis (1990) said in an introduction to Strategic Alliances:

"In a strategic alliance, firms co-operate out of mutual need and share the risks to reach a common objective. Without mutual need companies may have the same objective, but each can get there on its own. If they don't share significant risks they can't expect mutual commitments. Firms will share risks only if they need each other to reach the same objective. Strategic alliances provide access to far more resources than any single firm owns or could buy. This can greatly expand its ability to create new products, reduce costs, bring in new technologies, penetrate other markets, pre-empt competitors, reach the scale needed to survive in world markets, and generate more cash to invest in core skills."

Joint ventures, as well as acquisitions and mergers, are the response of many organisations to pressures prompting structural change. Many influences now stress size, technology and so on. Today, for example, it is accepted that trading divisions are breaking down and that the world is becoming increasingly homogeneous in terms of products, tastes and culture (Lyons, 1991).

The need to understand the international JV organisations requires explanations on the structure as well as the process and operation, and the performance within the
conditions of international phenomena. The main phenomena affecting international business undertakings are concerned with competition, cultural differences, partner's selection and risks and uncertainties. An attempt by Datta (1988) to provide an analytical framework, in recognising the limitation in the studies for the influences of effective implementation of JVs, did not touch very much on the organisational issues. It is more inclined towards the macro issues of strategic management. The literature in this area is characterised mainly by these issues. Since the construction activities are more specific to particular project requirements, the construction strategic management is more focused rather than focusing on the macro market issues.

The definitions of joint ventures are often made with reference to the nature of co-operation. There are useful elements normally stressed in the JV definitions to emphasise their co-operative relations within the JV described. Different JVs have different relationships being stressed in their definitions. The elements of the definitions above will be the focus in understanding the JV relationships.

A construction Joint venture arises out of the strategic demand of two or more companies in overcoming the problem of undertaking a construction project alone. This problem may be due to several environmental and organisational
influences. Environmental influences are related to the market conditions which are concerned mainly with entry, competition, and knowledge on local working atmosphere including socio-cultural values, norms and customs. The organisational influences are related to the conditions for the creation of an organisation which are concerned mainly with its management and operation. These are also referred to as the external and internal environments of organisations. Organisations vary depending upon their external and internal environments.

The environmental and the organisational demands are basically the compromised version of the JV agreement set for implementation. Therefore, international joint venture is to incorporate the two definitions given above into one single definition. This means that an international JV is explained not only based on its structural features but also the process or operation. The linking between structure and process gives more comprehensive relations of the JV characteristics. The performance can be better understood by having such a comprehensive view of JVs.

In the theoretical explanations for the motivations for JVs, Kogut (1988) proposed that the co-operative aspects of JVs must be evaluated in the context of the competitive incentives among the partners and the competitive rivalry within the industry. Three theoretical approaches especially relevant in explaining the motivations and choice of JVs are given:
1. Transaction cost Theory (developed by Williamson, 1975, 1985) analyses JVs as an efficient solution to the hazards of economic transactions.

2. Strategic motivations consist of a catalogue of formal and qualitative models describing competitive behaviour. Strategic motivations are driven by competitive positioning and the impact of such positioning on profitability. Strategic behaviour places JVs in the context of competitive rivalry and collusive agreements to enhance market power.

3. Organisational theories - these have not been fully developed in terms of explaining the choice to JV relative to other modes of co-operation. This explanation views JVs as a means by which firms learn or seek to retain their capabilities. Thus, a JV is encouraged under two conditions: one or both firms desire to acquire the other's organisational know-how; or one firm wishes to maintain an organisational capability while benefiting from another firm's current knowledge or cost advantage. The transfer of organisational skills views JVs as a vehicle by which organisational knowledge is exchanged and imitated - though controlling and de-limiting the process can be itself a cause of instability.

This study, of course, concentrates on organisational theories which is currently under-explored. Therefore, the
third theoretical explanation of the motivations for JVs is specifically related to the aim of this study. The transfer of organisational knowledge and resources are the inherent motivation of construction JVs. The intra-firm co-ordination of the transfers are required specifically to a particular construction project which is a one-off in nature. Joint ventures are found to be more unstable in frequent intra-firm transfers of resources and potential export conflict (Franko, 1971). In another study (Stopford and Wells, 1972), JVs are found to be used less often in such situations.

2.3: Viewing International Joint Ventures

There are several ways of viewing joint ventures from the strategic viewpoint. International joint ventures are viewed based on how the need arises in cross-border alliances. The major forces that consider a JV as a strategic option are:

(1) The host government policy
(2) The competition
(3) The economic and political situations of the host country
(4) The socio-cultural differences
(5) The need of the project itself
(6) The partner(s).
(7) Risks and uncertainties
The major forces mentioned above may lead to JV option either because of just one of it or the combination of the forces. In international joint ventures, some countries like Malaysia, India or China, technology transfer from the foreign company to the local company is often required. The foreign company may be well prepared to handle the project alone but the government of the host country insist on technology transfer through a JV.

Competition is the basis of a widely researched area on JV. Winning across border is very uncertain. Few researchers have examined how the dimensions of joint venture strategies should vary under different competitive circumstances (Harrigan, 1988). In the light of this proposition, managers are advised by Harrigan that since joint ventures can be inherently unstable organisational forms, it is important to (1) select the right co-operative strategy option and (2) modify the autonomy from (and co-ordination with) sponsoring firms that ventures enjoy as their industry structures evolve.

The economic and political situations of the host country has to be stable for foreign activities in the country. This stability is the first criteria that companies should know before further actions in deciding working in a foreign country. Socio-cultural differences is unavoidable but it is something that can be overcome by the partners. Every company is unique, so there are always cultural contrasts.
between firms. Some aspects of these differences can be foreseen by comparing their environments, work values and attitudes of the workers and leaders. Another influence for a JV is the need of the project which can be in the form of resources or skills and knowledge. The selection of a partner is another crucial factor in undertaking a JV.

Other influences on JV options are considered as a matter of the individual company's decisions in line with the company's objectives such as expansion and growth or survival of the company in the foreseeable future business undertakings. The specific objective of this study is "cross-border Joint Venture" with its strategic conditions mentioned above.

The strategic thinking is presented only as a drive for implementing the JVs which is the main concern of this study. In the 1970s, Peter Drucker (1974) had observed that joint ventures were fast becoming important mechanisms for diversification and growth. His views find support in a survey which found that most of the Fortune 500 companies in the US and roughly 40 percent of the industrial companies with more than 100 million dollars in sales, engaged in one or more international joint ventures (Janger, 1980).

Datta (1988) said that there also seems to be an increasing awareness amongst businesses that, in order to achieve their corporate objectives, they need to recognise and avail of
opportunities presented by potentially attractive and under-explored international markets, often in developing countries such as India, China or Brazil.

Anderson (1990) recognised that:

"........that more joint ventures and co-operative arrangements have been announced since 1981 than in all previous years."

In another statement from Cartwright et al. (1989):

"However, although the initial relationship between joint venture partners is often considerably more co-operative than that between merger partners, or the acquirer and the acquired, such ventures also have a notoriously high failure rate, with annual dissolution rates of 10 percent for small start up business generally."

This statement seems to indicate that although a JV is more co-operative than merger and acquisition, it has the highest failure rate. Why they are co-operative in nature but with high failure rate? A co-operation is the intention and the manner that partners agree to undertake the work together in an arrangement that fit them and also the external and internal environments of the JV organisation. Performing the JV has to be in line with the requirements necessary for successful co-operation. The conditions necessary for
successful JV has to be uncovered for future research as well as to provide the industry with greater confidence in JV undertakings.

Global strategic alliances are the relatively enduring inter-firm co-operative arrangements, involving cross-border flows and linkages that utilise resources and/or governance structures from autonomous organisations headquartered in two or more countries, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm (Parkhe, 1991). Strategic alliances are increasingly perceived as strategic weapons, even for competing within a firm's core businesses, markets, and technologies (Harrigan, 1987). Indeed, strategic alliances are becoming an essential feature of companies' overall organisational structure, and competitive advantage increasingly depends not only on a company's internal capabilities, but also on the types of its alliances and the scope of its relationships with other companies.

The important question arises from Parkhe's study is: "Is it possible to promote more stable co-operation and higher alliance performance through a realignment of companies' incentives?". The incentives discussed by Parkhe are the attributes of the alliance which he refers to the "Structure" such as: pattern of payoffs, shadow of the future, and the number of players. The study by Parkhe strongly supports the hypothesis that alliance performance
is linked to alliance structure. He suggested that "up front" attention to alliance structure may help arrest the high failure rates, and improve alliance stability and performance levels. The study also supports the hypothesis that the linkage between structure and performance varies by partner nationality.

Co-ordination is regarded as an important element of co-operation. Warren et al. (1974) defines co-ordination as:

"a structure or process of concerted decision-making or action wherein the decisions or action of two or more organisations are made simultaneously in part or in whole with some deliberate degree of adjustment to each other."

He said that the major focus when co-ordination is viewed as structure is on specifying relationships between the participants; including the relative power of each, the presence of formal rules to guide efforts, and the degree to which participants lose autonomy. When co-ordination is viewed as a process, the major concern is with joint decision-making. In co-ordination, the behaviour of participant organisations is adjusted because of the influence of other organisations and the environment (Warren et al., 1974). This definition was made based on the theory of "inter-organisational relations".

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In joint venture, the inter-organisational relation is usually concerned deeply into the organisational characteristics. In joint venture, structure and process are inter-related particularly the interaction between the partners. Therefore, the co-ordination in JV is usually concerned with the desired interaction between the partners upon its structure and process.

Blau and Schoenherr (1971) provide empirical evidence that inter-dependencies lead to requirements for co-ordination within organisations. The recognition of an organisation's domain by other organisations (domain consensus) also leads to inter-dependencies. Thompson (1967) points out that the task environments of organisations are pluralistic. Task environments are the organisations, groups, and persons with which an organisation interacts directly.

This means that each organisation must relate to a number of different groups, each of which is itself involved in networks of inter-dependencies. It is noted that, as the environment becomes more complex, organisations become more specialised; and this increased specialisation leads to a greater need for increased intra-organisational co-ordination (Lawrence and Lorsch, 1969; Aiken and Hage, 1968; Aldrich, 1979; Rogers and Whetten, 1982). Generally, in viewing Joint Ventures, particularly in construction, the co-operative arrangement is based on the need for inter-dependence between partners, due to the complex nature
of the construction activities and its specialisation functions, hence, the need for co-ordination. Since the JV partners are committed in a relationship which is tied in ownership structure, the firms are actually involving in an intra-organisational co-ordination by having their representatives pooled into the JV organisation.

Therefore, in international JVs, there are several focuses available for research. This study is mainly focusing on construction JV relationships in terms of structure, organisation, team and performance particularly between the UK Contractors and other European partners. It is required to understand their co-operative arrangements and performances. The main focus is on the relationship of the JV partners and this is theoretically explored through inter-organisational relations. Before going much further into inter-organisational theories, the next section is useful in understanding the scenario of European JVs which is the arena proposed by this study.

2.4 : European Joint Ventures

The purpose of this section is to highlight the scenarios of international contracting which provides some fundamental characteristics of cross-border joint ventures, particularly between the Europeans. In the light of cross-border joint ventures in construction there is a two-way interactions to
be considered. One is when a company participates in a JV in a foreign country, and the other one is when a foreign company is participating in a JV with a local company. There is always the strange feeling in working in a foreign country, especially when it is undertaken for the first time. Everything will be strange to the foreign partner. On the other hand, the local partner is often more relaxed in that sense. The only strange thing to this partner is the behaviour and the practice of the other partner and his group. For the purpose of interactions, the foreign partner would tend to be more flexible because he is in the process of adapting himself to the new environment.

The understanding for JV is that the undertaking must be noted for mutual understanding and trust between the partners. Parkhe (1993b) found support on the hypothesis that the linkage between structure and performance varies by partner nationality. The European Community origins are not exceptional although they are in the process of uniting one another. Each nationality is a very independent entity which makes their adaptation a long process. There are some issues awaiting final agreements even when the 1992 dateline has passed.

According to Levitt (1983), technological, social, and economic developments over the last two decades have combined to create a unified world market-place in which companies must capture global-scale economies to remain
competitive. A force for globalisation is a competitive strategy sometimes called "global chess" (Porter, 1985). Porter said that the game could only be played by companies managing their operations as inter-dependent units guided by co-ordinated global strategy. Whereas the traditional multinational approach assumed that each national market was unique and independent of others, this strategy emphasised the effect of financial inter-dependence. In construction "global chess" is a difficult game to play and it involves a very large commitment to maintain long-term developments in various countries of operations.

The traditional multinational approach is a more appropriate assumption to be linked to the construction activities in a global market where each market is always unique and independent of others. Global-scale economies is widely the subject matter of the manufacturing based industries. The electronics industry is one classic example with most profound issues in this period and the periods to come due to its fast growing markets globally.

Through the 1970s, the clear trend in the consumer electronics industry, was a progressive increase in the benefits of the world scale economies, driven primarily by technical changes and reinforced by the homogenisation of customer tastes and significant decline in trade barriers (Porter, 1985). International construction is also sensitive to global-scale economies in a different approach
because different projects require different technology and different customer tastes.

The economies of scale for different construction projects is to be resolved by means of involving other companies rather than to invest in a large capital outlay while its utilisation may not be guaranteed to perpetuate. This justification is very strong in making international contracting to seek alliance with other companies and a joint venture is an increasingly favoured strategic approach.

At the European level, there is an overall positive climate towards increasing participation practices in the future (Survey made by the European Foundation for the improvement of Living and Working Conditions, 1991). The study found that in the phases of technology introduction, more than half of the managers who did not involve representatives in the past, intend to give up such practice: in the planning phase, "no involvement" was the case according to 39 per cent of managers. Only 18 per cent want to maintain this position in the future (22 to 10 per cent in the implementation phase). As to technology implementation, the non-involvement of employee representatives in the future plays a minor role (10 per cent), but information, consultation, negotiation and joint decision-making are favoured by almost equal numbers of managers with about 30 per cent favouring each option.
The flexibility within organisations as indicated by this survey in terms of participation practices within the EC, has shown a more open attitude towards participation opportunities intra-organisationally. What, then, are the nature and underlying incentives of current trends in European technological collaboration? How appropriate to these are the conventional notions of the competitive and collaborative relationship? What are the political as well as economic implications of 1992 and how might these shape and alter responses at the governmental (national or European) and corporate levels? To what extent would the achievement of a uniform single market framework truly effect intra-European market access? These are the questions raised by Shearman (1992) in her paper titled "The implications of 1992 for companies in technological collaboration".

According to Shearman (1992), the growth of national and international inter-firm agreements relating in one way or another to technology, represents a significant and novel development of the 1980s. Moreover, they involve a much wider and more flexible range of activities than is suggested by the industrial economists' definition of 'joint venture' and, within the context of Europe at least, they are increasingly seen by managers not as a device of the last resort, but as one of an increasingly widening range of available instrument through which strategic corporate policy decisions can be affected.
With regard to the conventional analysis of competition and collaboration relationship, it is seen to be increasingly inappropriate. Competitive modes of behaviour can and do exist on a variety of levels, but so too do co-operative interactions. Firms may, therefore, compete and co-operate simultaneously with other firms in the same industry.

Further, Shearman said that 1992 is as much a political and symbolic initiative as it is as an economic one. Consequently corporate activity in high technology sectors will be shaped and constrained by political as well as economic forces. Finally, in presenting the arguments, she realised the importance of differentiating between the uniformity of a single European market framework and the diversity of intra-European markets.

Europe is culturally and linguistically heterogeneous and harmonisation of language and culture are not on the agenda. Indeed, moves to create a greater general level of homogeneity across Europe on the one hand may well be tempered by nationalistic and/or regional attempts to protect and reinforce cultural identities. Consumer demands are not and will not be uniform across Europe, and intra-European collaboration may well be required to facilitate local market access.

The most commonly used term for inter-firm agreements - joint venture - is often applied with some ambiguity
(Shearman, 1992). The OECD committee on Restrictive Business Practices (1987), for example, defined joint ventures as:

"all forms of agreements through which 'the operations of two or more firms are partially, but not fully, functionally integrated in order to carry out activities in one or more areas."

For industrial economist (Shearman, 1992):

"joint ventures are operations whereby a legally independent and autonomously managed business enterprise is established by two or more parent companies to run a clearly defined set of activities in the common interest of the founding firms."

An OECD review (1988) of inter-firm co-operation found agreements on the joint production, sharing and two-way exchange of technology to be the characteristics of the 1980s. One-way transfers of technology, two-way exchanges and/or sharing and pooling of technology, along with agreements involving R&D and the production of new technology, now represent a central feature of a large proportion of agreements - either as their main objective or as a component of a more complex arrangement involving production and marketing (Shearman, 1992).
In "Making European Managers" the idea is not being addressed in quite the same narrow terms as before. There is a greater consciousness of the range of strategies open to firms - joint partnerships, licensing, acquisition, and so on (Bartlett and Ghoshal, 1989; Ohmae, 1990). A common underlying feature of this range of business strategies is the need to gather intelligence about management systems and management labour markets in other European countries (Storey, 1993).

It has been said by Ohmae (1990) that internationalising is not now really an option - it is a matter of survival. It has been widely noted that in the scramble for scarce specialist talent, the flow, from a British standpoint, is more likely to be outwards rather than inwards. The demand for international managers seems likely to continue increasing at a time when the supply is decreasing (Storey, 1993).

In management development, a study in France and Germany suggested that neither of these countries is found the Anglo-Saxon model, albeit for different reasons in each case. There is no suggestion that this makes either the French or the Germans 'worse managers' or 'less professional'. The non-universality of the Anglo-Saxon norm is attributable rather to two other considerations. First, these nation states have different configurations of institutions - educational, political, and economic - that
impinge on management. Second, they exhibit different understandings of what management 'is all about' and of the necessary qualities that managers should bring to it.

It is worth noting how much difference has surfaced from this simple line of enquiry: management development in two European countries. This result should be seen as salutary at a time when there is an increasing tendency towards rather facile 'internationalism' (Lawrence, 1993). By virtue of the previous discussions, it is worth considering the statement by Peter Drucker (1954) that describes: 'the joint venture as being the most flexible instrument for making fits out of misfits'.

Although it is both a difficult and demanding alternative to direct ownership, studies have shown that companies with high tolerance to joint ventures include those that are fairly new to foreign operations and those which have a decentralised decision-making structure (Dudley, 1990). The idea of European JVs is not suggesting a great optimism.

2.5: Organisational-Environmental Dependency:

The purpose of this section is to highlight some common attributes of the environment to the international alliance of organisations especially in joint venturing. In emphasising the process of organisational change, the views
are changing from "evolutionary approaches" that classify societies or organisations on the basis of unilinear schemes, such as those from least to most developed, to a natural or ecological model. While controlled by the environment, the process of organisational change does not necessarily mean progress to higher forms or social organisation or to better organisations.

The process of natural selection means organisations are moving towards a better fit with the environment, nothing more (Aldrich, 1979). A joint venture organisation is created as a result of the fit amongst the various environmental forces such as the socio-cultural differences, the differences of the partners' interests, attitudes, and personality, and the differences in organisational systems. Therefore, the emphasis is on a creation of organisation rather than organisational change, and the environmental and organisational fit is the process of selection and negotiation.

Cyert and March (1963) have argued that organisations seek to establish negotiated environments, and one dimension of this concept is negotiating a stable position in the environment vis-à-vis one's competitors. The theme of this creation is linked to the "organisational inter-dependence" which are of two types: Competitive and symbiotic inter-dependences. Due to unrestrained competition and the uncertainty that results from such competition, numerous cases of collusive action by organisations emerged.
Competition tends to arise in organisations that are functionally equivalent, in that they are attempting to produce similar products and services for similar markets (Pfeffer and Nowak, 1976). Hawley (1950) defined symbiosis as "mutual dependence between unlike organisations". In economics terminology, competitive inter-dependence exists on a horizontal level among like organisations, while symbiotic inter-dependence exists between organisations vertically related in the production process (Pfeffer and Nowak, 1976).

Most analyses of task environments (this is referred to as the micro level of environment which includes individuals, special-interest groups, professional organisations, and organisations other than the focal one) concentrate on organisations with which the system under analysis interacts (inter-organisational networks). The elements of the environment are identified in terms of the focal organisation's actual or potential interaction or transactions, both inputs and outputs.

It is this task environment that has been most often related, through research, to the internal structure and processes of the organisation (Ferrell, 1979). In this study, the origins of the partners make up the focal organisations. Thus, inter-organisational dependency are formed when organisations seek to improve their position and use exchange as a process to accomplish this. This exchange is the inter-dependence referred to in JVs.
There is an exchange process between any organisation and its environment. Reciprocity is established as the focal organisation reciprocates by supplying resources necessary for the survival of its environment. Because reciprocity is binding, the obligated organisation gives up some decision-making autonomy. This process of reciprocity consists of both conflict and co-operation. Environmental dependency is the degree to which a system relies on specific elements in the environment for growth and maintenance (Ferrell, 1979).

There are two major approaches to the relationship between organisations and their environments. The natural-selection and structural-contingency models are of the first type in which the environment is seen as controlling the organisation. The resource-dependency model is of the second type in which the organisation is seen as controlling its environment. As Aldrich and Pfeffer (1976) pointed out, these two models agree on the importance of the relationship between the organisation and its environment but differ on which is the predictor variable.

The natural-selection and structural-contingency models posit that environmental dimensions select those organisational dimensions that are most congruent with the environment; the resource-dependency model focuses on the decision-making process within the organisation. Unlike the selection and contingency models, the resource dependency
model portrays the organisation as active. There is no doubt that organisations attempt to gain and control relevant aspects of the environment. The resource-dependency model is the nature of JV organisation in construction implying that it is controlling its environment.

Child (1972) pointed out that decision-makers controlling organisations make choices as to the location in which their organisation functions, the clients which will be served, and the type of employees to be hired. Thus, the relationship between an organisation and its environment is defined to some extent by the decision-makers in organisations. In analysing and discussing this relationship, the influence of the environment is often over-emphasised, while the influence of the focal organisation is de-emphasised or not considered (Ferrell, 1979). Ferrell suggests that, perhaps a model recognising the reciprocal influences of both the environment and the decision-makers within the organisation more accurately, reflects this inter-dependency. The ability of the decision-maker to cope with and control the strategic contingencies of the environment should be recognised, along with the influences of the environment on the organisation.

Simply stated, the relationship between an organisation and its environment is as follows: The organisation exists in and depends on exchange with external entities.
This dependency on the environment imposes a degree of constraint on the organisation, just as the focal organisation places constraints on the elements within its environment.

It is generally assumed that organisations prefer as much autonomy of decision-making and control of the environment as possible. This autonomy of decision-making is lost when the organisation interacts with, and becomes dependent on its environment. At the base of this process is more than a simple exchange of inputs and outputs; rather, processes of co-operation and conflict accompany an organisational exchange in which there is a sharing of clients (customers), funds, and employees (Ferrell, 1979).

However, Aiken and Hage (1968) examined general joint activities—which are not the same as joint ventures—among health and welfare organisations. These authors argued that organisations are pushed into joint activities because of the need for resources, including money, skill, and manpower. In their study, Aiken and Hage took the creation of the joint program as creating inter-dependence among the organisations, and attempted to assess the consequences of this inter-dependence for internal organisational functioning. Specifically, Aiken and Hage argued that a large number of joint programs lead to less formalisation, less centralisation, and a higher rate of internal communication.
It is argued by Pfeffer and Nowak (1976) that the need for resources is only one possible cause of joint venture or joint programs. Their study differs from Aiken and Hage in that it is argued that inter-dependence causes the creation of joint ventures to manage the inter-dependence, rather than the joint ventures themselves creating the inter-organisational inter-dependence.

This study has similar argument to Pfeffer and Nowak in viewing the creation of joint ventures. As a result of the JV agreement, the partners are set to operate their roles of inter-dependence. Symbiotic inter-dependence is increasing due to the changing trend in the construction strategies towards the global market. For example, the BOOT (Build, own, operate, and transfer) concept of securing projects by large construction companies enable long-term commitment with large capital investment and requiring partnerships of unlike organisations. They complement each other, for example, a foreign contractor and a national electricity company of a host country.

While it is argued here that joint ventures are primarily organisational responses taken to cope with the two forms of inter-dependence, there are other possible explanations for joint venture activities. The most frequently cited purposes of joint participation are:
1) to spread the risks;
2) to establish joint or combined facilities for greater economy;
3) to accumulate large amounts of needed capital,
4) to undertake programs that are too expensive for individual companies to handle (Pate, 1969).

Joint ventures, then, are undertaken when there are economies of scale in operation, when capital requirements are too high for a single organisation to handle, and when there is a great deal of technological risk from the venture. Another reason for possibly undertaking a joint venture is to use the complementary strengths of the two organisations in developing a new product or service or entering a new market. Hence, this hypothesis of joint ventures being undertaken to develop new activities presents a direct alternative to the resource inter-dependence argument, as it posits an essentially independent relationship between the organisations participating in the joint venture activities.

These are the most frequently mentioned alternative hypotheses to the argument that joint ventures are undertaken to manage inter-organisational inter-dependence (Pfeffer and Nowak, 1976). The three approaches to inter-dependence: natural-selection, structural-contingency and resource-dependence are to some extent applicable to construction joint ventures.
In construction, it is more urgent at the stage of implementation of a joint venture to consider the decision-making process of the JV organisation. Therefore, in approaching the inter-organisational inter-dependence in construction JV, the hypothesis has to be argued that in managing the inter-dependence through a joint venture, the extent of the organisational performance should be reflected in the structure and process. Thus, the inter-dependence in a JV has to be viewed as an integration of partners rather than co-ordination of firms as in the normal construction process.

2.6 : Cross-Cultural Influence

In many countries, government regulation is a presence that must be satisfied before any joint venture takes effect. For instance, where the effect on "inter-state" trade and competition may be appreciable, the European Community requires a request for an exemption under Article 85(3) of the EC Treaty on the grounds that the joint venture does not have its object as or its effect on the restriction, prevention, or distortion of competition within the Common Market. Unless the new entity is of minor importance in the market context, or falls within a limited number of block exemptions, the European Community will review the case and may demand changes in the agreement to minimise anti-competitive effects (Berlew, 1984).
The purpose of this section is not to highlight the description of the cultural phenomena across border, but more importantly to seek research directions which cross-cultural influence has on international business organisations, particularly construction joint ventures.

It is anticipated that the wider the cultural differences between participants of international joint ventures, the greater is the need for balancing and stabilising the differences between the partners. The co-operative forms of joint ventures with partners of wide cultural differences could be affected since the expectations of mutuality and the initial learning stages are important in developing the relationship of the partners.

Culture is concerned with values. Values are the yardstick of the normal human interactions. It is necessary to appreciate a new relationship by understanding, comparing and reciprocating each other's values. It is because we are all different that we have so much to exchange with each other (Trompenaars, 1993). Trompenaars said that in matters of culture, as in the relationship of the sexes, the difference can be the chief source of attraction. He suggested that the ideal is to differentiate in such a way as to make integration more effective, or to decentralise activities in such a way that an even broader diversity gets coordinated by the "central nervous system" of your corporation.
In matters of cultural diversity there is always a challenge, but where this challenge is met, valuable connections result. Earlier in his book, Trompenaars stated that the more fundamental differences in culture and their effects may not be directly measurable by objective criteria, but they will certainly play a very important role in the success of an international organisation.

He also stressed that culture comes in layers, like onions. To understand it, you have to unpeel it layer by layer. On the outer layer are the products of culture, like the soaring skyscrapers of Manhattan, pillars of private power, with congested public streets between them. These are expressions of deeper values and norms in a society that are not directly visible (values such as upward mobility, "the more-the-better", status, material success). The layers of values and norms are deeper within the "onion", and are more difficult to identify. The core of the onion is usually what is taken for granted, unquestioned reality, and the implicit meanings that need to be expressed and understood before mutuality can be developed. The peeling of the onion without care and learning is bound to end up with tears before the peeling is completed.

Perlmutter and Heenan (1986) said that the most important factor in the endurance of a global alliance is chemistry. The partners must be willing to mould a common set of values, style, and culture while retaining their national
identities. They also said that cultural incompatibility can produce enormous operational difficulties. The moulding must begin with contact and interactions. Hence, the nature of contact and interaction must be understood. Bochner (1982) suggested that the dimensions of cross-cultural contact include:

(a) on whose territory the contact occurs;
(b) the time span of the interaction;
(c) its purpose;
(d) the type of involvement;
(e) the frequency of contact; and
(f) the degree of intimacy, relative status and power, numerical balance, and distinguishable characteristics of the participants.

The analysis suggests that there is a major difference regarding within-society and between-society cross-cultural contacts. It is also said that the major difference between inter- and intra-society cross-cultural contacts is related to the distinction between hosts and visitors. The social role of the visitor/stranger and its associated expectations and dispensations, is a well established finding in sociology (e.g. Schild, 1962).

There have been several major attempts to review and integrate the contact literature. An excellent early review is that of Cook and Selltiz (1955), and more recent
well-known critical summaries are by Amir (1969,1976), and Brein and David (1971). These reviews all conclude that, contrary to the popular belief, inter-group contact does not necessarily reduce inter-group tension, prejudice, hostility and discriminatory behaviour (Bochner, 1982). Indeed, at times inter-group contact may increase tension, hostility and suspicion (Bloom, 1971; Tajfel and Dawson, 1965; Mitchell, 1968). It all depends on the conditions under which the contact occurs. Research indicates that variables which tend to reduce prejudice include (Bochner, 1982):

1. Equal status of the participating persons or groups;

2. Intimate rather than casual or superficial relations;

3. Contact situations involving inter-dependent activity, inter-group co-operation, and super-ordinate goals;

4. Contact situations that are pleasant and rewarding;

5. A social climate that favours inter-group contact and harmony.

Conditions that tend to increase prejudice include:

1. Unequal status of the participants, or where the contact lowers the status of one of the groups;
2. Unpleasant, involuntary, frustrating, or tension-laden contact;

3. Situations producing competition between groups with diametrically opposed moral philosophies;

4. Social norms that promote or approve of racial inequality.

There are three models that shaped research strategies of cultural contact as reported by Bochner (1982):

(1) The Authoritarian Personality (Adorno et al., 1950) which is the psycho-analytic school, regarding prejudice largely as a venting of displaced aggression or scapegoating.

(2) The similarity-attraction paradigm, generated both by reinforcement and cognitive balance theories of inter-personal behaviour (Byrne, 1969; Heider, 1958; Newcomb, 1956) which all imply that similar people are more likely to get along than dissimilar ones. A special variant of this theory is Rokeach's belief-similarity hypothesis (Rokeach, 1960, 1961) which tries to account for inter-cultural disharmony in terms of the actual or assumed dissimilarity in the belief systems of the interacting groups. The same principle is evident in Triandis' concept of "subjective culture" (Triandis et.
al., 1972), which implies that different ethnic groups have unique, idiosyncratic ways of perceiving their social environments. When members of such groups interact, their subjective cultures may not overlap either in content or structure (i.e. differentiation), leading to the participants making faulty attributions about one another's behaviour.

(3) The third view is based on social learning principles, and regards culture as a naturally occurring and all-pervasive matrix of reinforcement schedules (Guthrie, 1975).

It is apparent that the behavioural studies of cross-cultural contact have the advantage of directly showing the likely pattern of interaction. However, one limitation of the three models is that they tend to overlook the element of a mutually influencing social system and realising this, Bochner (1981) developed a model of the contact situation that explicitly takes its social psychology into account. The central idea of the model is to regard any individual as functioning in a behaviour setting that can vary from being mono-cultural to being multi- or hetero-cultural.

The theory takes into account a wider view than regarding attitude change merely as a shift along some continuum; rather, non-trivial attitude modification inevitably
involves a re-ordering of the individuals' cognitive structures, making them in a very real sense different persons. In particular, the theory assumes that the person in contact will either undergo or resist changes in their cultural identities, in effect that they may either become or remain mono-, bi-, or multi-cultural individuals.

There are several outcomes of cultures-in-contact at group level either within the same society or to two or more societies reported by Bochner (1982). These outcomes are genocide, assimilation, segregation and integration. These outcomes, though being referred to the general society, may resemble some possible outcomes to organisations where cultural contacts between different nationalities exist. However, the outcome to organisations will not lead to violent act such as genocide.

These outcomes are normally the result of long-term interactions through some generations. Therefore, there is a need to understand the short-term inter-cultural contacts between the Europeans. This is an urgent area of research which is required to provide a deeper understanding for greater relationships in the European communities. It is widely accepted that there are great cultural differences between the European communities. Lawrence (1993) compared the personnel and management development in France and Germany against those in Britain and the USA, and found that neither of these countries (France and Germany) is the
Anglo-Saxon model. There is no suggestion that this makes either the French or the Germans "worst managers" or "less professional".

The non-universality of the Anglo-Saxon norm is attributable rather to two other considerations. First, these nation states have different configurations of institutions - educational, political, and economic - that impinge on management. Second, they exhibit different understandings of what management "is all about" and of the necessary qualities that managers should bring to it. The differences are not without exceptions to the other European countries. It is much more easier for the British to work with the Americans as far as cultures are concerned.

In joint venture organisation, integration is normally aimed for by the partners to merge into a super ordinate group in order to achieve specific targets and objectives. They maintain their cultural identities, and cultural pluralism is allowed to play its roles to enhance the dynamics of the joint venture activities. Inter-groups is the main emphasis that have been the focus of the studies mentioned above. Although the focus, in this section on cross-culture, is mainly concerning the general social interactions, the theories would be a useful guide to the focus within smaller groups in JV organisations.
The three models for cultural contact discussed earlier are useful in identifying the cross-cultural phenomena in joint ventures but the nature of the studies require in-depth psychological approaches which is beyond the scope of this study. However, an organisational approach is expected for this study and the inter-organisational relations will be reviewed next where its theoretical and empirical contributions might be useful in understanding the various behavioural outcomes of joint venture organisations including the effects of cultural differences.

2.7: Inter-organisational Relations

As a result of the globalisation of business and the complexities of organisations, theories of inter-organisational relations are becoming popular. The environment of organisations, which includes a multitude of organisations, must interact in a variety of ways with internal organisational variables. Complex organisational forms are viewed in terms of the networks of the organisation and all the multi-sub-groups such as multi-campus in university, multi-outlet distributive organisations and multi-plant industrial concerns.

The intra-organisational focus becomes more difficult in these environments due to the involvements of several organisations or sub-groups to the overall organisational
structure and performance. However, theoretical framework of inter-organisational analysis seems to be developing particularly in analysing JVs. Some recent examples are: Hagedoorn, 1993; Auster, 1992; and Parkhe, 1991, 1993).

In the last three decades, two separate but inter-related concerns among the social scientists seem to have stimulated a need to develop some understanding about inter-organisational relationships:

(1) The first is that social units are an integral part of the social system itself, and as such, the individual unit can be examined only in relation to the other units in a total system (Durkheim, 1947).

(2) The second concern is that social organisations are embedded in their environments and, accordingly, a comprehensive understanding of individual organisational functioning will require not only knowledge concerning its internal apparatus (technology, size, location, etc.), but also, and perhaps more importantly, some knowledge of the variety of energy transfers (inputs) between the organisations and their external environments (Negandhi, 1980).

Negandhi also stated that the physical and biological scientists, in their quest to understand inter-dependence and inter-connectedness among living and non-living units,
have long preceded their colleagues in the social sciences and accordingly have developed a conceptual apparatus to reflect these concerns in terms of the systems theory.

Due to this, the open-system approach in studying inter-organisations were being used. However, to understand the open-systems perspective, one needs to examine the overall systems and the general systems concepts. Inter-dependence in a Joint Venture is not happening by linking into separate networks or multi-groups but as one unit or organisation with the different entities of the partners maintained. In other words, they are not natural in terms of their occurrences. They are a very selective partnerships and their aims are mutual benefits or gains.

Therefore, inter-dependence in construction joint ventures must be viewed with unified link. The focus on relationships must be intra-organisational rather than inter-organisational. Hence, the approach of this study is similar to that of Aiken and Hage (1968) but instead of joint program this study is focusing on joint ventures.

2.8: Differentiation and Integration:

The purpose of this section is to highlight the importance of differentiation and integration to the study of joint ventures.
The definitions used by Lawrence and Lorsch (1967) are:

Differentiation is defined as the state of segmentation of the organisational systems into sub-systems, each of which tends to develop particular attributes in relation to the requirements posed by its relevant external environment.

Integration is defined as the process of achieving unity of effort among the various sub-systems in the accomplishment of the organisation's task.

The task is defined by them as a complete input-transformation-output cycle involving at least the design, production, and distribution of some goods or services.

The reflection of the open-systems environment is not appropriate to joint ventures. Once a joint venture is established, there should not be anything that can come on its way just to influence or change the programme initially agreed at the outset. Due to the legal ties between the partners, the need to enhance the partnerships until the project's completion is an utmost importance. This is a diversion from the general theory of inter-organisational relations which need to examine continuously the impact of the external environment and/or the other social units on the internal functioning of a parent organisation (Negandhi, 1980).
Integration, as an outcome of inter-organisational relationships, is required in temporary activities of the construction joint ventures. Based on the differences which are the inherent features of the partners' origins, the integration would not only concern with the co-ordination of tasks but also on these differences. Empirical research have shown that high performance is linked to specific elements of the alliance structure (Parkhe, 1993b). Therefore, is integration an ideal condition for high performance if the concept of inter-organisational relations is pursued?

It is obvious that integration is a necessary element in inter-organisational relations such as joint ventures where one needs each other. However, sometimes, differentiation is required instead of integration depending upon the circumstances. So, what pattern of differentiation and integration of the parts of an organisational system is associated with the organisation's coping effectively with a given external environment? This is the question raised by Lawrence and Lorsch (1967) in their study of the differentiation and integration in complex organisations. A similar question may be put forward to this study, but specifically associated with the partnership.
2.9 : Theories of successful JVs

Devlin and Blackley (1988) suggested that the key to success with alliances is to ensure that it is considered within a framework of strategic management. This goes for the decision to form an alliance in the first place, the choice of alliance partner and the management of the alliance once concluded. Managing a JV is the area focused by this study.

Despite the decision and the partnership which has already set in a JV, the only important thing to find out is: how did they do it?, not just why they did it? This is the level of inquiry which is lacking in JVs. This is also a difficult inquiry due to the fact that different JVs have different ways of doing it. Therefore, there is no standard means of implementing the JVs. However, as an initial inquiry, there is a need to understand the relationships and the pattern of success for the JVs between the UK Contractors and other EC partners.

In managing long-term alliances, objectives, responsibility, accountability, monitoring, controlling and adjustment are some of the main concern of management. In short-term alliances, the management may be concerned with "get the job done and off we go" attitude. However, though the trend towards short-term alliances is increasingly admired by all industries in the attempt to initiate business relationships, there is not much research towards this yet.
What is learnt in a long-term relationship may not be appropriate for the theory of the short-term relationship. Short-term relationship is carried out on the basis of one particular aim, such as an undertaking to build a particular project. On this basic need to JV, i.e. short-term relationship, there is little room to manoeuvre to enhance a relationship other than maintaining order to progress and to complete the project in time. This is the nature of contractual relationship which becomes the norm of the business. Although a relationship is defined and protected by a JV agreement, it is only on paper.

The real relationship is the actual interaction of the partners. This is what causes success or failure. If there is a JV failure, the original decision and selection of partners as well as the management of the JV can be blamed. On the other hand, those aspects would be appreciated for the success of a JV. However, a straight-forward answer for a success or failure cannot be judged by others. The partners themselves would be the true judge for their achievements. However, a general pattern of success based on certain criteria and described by the UK partners would be a useful way of understanding the general features of the JVs.

The analysis by Bleeke and Ernst (1991) found that although cross-border alliances pose many challenges, they were in fact viable vehicles for international strategy. While two-thirds of cross-border alliances run into serious
managerial or financial trouble within the first two years, many overcome their problems. Of the 49 alliances analysed, they found that 51% were successful for both partners. Only 33% resulted in failure for both partners. Their findings also include:

1. Acquisitions work well for core businesses and existing geographic areas, while alliances are more effective for edging into related businesses or new geographic markets.

2. Alliances between strong and weak companies rarely work. They do not provide the missing skills needed for growth, and they lead to mediocre performance.

3. The hallmark of successful alliances that endure is their ability to evolve beyond initial expectations and objectives. This requires autonomy for the venture and flexibility on the part of the parents.

4. Alliances with an even split of financial ownership are more likely to succeed than those in which one partner holds a majority interest. What matters is clear management control, not financial ownership.

5. More than 75% of the alliances that terminated ended with an acquisition by one of the partners.
All these findings have implications for creating and managing successful cross-border alliances. However, alliances are more wider in scope since they cover not only JVs but also other forms of alliances such as mergers and acquisitions. These findings are useful in studying the success for JVs. Of course, in construction, JVs across border are for edging into related business or new geographical markets. Being a construction company, it is always seeking construction projects (though type of projects may vary) in new geographical markets. This, according to the finding above could be effective.

The second, third and fourth findings are useful for the success of JVs. These are to be discussed from the analysis of this study. They are all concerned with the relationship of the partners. The indications for success provided by these findings are simply strong requirement for commitment by the partners such that compatibility, flexibility and shared control are sustained in their relationships. Lewis (1990) exemplified that informal understanding between partners was the key for success.

This, however, must be built from the initial stage of negotiation for the formation of the JV. The early appearance of champions between partners is crucial to the launch and eventual success of their alliance. In fact, Apple Computer alliances have failed when champions were not present. Alliance champions must be committed to project
success, able to build internal support, and willing to skirt organisational bottlenecks. Championing takes more effort with alliances than with similar internal efforts. There is always some resistance to sharing an opportunity with another firm. Further, joint program management requires more co-ordination than comparable internal activities, because two sets of hierarchies are involved, and new understandings must be developed (Lewis, 1990).

2.10: Summary

Despite the definitions of JVs provided on page 24, the main element of this study is focused on the interaction between the JV partners. From the discussion in section 2.3, the needs for inter-dependence and intra-organisational co-ordination are increasingly accepted as an important organisational relationship (refer p.35). This is true for the attitude of the European managers (refer p.40). The acceptance of joint venturing seems to be one of an increasingly widening range of available choices in corporate strategy of the European firms, but this has yet to be finally proven in practice.

In addition to the problems of heterogenous culture and language, there are also no uniform demands across Europe such that wider collaborative interactions can be expected. A tendency for JVs by the UK Contractors with only a few other European partners is most likely to be the continuing situation.
The definitions on page 42 are loosely given by the OECD but firmly provided by industrial economists as a legally independent and autonomous management of a business enterprise. This is very much the same in the emphasis of this study. Since the formation of a JV is a creation of a hybrid organisational arrangement for a specific purpose, the general theories of organisational-environmental dependency have to be reviewed to suit this purpose. The major influence is reflected in the inter-dependency between the environment and the partners in their decision-making process within the organisation. Inter-dependence between partners is enlarged from the provision of expertise and resources to the key factor of the decision-making process.

The effects of cross-cultural influences are great but more meaningful consideration is often related to the roles of the partners and their expectations and dispensations (refer p.55). The element of a mutually influential social system (refer p.58) is inevitable in a study involving cross-cultural contacts. It is expected that the attributes of the relationships between the partners would provide a deeper understanding of the JV performances.

The need to focus on intra-organisational factors is more appropriate to construction JVs. This leads to the desire to structure the JV organisation in either a differentiated or integrated manner depending upon the partners' decisions that would be best for their participation within the JV organisations. The success of the JVs in construction in
This study is focused on the partners' relationships which are concerned with the objectives of mutuality and understanding. The project has its own objectives which must be provided for and measured together with the performance of the partners' relationships for the overall JV performance.

However, no consideration is given in this study to the projects concerning their technology and other technical matters because these would not be varied when a JV is adopted in managing the project. This is further discussed in section 4.4.
CHAPTER 3

INTERNATIONAL JOINT VENTURES
IN THE CONSTRUCTION INDUSTRY
3.1: Introduction

The purpose of this chapter is to present the scenario of the international JVs in the Construction Industry. This includes the definitions, practices, problems and research undertaken in this area. The idea of JV is becoming popular in other industry but is still under-explored for the Construction Industry as far as international JV is concerned.

In the 1960s, consortia and joint ventures are never lightly to be entered into, and are always risky; requiring for their successful outcome a higher than usual level of commitment and management capability in all the parties concerned (Andrews, 1984). Today, several construction companies participate in JVs but mainly domestic rather than international.

The main purpose of domestic JVs is to gain competitive advantage as well as to give good value for money to the client particularly in overcoming the problems of co-ordination of construction activities due to the growing complexities of the construction works and building services.
(Pertwee, 1983), or to generate development programme with JV between the client (the development authority) and the contractor (Pring, 1991). Since the purpose of this study is on international construction JV, it is discussed in more detail for the rest of this chapter.

3.2: The Nature of Construction Industry

The Construction Industry supplies services to the government, business and non-business organisations as well as the individuals. The products of the industry are all kinds of buildings and other civil engineering works such as bridges and roads, etc. These products are permanent assets and are referred to as capital assets. In the civil engineering works, the products are meant for the development of the infrastructure for convenience and comfort of the public. There are also health-related works such as the drainage and sewerage and the water treatment plants. The increasing demand on the wide range of products with high technological sophistication, urge the need for increased professionalism in technological advancement as well as management of projects.

The current contracting business in construction is facing tough and challenging times ahead due to tough competition. The demand in construction is cyclical and it is rare for one construction company to undertake only one particular
type of construction though some may be specialists in a specific area of construction. When firms grow bigger they tend to diversify into range of construction types and also in various geographical regions. This includes overseas ventures.

It could be argued that because such large variations in demand lead to inefficient use of resources, a policy of demand management is required, and the governments of many countries have to do this in response to the need for macroeconomic management and commissioning of the public sector output. This makes the public sector as the largest single client of the industry in a particular country especially in developed countries which represent around 80% of the national output to around 40% in places like Central Europe and North America (Raftery, 1991).

At the beginning of the 1990s there were about 180 000 construction 'firms' operating in the UK. In total there were about 370 000 registered companies operating in the economy, in a wider sense, in fields including manufacturing, services and retailing. However, over ninety percent of the construction firms operating in the UK would be classified as 'small firms'. This structure is common to many countries. In firms of this nature it would seem much less likely that 'the firm' would have an existence entirely separate of those who own or work for it. Thus, it is more likely that the objectives of the firm would coincide with
the objectives of its owners or employees (Raftery, 1991). To consider international project undertaking would be the task for large companies which represent a smaller proportion of the registered contractors.

Construction projects undeniably face high levels of requisite integration. Morris (1973) puts the dilemma thus:

"The building process is heavily differentiated and is likely to become even more so, as technology becomes more sophisticated, yet at the same time there is an increasing need for it to become integrated".

Project management techniques have been echoed as the linkage mechanisms to achieve integration. Morris (1973) reports research to support his arguments for the utility of 'project management' and 'matrix organisation' (1983) as integrating mechanisms. His case remains unproven, however, because the cases analysed, while yielding much useful data, are not comparable in type and scale, therefore, cannot provide the basis for a controlled evaluation of alternative project management structures.

However, the discussion on the problem of integration is mainly focused on the relationships within organisations (Cleland and King, 1968). They develop a technique of specifying the task relationships between functional managers so that the integrating role of the project manager can be identified. Walker and Hughes (1986) found that, 80% of cases of differentiation between tasks, and 91% of
differentiation within tasks, includes differentiation due to the actors being part of different companies. Yet at no point did they discuss the implications of the transactions between these firms being governed by contract rather than administration for that differentiation, and the requisite process of integration (Winch, 1989).

The fragmented nature of the Construction Industry means that functional differentiation tends to take the form of differentiation between firms. This implies that the market relations between these firms introduces a qualitatively new element into the process of integration. Quite simply, the theory and practice of project management were not originally designed to handle differences between firms, only differences between functional departments within single organisations (Winch, 1989). The fact that construction projects are made up of temporary coalitions of firms must be accepted. Though the coalitions' interests may be the successful completion of the project, their longer-term interests of survival and growth as firms are divergent, if not at times, contradictory.

This is a good ground for adopting joint venture as a strategy to enhance compatibility in the participating firms' interests in short-term as well as long-term partnerships. If JV is clearly understood, it could solve at least some of the problems of integration of the parties involved in construction projects. Based on this view and to uphold the fundamental motive and advantages of adopting JV
in construction along this line, it is very important to understand JV thoroughly. As Cunningham and Hunter (1988) stated that,

"Joint ventures have recently started to become more popular in the UK among middle-sized contractors as more and more clients are looking to joint venturing as a reliable method of construction due to the lower costs and greater team approach it can produce."

They also said that JV is not only for large companies. Now smaller firms are pooling their resources in areas of little work, penetrating existing markets more effectively and seeking new pastures to develop. Clients, too, are beginning to see the advantages of joint venturing for certain jobs and are making the JV between a general contractor and a services contractor a condition of tender. The acceptance of joint venturing by the clients and contractors as stated by Cunningham and Hunter (1988), indicate the trend that JV is used to integrate the parties involved in the construction work rather than as counter measures of competition or other companies' strategies.

"Partnering" is another relationship style for contractors and clients to promote integration between the parties involved in construction work. NEDO has taken an initiative to study the American-style long-term relationships. The report entitled "Partnering: Contracting without conflict" was produced by the Construction Industry Sector Group of the National Economic Development Council, NEDO, 1991. By
The definition of "partnering" is:

"A contractual arrangement between a client and his chosen contractor which is either open ended or has a term of a given number of years rather than the duration of a specific project. During the life of the arrangement, the contractor may be responsible for a number of projects, large or small and continuing maintenance work and shut downs. The arrangements has either formal or informal mechanisms to promote co-operation between the parties."

The essence of the Report's message is that partnering creates a co-operative rather than adversarial relationship between the contractor and employer, by removing the "costly wasteful and normally adversarial practice of competitive bidding". The "antagonisms" which have come to characterise "short-term" contracting, incurring significant costs which have to be absorbed by the industry as a whole, should be replaced by a system which forges meaningful, rather than monetary, relationships between the players in the market (Lane, 1992).

The Report summarises the necessary conditions for a successful partnering arrangement as being:

- a significant long-term programme
- a careful selection of the right partner
- trust and confidence in the chosen partner
- commitment to a long-term relationship
- preparedness to adopt to each other's requirements
willingness to accept and learn from mistakes without pointing the finger of criticism at individuals.

The Report concludes and recommends that any non-contracting organisation with significant construction related requirements; engineering, construction, repair and maintenance work, should consider a partnering arrangement with a known, trusted and competent contractor. This having been said, the Report recognises that it is only the larger undertakings and public utilities who will be able to provide the necessary ongoing workload which is essential to any such arrangement. This limitation could still be supported by having other relationship arrangement such as joint venture. The fact remains that relationship for integration is still the domain of the current construction dilemma, but the question should be put forward to the industry as: why joint venturing is not well researched while there are already a large number of successful JVs?

The answer to this question can be assumed to be due to mainly on its perceived risks and uncertainties rather than anything else. If this is the case, the conditions for successful partnering listed above are amongst the conditions that can counter the risks and uncertainties often referred to in JVs. Thus, they are similar in principle and some features in JV could be more useful towards integration of the parties involved in construction work.
Having this background knowledge about the need to focus attention on relationship in project organisation, and the lack of empirical research in joint venturing in the Construction Industry, this study is taking some step towards exploring relationships in construction JVs particularly at the international level. This is often regarded as a job for a large company but it is not necessarily so.

3.3: International Construction JVs

International construction joint venture is defined as a co-operative activity of two or more companies from different countries formed to undertake a construction project to achieve common objectives. The location of the project is not specific in this definition. It could be in any part of the world including in the UK itself. Since this study is specifically investigating the relationship in joint venturing between the UK Contractors and other European partners, the discussion on this issue is given priority. However, the general scenario of international JV is contemplated.

International activity is usually undertaken by larger companies due to their capabilities and strength sufficient to handle more larger projects or to gain the confidence of foreign partners and clients. Sometimes some specialised
skills are required for the need of a specific project which might be available in a smaller specialist contractor and is accepted to handle such work. This gives an opportunity for smaller companies to participate in international activity. Size of company is not the most important criterion for involvement in an international activity but it is often considered, so that it will not affect the joint activity later on.

Another way where companies can get involved in international activities is by involving in a project locally with a foreign partner. So, viewing international activity is by emphasising on the involvement of a company with a foreign company (or companies) as partners or as part of a working team whether locally or abroad. The international construction market is becoming competitive just like other industries. The globalisation business is a growing interest of multinational companies as well as other companies which seek expansion beyond the market and capability already established locally.

The U.S. construction industry, had more than half of the revenues generated during 1980s that came from international projects (Moavenzadeh, 1987). However, the 1980s brought forth a new era in the world construction scenario - with firms from several countries becoming competitive in the international market. This situation arose due to a number of related factors, including (Construction Industry Sector

1. Lagging U.S. productivity,
2. Rising international competitiveness,
3. Deteriorating global economic conditions,
4. Falling oil prices,
5. Lack of U.S. government subsidies in acquiring international contracts,
6. Absence of innovativeness in technology/R&D,

The decline in the U.S. market share in the international market is mainly due to the growing competitiveness. New competitors are slowly and steadily increasing their market shares and in some countries the amount of work open to international firms are reducing. In around the same period of time the UK construction firms were also looking for overseas markets, particularly when the UK markets for new building work began to decline in the 1970s (Briscoe, 1988). In particular, contractors looked for market opportunities in the Middle East, where higher world oil prices had produced a sudden increase in wealth. There were other potential markets in other countries such as Africa and South East Asia.

In 1979, the overseas turnover accounted for almost 9% of total UK construction work and this declined briefly after 1979. Although there were recovery in international markets in the mid-1980s, the involvement of the UK contractors was
very little as compared to the U.S. contractors in terms of its share in overseas revenues to the total construction output of the countries. It is also reminded by Briscoe (1988) that, "despite UK membership of the European Economic Community, British contractors have not found much success in the EEC countries." The term "success" used is not specific to either in securing a project or in actually operating a project. However, since the general discussion is on competition, it can be taken to mean as the success of securing a project. Therefore, if this is the case, it indicates that there were very little international construction undertaken by the UK Contractors during 1980s. It is obvious then that the JVs with other European partners must have been very limited.

The percentage of work based on the value of contracts in Europe from the total overseas work undertaken by the British Contractors (Housing and Construction Statistics) between 1972 and 1985 indicates that the trend was reducing from 16% in 1972 to 4% in 1985. There was a slight increase in 1979 to 1981 to around 8-11% but fell to the average of 4% after that. In 1987, the percentage was about 5% and the same for 1989 (HMSO, 1989). These were all described as overseas work.

The number of construction JVs undertaken by the UK Contractors is not known but it would be very small indeed. In the European Community, the number of co-operative
agreements increased in the 1980s: only 46 JVs were recorded for 1982, but 129 JVs were created during 1989 (Gugler, 1992). These were not all construction JVs but from mixed industries. There is no specific information for construction JVs. However, Hillebrandt (1990) made a guess that only about 20 contractors probably account for over three-quarters of the work done abroad, in referring to the 1987 value of construction work by British firms overseas. It is a very small number and it would be very much smaller as far as JVs with other European partners are concerned.

There was fierce competition from the Western European countries. The degree of competition is very much more fierce than that customarily met in domestic markets. UK contractors frequently confront West European rivals, as well as those from Japan and the USA. Korean contractors have entered the Middle Eastern market, which again has served to cut back profit margins. Where ventures entail a high degree of risk, UK contractors have sometimes formed consortia with their international rivals. While this type of market behaviour serves to reduce the risk of losses, it also leads to a sharing out of the profits (Briscoe, 1988). However, the UK contractors would set a limit that they can handle the project alone, and this is around £50-£70 million as reported by Hillebrandt (1990), though it was pointed out that the risk is not necessarily proportional to the size of the job. Beyond the limit set, the company would seek to undertake the project in a joint venture with another contractor.
3.4: The Nature of Construction JVs

The desirability of going into JVs with other contractors in other countries is associated with the size of project. There are other reasons for construction JV. Taken from a contractor's remark (Hillebrandt, 1990):

"In a JV the two contracting firms have a fully integrated management and this leads to a commercial success because the basic loyalties are to the JV itself. It is interesting that contractors are quite able to compete hard one day and JV another. There are few problems of different methods of operation, which may mean that contractors' behaviour is becoming more alike."

The dangers of JV is concerned with the incompatibility between partners and the sharing of know-how which should be kept as strategic business secrets. Ofori (1991) states that joint ventures seldom result in the effective transfer of expertise, either because the foreign company is unwilling to help nurture a potential competitor, or the local counterpart is in no position to benefit from the knowledge and skills on offer. Can a JV be successful when these dangers are inevitable in JV relationship even though co-operation is being emphasised? When such a situation exist, the co-operation is not fully utilised or a JV is not fully understood. If a JV is to be understood and appreciated it should be very clear to the partners upon each others' objectives and goals. If a JV is specifically
formed for technology transfer, the objectives and the process of the transfer must be clear such that at the end of the project the partner at the receiving end is satisfied. This is important to the continuity for future relationships in JV. The idea of co-operation should be spelt out by the partners in a more open negotiation to achieve mutual understanding, trust and respect at the outset. The expectations of the partners from the JV must be understood by each other and any differences must be clarified, negotiated, compromised and finally agreed on consensus.

Some differences are difficult to compromise because those differences could be the opposite objectives of the partners. This can happen in an extreme case in JV relationships. This could only be resolved by the partners if balance can be introduced to level-off the extreme differences. The best option is by having partners with different specialised areas so that their differences can remain as they independently desired. Andrews (1984) says that,

"A consortium (which he defines as the same to joint ventures) is likely to be successful when each individual firm in it depends upon the different, preferably unique, contributions of the others."

In a JV project there are basically two main problems to deal with. That is, the project itself and the relationship between the partners. The problems relating to a project is
basically concerned with the technical and operational decisions which require input of expertise and resources. The partners complement their capabilities of handling the project and to pursue the project in the most effective manner from their combined efforts. The co-operation system is derived from the co-operation form which were agreed by the partners to provide the best possible means of integrating the relationship as well as to provide the best possible commitments and contributions to the project. It is very important to understand the integration of partners in a JV project.

When complementarity is the attraction of the partners to the JV, they could work in the project separately based on their own specialisations and skills. They co-operate in a JV to share the benefit and liability of the project through their combined strengths. The sharing of the gains derived from their shared expertise and resources would justify their relationships in the JV. This is rightly termed as "inter-dependence" in inter-organisational relationship's literature. This term is considered appropriate to understanding JV because it has a stronger relationship in terms of the need for each other rather than just capable of complementing each other.

It is the uncertainties within the construction process that cause most problems for construction project management (Winch, 1989). Winch also said that the integration in
construction projects means the integration of firms, not departments or functions, and that this implies integrating across market relationships. This is referred to the sub-contracting scenario in construction. But it makes no difference when JV relationship is considered in construction. The integration in a JV form is intended to be more closer in an inter-firm relationship.

In the manufacturing JV, where the duration is normally long-term, the co-operative form would be based on the strategy to maintain or enhance market share or diversifying into a new market or product. The partners can compete with each other even when they are partners in a JV. This can arise when the partners are co-operating on the basis of loose complementary relations where the objectives of the partners are incompatible, i.e. one partner's objective is production and the other's objective is marketing. The two partners must have the consensus on each others' roles to be able to foresee the customers' needs and to cater for them accordingly. The slack of one partner can paralyse the whole JV operation and finally the JV itself.

In construction, it is difficult to have a JV with loose complementarity because the formation of the JV is often intended to be interdependent in securing as well as operating the project together. The objectives are almost fixed which are compatible right from the beginning of the relationship until the project is completed. However, a
contractor usually puts a great effort in completing the project he is undertaking to avoid the penalty clause for delay. If the contractor abandons the job, he has to face legal pursuit for breach of contract and would lose future work. No matter how bad the situations were, the contractor has to try his best to complete the job. This would apply in any contracting business and that includes a JV project. The strong obligation to fulfil the contract requirements is the driving force of construction interactions between the various organisations involved, such as the main contractor and the sub-contractors in the normal project undertakings. The JV interaction is not exceptional.

The JV partners also have contractual obligations with the client. This leads to another feature of construction JV which is affected by the need to JV. Despite co-ordination difficulties existed in construction activities, the sub-contractors were quite happy to accept sub-contract obligations to the main contractor rather than being equally or partly liable as in JV, particularly in situations of unpredictable demand as in the 1980s (Lansley, 1987). Lansley states that,

"With the present levels of sub-contracting there are no longer opportunities for informal co-operation and mutual adjustment between main contractor and sub-contractor. Whilst project management and other new forms of sub-contracting relationships may be an appropriate form of organisation for managing such a multiplicity of specialists, issues are raised about the depth of technological/trade knowledge which such organisations have."
With so much emphasis being stressed upon the inter-firm relationships, there would be a potential JV consideration in overcoming the problems of managing these issues. The potential advantage of JV in risk sharing and employing high capability firms engaging as JV partners seem to be more beneficial to the parties undertaking the project rather than having several sub-contractors who would be more detached as far as relationships are concerned.

The JV relationship could be integrated horizontally or vertically. This means that in horizontal integration the partners are at the same level of status, i.e. they are compatible in terms of economic strength and company size. This enables the relationship to co-operate based on equality of strength and status. This is referred to as "equal structure".

The partners are not competing with each other in a construction JV but they are complementing each other and to be equally liable to make the JV a success. The vertical integration is where the partners are not compatible but they are also complementing each other with unequal liability where one partner is having to depend on the more stronger or established partner. This is referred to as "unequal structure".

The structure of JV in terms of the equity share varies depending upon the need for the partnership. However, in
most developing countries, the host government usually requires that the local partner to have a major share. When there is no government regulation, and there is a need for local partner for local knowledge, the foreign partner usually has a major control. The equal or unequal structures are usually expressed by the share agreed by the partners.

Equity and non-equity JVs are not properly defined and sometimes confusing. Hennart (1988) enlightens these with definitions such as:

"Equity JVs arise whenever two or more sponsors bring given assets to an independent legal entity and are paid for some or all of their contribution from the profits earned by the entity, or when a firm acquires partial ownership of another firm. The term 'non-equity JV' describes a wide array of contractual arrangements, such as licensing, distribution, and supply agreements, or technical assistance and management contracts."

Although in the definitions equity JV is referred to legal entity and non-equity JV is referred to contractual arrangement, in reality (for construction JV) the legal entity is seldom used due to the temporary nature of the relationship. However, equity share is used to determine ownership structure, and contractual agreement is used to bind the relationship legally. In construction, it is difficult to have a non-equity JV because what is being shared is one particular project. It has to be agreed between partners how they would share it, i.e. how much each
partner has to contribute to the JV (in terms of financial and other resources), and to share the profit and liability of the JV project. If the partners are operating separate projects, they don't need to form a JV because each has no need for another. A construction JV is formed when partnership is necessary for complementarity in undertaking a particular construction project from start until completion.

In the manufacturing industry a non-equity JV can be made possible when, for example, a JV is created by two different companies for production and marketing relationship. A partner dealing with production need someone to market his products, and vice versa. This is similar to a supplier-buyer relationship where each partner is independent from one another. Therefore, the relationship can be by having a contractual arrangement with non-equity JV.

However, the JV structure reflects the nature of the organisation created because the equality or the inequality structure is implying the level of sharing, contributions and commitments by the partners to the JV as a whole. The fact about sharing is often perceived as "difficulty" but not directly perceived as failure. Sometimes a difficult JV is more successful than a less difficult JV. The main point to be stressed in sharing is "balancing operation" used to address possible compatibility between the interacting
partners. This arises out of the perceived usefulness of another as a partner and the ability of partners to mobilise sufficient contributions and commitments to the overall success of the relationship.

In the context of power, the bases of power are the expertise and informational power (Pettigrew, 1972). Controlling relevant information has particularly been noted as a feature of interaction in inter-organisational settings (Sayles and Chandler, 1971). The research by Kochan et. al. (1975), yielded some support for the proposition that the ability to interfere with another's goal attainment is affected by the organisation's internal cohesion and clarity. They identified jurisdictional ambiguity, shared control and dispersed power within the organisation as factors that hindered external bargaining relationships which is applicable to JV relationship.

3.5 : The Success of International Construction JVs

This is a difficult subject to write not only due to lack of literature and research covering this topic, but also because of the inherent nature of construction activities which makes understanding of its success and failure as more subjective than objective. Success and failure are subjective dimensions of performance. The yardstick has to be specified. Although objective measures are certainly useful in measuring success or failure, it is often
difficult, in research of this nature, i.e. to obtain hard data such as a shared profit between the partners. It is even difficult to obtain data concerning subjective measures such as relationships between partners.

In organisation theory, measurement of performance is a highly debatable issue and it requires specification of performance before it can be measured. Standard specification is not available because there is no standard organisational criteria comparable between organisations. Different organisations have different objectives and goals, strategies, structures, organisation systems, efficiency and effectiveness. The performance of organisations depends upon multiple factors. These tend to vary in directions and magnitudes from one organisation to another.

However, comparison between JV organisations in construction can be made based on the assumption that they tend to cohere in terms of the objectives, duration, and the need and requirements of the tasks. When the relationship is bound within the contract, the partners have duties and obligations to one another in maintaining the relationship. The agreement that the partners set for themselves specified their roles and responsibilities. This structures them against the tasks of the project. The way they structure themselves vary between one JV to another depending upon the roles of the partners and the nature of integration desired. They can play different roles in the JV by being responsible
to different tasks or they can play the same roles together by having their players working in a team. The players are selected based on their skills and expertise.

In most cases, JVs in construction are based on the motivation for inter-dependence. The categories of inter-dependence in a construction JV is often based on the needs for the JV. The needs are mainly in terms of knowledge, skills and expertise, and resources such as finance and other factors of production.

In general, the organisational inter-dependence are classified by using constructs such as necessity (mandated) or voluntary (Oliver, 1990); competition or symbiotic (Pfeffer and Nowak, 1976); pattern of work flow between units within an organisation such as pooled, serial and reciprocal inter-dependence (Thompson, 1967); and transactions or exchanges between work units (McCann and Ferry, 1979). However, the minimum criteria that is required for inter-unit inter-dependence are (Victor and Blackburn, 1987):

(1) to compare the effects of different amounts of inter-dependence in organisations,

(2) to distinguish between inter-dependence and other concomitant consequences of the division of labour.
Victor and Blackburn (1987) defined the amount of inter-unit inter-dependence as the extent to which a unit's outcomes are controlled directly by, or are contingent upon the actions, of another unit. To differentiate between inter-dependence and other concomitant consequences of the division of labour, they used the inter-unit conflict as the construct. It is argued that when labour is divided, the structure of the consequent relations between units creates some potential for inter-unit conflict (Jones, 1984; Lawrence and Lorsch, 1967; Thompson, 1967).

From the inter-dependence theory given from inter-unit inter-dependence as mentioned above, there would definitely be a different approach for the case on inter-dependence theory that would be required in JV. The obvious difference is directly on the two emphasis of the necessary constructs provided by Victor and Blackburn (1987) above. Comparing the effects of the different amount of inter-dependence in the construction JV organisations, can be made possible. However, distinguishing between the inter-dependence and other concomitant consequences of the division of labour is not necessary when it is concerned with intra-organisation relationship.

The step-by-step approach to project managing international alliances to reduce the risk of failure which is suggested by Konieczny and Petrick (1994) may be a useful guide but still not being tested. They suggest that specific project
management techniques and methodologies which provide structured mechanisms to control cost, time and performance parameters can enhance the prospects for project success. This came from the idea that treating an international JV (IJV) as a project in a firm's project management system can reduce the failure rate of such enterprises (Cleland, 1990).

A project is defined as any undertaking with a defined starting point and an end point identified by specific, successfully completed objectives. Konieczny and Petrick also said that IJVs have been treated as esoteric strategies rather than projects. The trend predicted from research regarding several structural changes in IJVs can be enhanced by the application of project management models. They mentioned that the likely changes are:

1. IJVs will move away from equity-based investments to contractual linkages among partners. Skills in IJV contract management are required.

2. IJVs will experience increasingly diffuse management by parent multinational corporations (MNCs). This trend dictates a need for an IJV analytic framework and project planning skills decentralised among a wide array of partners. Such skills are imperative to reducing the investment and fixed costs associated with product and process innovation. Few firms can bear the risks of full scale production alone in today's environment of rapid obsolescence. By sharing
the associated risks among several stakeholders, the IJV becomes an ideal vehicle with which to capitalise on the limited opportunities available.

3. The trend toward shorter IJV formation life cycles will continue. Firms can no longer afford long R & D 'courtships' to reinvent the technological wheel in every country. In the 1990s, windows of opportunity will constrict, become more costly and increasingly impede market entry in a timely manner (Ajami & Khambata, 1991).

Therefore, Konieczny and Petrick suggest that to successfully implement future IJVs, project managers will require a systems planning model that incorporates a comprehensive analytic framework, a scope statement, and an incremental approach to contract processing within the project life cycle's conceptual phase. Although the model addresses the critical elements applicable to successful IJV engineering which include the project's environmental forces, formulated objectives, the responding organisational and operational design, the risk versus benefit factors and the achievable performance for each conceived IJV configuration, it remains as a framework for analysis.
In a construction project, this model is its natural life cycle. The main direction of this study is to investigate the determinants of success and failure of IJVs in construction. Therefore, the system approach attempted by Konieczny and Petrick as mentioned above, is not providing much help towards that aim because "systems thinking explains everything but predicts little" (Handy, 1993).

However, there is one important message from Konieczny and Petrick's article, that is, the trend in IJV is to be short-term, project-like and with a project management approach. In other words, other industries are treating IJV like what we do in construction. Does this mean that the project management approach, similar to what has been practised by the construction industry is being perceived by other industries as the most effective means of approaching IJV? The construction industry should appreciate this as an advantage due to its inherent natural characteristic. The project management debate of the current situation should be focused more towards this.

3.6 : Research in Construction IJVs

At present the construction IJV development in research is almost negligible, particularly as far as organisational study is concerned. However, there are increasing works on IJV focussing on general business management, specifically
covering JV activities in particular countries (mainly developing countries) which seem to be the attractive markets for construction activities at present. These were mainly concerned with legal framework, investment decisions and the general construction environment of the country.

Whilst the trend in IJV general business management is being emphasised in current research, the internal factors, i.e. within the organisation itself, is very crucial for the understanding of success and failure of IJV. This type of research is more difficult to deal with because it requires comparison across several IJV organisations. Furthermore, the variety of IJV organisations makes "manipulation and control" in this type of research very difficult.

It is necessary to provide an understanding of IJV in construction through organisation study. The inter-dependence theory could be further developed particularly for the benefit of the construction activities. This study is approaching towards this direction by viewing the relationship of the JV partners in terms of their inter-dependence in expertise and resources combined together where the amount of inter-dependence are compared between the JV cases.
3.7 : Summary

A construction JV is defined as the formation of a temporary organisation for a specific construction project to meet the needs of the project through an inter-dependence between partners in facilitating these needs and in managing and controlling the project. Hence, the partners' interactions are the core area of this study. This leads to the concern about the relationships of the partners at the structure, organisation and team levels. Other project-related issues are not covered in this study except for the measure of the success of the JVs. The framework of analysis and the variables used in this study are presented in the next chapter.
CHAPTER 4

THE ANALYTICAL FRAMEWORK
4.1 : Introduction

The study of the organisation is very wide and no theory of organisation is standard to every organisation. Charles Handy (1993) has realised that the study of people in organisations is not to do with predictive certainty - for two very good reasons:

1. The multiplicity of variables impinging on any one organisational situation is so great that data on all of them sufficient to predict the precise outcome of that multiple inter-relationship would never in practice be forthcoming.

2. What seems to be the inherent ability of the human being is to over-ride many of the influences on his behaviour.

He suggested that organisational phenomena, should be explained by the kind of contextual interpretation used by an historian. Such interpretation would allow us to predict "trends" with some degree of confidence. To add precise quantities to those trends, as in the physical sciences, would, however, be inappropriate and unrealistic. He also
suggested that we should take delight in this lack of certainty since it carries with it a guarantee of ultimate independence, and we can be comfortable with the situation that:

1. Most of the variables remain constant most of the time.

2. Most individuals do not over-ride the influencing factors most of the time.

3. Most interpretations will be valid for the future as well as the past.

4. Prediction tends to improve as the object of study turns from individuals to collection of individuals.

Several concepts are used to interpret data which people observe and many of these concepts are not part of our conscious awareness. Often they could more accurately be called beliefs, hunches or assumptions; sometimes even myths, stereotypes and superstitions. Organisation theory seeks to substitute a coherent set of conceptual frameworks for these collections of assumptions. These concepts, properly used and understood, should:

Help one to explain the Past which in turn
Helps one to understand the Present and thus
To predict the Future which leads to
More influence over the Future events and
Less disturbance from the unexpected  (Handy,1993).
The theoretical framework is important in the interpretation of organisational phenomena. The concepts are interpretative devices, not precise definitions in the tradition of the physical sciences. Many of them will, and should, accord with the intuitive assumptions and beliefs of successful managers. It is not normally aimed at a comprehensive explanation but a coherent set of concepts must be produced. This chapter is specifically aimed at explaining the concepts and constructs that would be used as the analytical framework of this study.

4.2: The concept of Organisation

Organisation is a generally accepted commonsensical conception. Nevertheless, defining a concept in analytic terms is generally a useful endeavour, if for no other reason than that it reveals hidden assumptions about what is being studied (Aldrich, 1979). He proposes the following definition: "Organisations are goal-directed, boundary-maintaining, activity systems". A definition which he suggested should highlight the social nature of organisations - they are products of, and constraints upon, social relations.

Etzioni (1964) said that Organisations are social units (or human groupings) deliberately constructed and reconstructed to seek special goals. Organisations are characterised by:
(1) divisions of labour, power and communication responsibilities, divisions which are not randomly or traditionally patterned, but deliberately planned to enhance the realisation of specific goals;

(2) the presence of one or more power centres which control the concerted efforts of the organisation and direct them toward its goals;

(3) substitution of personnel, i.e., unsatisfactory persons can be removed and others assigned to their tasks.

Scott (1964) defined organisation with some additional elements: "...organisations are defined as collectivities......that have been established for the pursuit of relatively specific objectives on a more or less continuous basis. It should be clear,......however, that organisations have distinctive features other than goal specificity and continuity. These include relatively fixed boundaries, a normative order, authority ranks, a communication system and an incentive system which enables various types of participants to work together in the pursuit of common goals."

Hall (1977) considered the previous definitions and produced this definition: "An organisation is a collectivity with a relatively identifiable boundary, a normative order, ranks of authority, communication systems and membership -
co-ordinating systems; this collectivity exists on a relatively continuous basis in an environment and engages in activities that are usually related to a goal or a set of goals.”

The definitions given by Aldrich and the others above, produced common features with the three elements given by Aldrich. This is no different from JV organisations per se but joint ventures are different in the sense that the ownership are shared between two or more parent organisations for attaining common goals. The shared ownership and control are the main distinctive features which orientates the organisation less to the needs of the environment, institution and social setting. Instead, the partners to the JV are more concerned with their own parents’ objectives because in construction those needs are useful considerations at the initial strategic planning stage. As far as the implementation of the JV is concerned, the partners are more concerned with the form of organisation that they are going to play their roles that would be best for the project as well as their relationships.

The inter-organisational theory is very much concerned with the co-operative and collaborative ventures between firms. This theory is popular among the various strategic alliances studies and this includes JVs. However, the literature is more concerned with activities other than the construction.
Due to the nature of construction activity, the theory of JV organisation must be focused on short-term or temporary nature of organisation which requires a different nature of treatment theoretically. Short-term inter-organisational relations involving contractual arrangement and project based activity would certainly require greater co-operative link and relationship between the partners. The integration between the partners in the JV organisation is more crucial and the success of the JV is to a greater extent relying on the strength of the partnership. This is the framework in which the theory of JV in this study is being conceptualised and constructed.

Organisations are systems of co-ordinated behaviour (Mitchell and Larson, 1987). They argued that organisations are indeed, behaviour. Rules, regulations, standard operating procedures and all the other things we often think about when we use the term organisation, are simply mechanisms for co-ordinating behaviour. It is the behaviour itself that is the essence of an organisation. Without people behaving there would be no organisation. Thus, rather than describing an organisation as a thing, we might more accurately describe it as a process.

An organisation is the process of people behaving in a co-ordinated fashion (Weick, 1979). Accordingly, when we speak of the organisational environment, we are in effect referring to the aggregate co-ordinated behaviour of all the
members of the organisation. Mitchell and Larson (1987) refer to the three major facets of the organisational environment as: structure, tasks and the social aspects of organisations. This is adopted to construct the framework of analysis of this study. The unit of analysis is the groups of the partners' origins.

4.3 : The Need for an Analytical Framework

For the purpose of analytical framework of joint ventures, the phenomena of the concept of joint venture must be clarified. This has to be clearly explained in order to search for the data, analysing and drawing conclusions from the analysis. However, analysis in this area has encountered real difficulties, both at the theoretical and empirical level. To some extent, this reflects complexity and variety in the phenomenon itself; JVs can adopt many forms with different degrees of parental involvement, and even definitions as to what constitute a JV are not always consistent. Nevertheless, even after allowing for such factors, there remain analytical and conceptual difficulties in the literature that have hindered further development (Kay et al., 1987). It is, therefore, necessary that the analytical framework is determined.

In the study of JVs between firms in the market economy, the analysis is geared to the understanding of the reasons for
JVs emerging strongly in certain sectors, compared with other sectors and other strategic alternatives such as merger, acquisition or licensing. In this study, it is focusing in one industrial sector, i.e. construction sector, and the emerging problem seems to focus intra-organisationally, particularly, the effectiveness of the partnership which is directed to the understanding of the relationships between partners in organisational settings. This is related to the question: how did the UK Contractors perform in joint venturing with other European partners?

The success and failure of construction projects depend on multiple factors, i.e. internal and external to the organisations. The problem of project co-ordination is a highly debatable issue in construction as a result of project's growing complexity. Complex organisation is an area of study popularly researched, but complexity is often referred to the co-ordination problem. The complexity of the construction joint venture is not so much the concern of project co-ordination, but the partners' relationships. This is very important to the overall performance of joint ventures because as the project is co-ordinated and operated by the partners, they are concerned with developing and maintaining their relationships so that the problems faced by the project can be monitored, controlled and solved together by the partners in a most effective manner. There should be as little differences as possible between the partners.

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Shared decision-making is often difficult in any joint venture. The partners must be able to appreciate this problem before establishing the joint venture, and to structure the joint venture accordingly to their satisfactions. They can avoid heavy sharing of the decision-making at the task level where they can differentiate their roles to separate major tasks based on their own specialisation or expertise. Their joint effort is normally complementary to one another. One partner needs the other. The degree of complementarity is often the cost and benefit of the degree of sharing involved. There would be no JV when there is no sharing between partners. Sharing is a most rational means of undertaking a project when a company cannot handle it alone. Less sharing arrangement between the partners would reduce conflict, but on the other hand, some joint ventures preferred to be integrated in their sharing arrangement so that they can work as a team and together they strive for success.

Why do they need to work in a team when the sharing of the decision-making can be a great problem? A JV could be an interesting organisation to work in if it is for permanent and more innovative in the nature of the work. But construction joint venture is short-term, has high risk, and with obligations to complete on time and at the quality specified. These don't guarantee that the partners can be compatible or the co-operation and trust between one another can be sustained. So why integrate? This leads to the
thinking that a JV should have a lead partner so that one partner is more dominant than the other and this allows one to control the other. This is achieved through inequality in equity structure. This approach has proved to be less successful than the equality structure JVs. There is a need to understand the conditions for success and failure of the equality and inequality JVs. So, what condition is more appropriate to the success of the international construction JV?

4.4 : The JV dimensions

When a construction JV organisation is considered, it reflects the need to uncover the various internal and external influences. There would be two major levels of influences affecting success and failure, i.e. the JV phenomena and the project phenomena. The determinants of success and failure can be the outcomes of either the relationship of the partners or the project itself. This is a difficult part of the analysis because both are very closely linked and one affects the other. Therefore, it is very crucial to define the category to an extent that they become easily recognisable and distinctive for analysis purposes. The aim is to clarify the phenomena which is required to be studied so that clarity and thoroughness can be achieved.
This study is to focus on the relationship of the partners in the JV and their effects on the level of success achieved. Therefore, the variables to be used should be able to indicate the dimensions of partners' relationships. Table 4.1 indicates the project and partnership dimensions and objectives of JVs in construction.

Table 4.1: The Dimensions and Objectives of Construction Joint Ventures

<table>
<thead>
<tr>
<th>The Dimensions</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
<td>Co-operation</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>Inter-dependence</td>
</tr>
<tr>
<td>Schedule</td>
<td>Complementarity</td>
</tr>
<tr>
<td>Quality</td>
<td>Sharing</td>
</tr>
<tr>
<td>Cost-control</td>
<td>Mutuality</td>
</tr>
<tr>
<td>Co-ordination</td>
<td>Trust</td>
</tr>
</tbody>
</table>

The dimensions of JV are the project and the partnership. Each dimension has its specific objectives as shown in table 4.1. The distinctive features of these dimensions is that the project objectives are mostly observable (sometimes called overt) variables and the relationship dimension may be non-observable (latent or intervening) variables such as mutuality and trust. Although other relationship objectives such co-operation, inter-dependence, complementarity and sharing may be overt variables, the interactions to achieve these objectives may be considered as latent or intervening.
variables. According to Lehman (1991), observable variables can be measured and manipulated and intervening variables are employed in theory, often as explanatory concepts or mechanisms that connect two observable variables. Therefore, the objectives of relationship, co-operation, inter-dependence, complementarity and sharing can be made clear between the partners and they become overt variables which can be measured and manipulated. They form the structure of the JV.

Success is another important variable for this study. Success is measured based on goals and their attainments. Although these were measured subjectively through the perceptions of the participants, they were actually observed by the participants. However, the perceptions on the interactions between the partners were also observed but they were latent behaviours which cannot be manipulated in research. However, all subjective measures based on the perceptions of the participants are not capable of being manipulated for research purposes.

These objectives are most common in the literature as far as success is concerned. The overall success of construction JVs are the achievement of these dimensions and all the objectives. However, this study is mainly focused on the JV between the UK Contractors and other European partners. The perceptions of the UK Contractors on this relationship is to be sought. Therefore, interaction of the partners is
emphasised. The partnership dimension and how it affects the JV success, is to be the main focus in this study. By having this dimension as the main focus of the study, it is easier to make comparison with the general theories such that the variables will be focused within the same phenomena, i.e. the interaction of the partners. This clarification is important to highlight the focus of this study.

The JV relationship is to be analysed based on the question of why? and How?. The why? is the structural dimension of the JV relationship, whereas the how? is the dimensions of the JV operation. The JV operation can be viewed from the organisation and team. It is necessary to understand the success of the JVs from the structure, organisation and team levels. The explanations of the success phenomenon of JVs at these three levels, can be made to indicate how they were linked to one another to achieve the level of success. This is illustrated as an analytical scheme shown in figure 4.1.

Figure 4.1: The Analytical scheme of JV relationships

Structure ==> Organisation ==> Team ===> Success ?
The interaction of the partners at the organisation and team levels can be observed, but for structure, it is either explicit or implicit. The explicit structure is the documented agreements while the implicit agreement is often regarded as mutual understanding and trust which is very subjective. Since these are both important to the relationship of the partners the inquiry of the phenomena of JV relationships have to include both. The participants' observations are required to explain these phenomena which is based on subjective measures of the relevant variables to be described later in this chapter.

4.5 : Indications of Success and Failure

This study is aiming at understanding the determinants of success and failure of JVs between the UK Contractors with other European partners. Success and failure are the critical issues about the JVs to be studied. The concepts of success and failure are the dimensions performance. To be able to understand the performance of the JVs it is expected that the lack of one could lead to the other. It is just like saying, when there is no success, there is failure or vice versa.

These are dichotomous conditions which cannot exist on the same continuum. People have different views of what constitutes success and failure; success to one may be
failure to another. And what about mitigating circumstances, factors beyond our control, such as the global economy, political environments, and waves of social change, or just bad luck? What was successful under one set of conditions may not have proven so given others (Gilbreath, 1986).

Success and failure are multidimensional measurements, not linear functions beginning at zero and ending with 100% (Absolute perfection). The variables by which success and failure can be measured are neither objectively defined nor independent. When we speak of a project as exceeding its budget we could be pronouncing it a cost control failure. The exceeded budget, however, may have been poorly contrived, erroneously calculated and totally unrepresentative of the work to be performed. Rather than a breach in cost control, this "failure" may be one of poor budgeting. Alternatively, given an excellent budget and careful, disciplined cost control efforts the budget may still be exceeded due to schedule delays or technical errors, which almost always have negative cost ramifications. Rather than a cost control failure, we may be merely witnessing a cost manifestation of a technical failure. These three primary project performance factors (Cost, Schedule, and Technical) as described by Gilbreath (1986) are so highly interrelated and interdependent that any changes in one will almost certainly cause (or have been caused by) changes in the others. Failure is contagious. As a result Gilbreath defines failure as "Unmet expectations"
because people perceive failure when their expectations are not met, when actual accomplishment falls short, for some reason, of expected or planned accomplishment. Since failure is the main area studied by Gilbreath in the construction projects, success is very little mentioned.

However, being dichotomous variables we can view success as the reverse of failure. Success is, therefore, defined as having results "much better than expected". This is in line with the definition given by Ashley (1987) which states that success is construed as results much better than expected or normally observed in terms of cost, schedule, quality, safety, and participant satisfaction. Since failure cases of JVs were difficult to find and so painful for one to tell to others, this study will be using only success to describe the cases of the JV experiences. There will be the degree of success ranging from very low to very high on a continuum of scale rating of success.

For the purpose of this study a JV project can be defined as possessing the following characteristics:

1. A defined beginning and end (specified time to completion)
2. A specific, pre-ordained goal or set of goals (performance expectations)
3. A series of complex or inter-related activities
4. A limited budget
5. Shared ownership and control
The characteristics number 1-4 above are adopted from project's characteristics provided by Pinto and Slevin (1988). The JV characteristic is added as characteristic number 5, i.e. shared ownership and control. Therefore, the goals for a JV project should consider these characteristics in achieving success. Since the relationship between the partners is very critical to the overall performance of JV, it has to be considered as an important success factor.

The expectations anticipated from this study will be on several variables which describes the potential goals of a JV. These potential expectations, to be derived from the formation and implementation of the JV, would be broadly classified as two bases such as the project goals and relationship goals. The common goals expected to be achieved in construction JV projects are as shown below:

Table 4.2: The JV Goals

<table>
<thead>
<tr>
<th>PROJECT GOALS</th>
<th>RELATIONSHIP GOALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete on time and within budget</td>
<td>Build partnership</td>
</tr>
<tr>
<td>Quality of work</td>
<td>IntegratedCulture and Practice</td>
</tr>
<tr>
<td>Technology Transfer</td>
<td>Develop Teamwork</td>
</tr>
</tbody>
</table>

**JV GOALS**
- Return on Investment
- Maximising Profit
- Satisfactory Profit
- Effective Management


There are ten goals that are important to the project, to the JV relationships and to the JV as a whole. These are separately shown as in table 4.2 to indicate the group of goals they are greatly needed to serve. These are all important to the overall success of JVs in construction. These goals are defined as follows:

**Complete on Time and Within budget:**
The construction project is to be undertaken in specified time for completion and within the client's budget. Delay in completion is not only a bad image to the contractor but may be liable for the penalty clause. These are project success criteria normally used (Pinto and Slevin, 1988; Sanvido et al., 1992).

**Satisfactory Profit:**
This is defined as the level of profit to be earn at the lowest level that would satisfy the JV partners. This is the positive gain after deducting all costs sufficient to attract the partners to the JV. This becomes the guide for achieving success in the least possible level of earning.

**Maximising profit:**
This is the highest level of earning that the partners must strive for in undertaking the project. In considering a success, one may wish to achieve the maximum profit as possible. If a satisfactory profit is achieved, the effort in trying to achieve the maximum level of profit may not be successful.
Return on Investment:
This is also referred to as rate of return. It is the profit shown as a percentage of money invested. This is used to measure the efficiency of a business as a whole. This is usually measured using objective measures but subjective measure is used instead since the perceptions of the participants were used.

Quality of Work:
This is another success factor normally used in measuring construction performance. The quality of work is the image to the contractor that is necessary for securing future works. It is not just the quality of the workmanship but also the quality of management and human relations. The competitive environment faced by the contractors would make this as a goal that one cannot afford to neglect.

Build Partnership:
The JV relationship is the main concern for success. The idea of partnership is to aim for future relationship. This has been proven as an important criterion for the performance of strategic alliances (Parkhe, 1993b).

Technology Transfer:
This is defined as the transfer of knowledge in some form based on the technology of the construction from a partner (representing one parent company) to another partner (representing another parent company). International
construction companies are a recognised medium for the transfer of technology on overseas contracts in developing countries (Carrillo, 1994). This may also apply to any country as long as the JV is considered as an inter-dependence, thereby encourage learning from one another.

Integrated culture and practice:
The problem faced by the JV partners in adopting system of work is often centred in integrating their differences in practices and cultures. Lewis (1990) said "Get the best from each firm" by careful planning and building mutual understandings about their goals, each other, and the path they would follow before the die was cast. Effective integration removes obstacles between people.

Develop Teamwork:
Teamwork is defined as the combined effort of the partners characterised by their strong personalities, possess highly developed specialised skills, and commit themselves to a variety of personal and organisational objectives that they hope to achieve through their activity (Quick, 1992). Teamwork is an ingredient of success (Margerison and McCann, 1990).

Effective Management:
Managing a JV project by shared ownership and control is difficult unless the partners are strong in vision for
successful partnership. The shared management commitment must be effective because the overall performance relies on the effective management brought about by the partners through their strengths and weaknesses.

Project goals are specifically identified as completion of project and within the client's budget, and to achieve quality of work to impress the standard of service that can be provided. Technology transfer is sometimes a specific objective required for a JV from one partner due to government requirement or the client. However, in a JV where the partners interact actively together, they would to some extent, learnt the technology from one another. This is part of the achievement in JV. Hence, the degree of technology transfer achieved would indicate the level of success achieved. These are always being used in the measure of construction performance apart from financial gains.

The financial gains such as return on investment, maximising profit and satisfactory profit are listed under the goals for both the project and the JV relationship because the partnership is also concerned with financial returns and gains which are normally assigned to the goals of a project. Effective management is an important goal to both the project and the JV relationship. The success of the project is highly dependent upon effective management. The JV is concerned with shared management. It is to be adapted to the best approach after taking account of the differences.
between the customs and practices of the partners. The management performance is expected to be effective and because of the sharing involved it becomes a goal which should not be ignored.

The three goals identified as relationship goals are important, specifically, to serve the relationship between the partners. They need to be strong in partnership, to be integrated culturally and practically, and to be highly strong in teamwork. These goals are useful for the construction JVs and in any co-operative venture. As far as inter-organisational relationship is concerned, these goals are generally relevant.

To understand the level of success achieved by the JVs, it is necessary to know the overall performance of the project and the relationship. This will act as the indicator of success to be used in this study. The overall performance is defined as the attainment of the goals. Therefore, the differences between the expectations and attainments are the key measures used to identify the level of success of each JV. This can be defined as follows:

\[ \text{Attainment of goals - expectations of the goals} = \text{Degree of success} \]

The goals listed in table 4.2 are measured as 'expectations' as well as 'attainments'. The application of these goals are
justified based on their potentials as being the key variables for the JV project. Not all of the variables are relevant objectively to all the JV cases studied. The general co-operation features should exist within the JVs to a certain degree. For example, technology transfer may not be an important goal to a particular JV. So, the rating on the expectation for technology transfer for the JV is low. But in an actual situation the partners, to some extent, learnt upon the technology from one another and this could be counted as an achievement. Therefore, degree of success in technology transfer as perceived by the participant. So, the rating on the attainment of technology transfer is high, and the difference between the attainment and expectation of this goal to this particular participant would be positive, indicating greater in attainment than expectation. This is how success is defined in this study.

This study approaches the whole issue of organisational performance in effectiveness construct. The degree of success is the end state and the other is the criteria, the operationalised continuum representing the degree to which the desired end state is being met. Goals are not criteria, therefore, the validity of a particular criterion for assessing the degree of attainment of a particular goal would be an issue to consider (Campbell, 1977). Another of organisational effectiveness construct is the system approach. The questioning would not centre around what the organisation was trying to accomplish (the goal approach),
but the inquiries would be around the overall viability and strength of the system (Campbell, 1977). Campbell then suggests that if both types of analysts took their logical second steps, their efforts should tend to converge. That is, the goal-oriented analyst seeking to explain the organisations' success or lack of success in meeting its goals will soon have to investigate the systems variables. This study investigates the pattern of success and to identify the variables of the systems that would indicate some relations with the pattern of success identified. Therefore, the discussion in the next section is mainly on the variables that would explain the levels of success achieved by the JVs.

4.6: Structure

Structure is defined as an arrangement to form the JV. The motives that the partners have in forming the JV lead to the establishment of the JV structure. This is different from the organisational structure that we used to talk about. The framework of the JV organisation is the organisational structure which is, to a large extent, being influenced by the structure which is being discussed now. This is considered as the formation structure for the joint venture.

An institutional economics that is now known as transaction cost economics (TCE) (see, generally, Williamson, 1975, 1985),
makes comparative analysis of the mechanisms available to
govern the various kinds of business relationships (i.e. the governance structure alternatives) to explore the
following fundamental question: when does a manager pursuing
the kinds of business objectives such as strategic alliances (e.g. James, 1985), partnerships (e.g. Perlmutter and
Heenan, 1986), franchises (e.g. Friedlander and Gurney, 1981),
coalitions (e.g. Porter and Fuller, 1986), research consortia
(e.g. Ouchi and Kremen-Bolton, 1988), and various forms of
network organisations (e.g. Eccles and Crane, 1987;
Jarillo, 1988; Lincoln, 1990; Powell, 1990), use the market,
rely on her own organisation, or use a mixed-mode
relationship?

TCE researchers operate on an assumption that in answering
this question, managers will be motivated solely by
efficiency considerations; that is, they will select the
least costly of these alternatives, taking into account the
combined effects of transaction and production costs (e.g.
Williamson, 1985). Other motivations, such as equitable
outcomes, are understated in these analyses. TCE analysis
also assumes that economic actors are opportunistic. The
implications of trusting behaviour in designing governance
mechanisms are generally ignored.

Williamson (1991) has pointed out that "TCE has been
criticised because it deals with polar forms - markets and
hierarchies - to the neglect of intermediate or hybrid
forms." Powell (1987) suggests that the same organisations are engaged in contract-based transactions of idiosyncratic assets because they are pursuing a diverse set of business objectives that require co-operation because they involve reciprocal dependencies. These business objectives include gaining access to new technologies or markets, benefiting from economies of scale in joint research, production, and/or marketing, gaining complementary skills by tapping into sources of know-how located outside the boundaries of the firm, sharing the risks for activities that are beyond the scope or capability of a single organisation, and gaining synergy by combining the strengths and overcoming the weaknesses of firms in undertaking a venture that is much broader and deeper than a simple supplier relationship (Ring and Van de ven, 1992).

The interest in inter-organisational relationships literature is focusing on the structure of relationships. This is a growing area of research in international global business. Relationship formation has its causes and the conditions suitable for its implementation. The reciprocal dependency has become necessary in international business. Inter-dependence is the keyword for strategic alliances formed by joint organisations. This includes JV in construction.

This is also the main intent of JV in construction and as such the partnership is structured to be inter-dependent.
which requires structuring of the partners' relationships. Oliver (1990) integrates the literature on inter-organisational relationships into six generalisable determinants of relationship formation. The six critical contingencies of relationship formation are proposed as generalisable determinants of inter-organisational relationships across organisations, settings, and linkages. These are as follows:

1. Necessity
2. Asymmetry
3. Reciprocity
4. Efficiency
5. Stability
6. Legitimacy

These types of relationships are best explained using the table presented by Oliver as shown in table 4.3. From evidence that the basis of an inter-organisational relations (mandated or necessity versus voluntary) can be used to explain pattern of co-ordination and interaction among organisations (Oliver, 1990). Hall et. al., (1977) concluded that the exclusive use of an exchange framework to explain inter-organisational relations may be inappropriate because this type of framework is most relevant to relationship formation under conditions of organisational choice. Furthermore, Oliver said that, mandating a relationship not
only increases the frequency of interactions between respective organisations (Aldrich, 1976), but it also may reduce an organisation’s perception of power over its environment (Whetten & Leung, 1979). Therefore, the mandated versus voluntary distinction is important because the explanations and consequences of relationship formation associated with each, are fundamentally different. Table 4.3 describes only the voluntary interactions.

**Table 4.3: Critical Contingencies: Examples for Six Types of Relationships**

<table>
<thead>
<tr>
<th>Type of Relationship</th>
<th>Asymmetry</th>
<th>Reciprocity</th>
<th>Efficiency</th>
<th>Stability</th>
<th>Legitimacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Associations</td>
<td>Lobby state regulators</td>
<td>Promote collective good (e.g. trade shows)</td>
<td>Obtain economic advantages</td>
<td>Reduce legislative uncertainty (e.g. product standardisation)</td>
<td>Enhance members’ image</td>
</tr>
<tr>
<td>Voluntary agency federations</td>
<td>Increase collective power in fund-raising</td>
<td>Coordinate network affiliates</td>
<td>Achieve economies in collection and distribution of donations</td>
<td>Stabilise flow of donation to members</td>
<td>Increase members’ community visibility</td>
</tr>
<tr>
<td>Joint Ventures</td>
<td>Increase market power and entry barriers</td>
<td>Obtain synergies in technology, information sharing</td>
<td>Increase economies of scale</td>
<td>Share risks in entering new markets</td>
<td>Enhance profile in industry</td>
</tr>
<tr>
<td>Joint programs</td>
<td>Exert control over access to resources</td>
<td>Facilitate exchange of clients or personnel</td>
<td>Reduce costs of social service delivery</td>
<td>Share risks in mounting new programs</td>
<td>Demonstrate norms of cooperation</td>
</tr>
<tr>
<td>Corporate-financial interlocks</td>
<td>Influence sources of capital</td>
<td>Share knowledge and information</td>
<td>Reduce search costs for capital</td>
<td>Co-opt financial constituents</td>
<td>Project appearance of financial viability</td>
</tr>
<tr>
<td>Agency-sponsor linkages</td>
<td>Augment-power relative to other agencies</td>
<td>Facilitate information exchange</td>
<td>Rationalise acquisition of funding</td>
<td>Reduce uncertainty in flow of funds</td>
<td>Increase agency’s acceptance and prestige</td>
</tr>
</tbody>
</table>

These contingencies are said by Oliver (1990) to be the causes that prompt or motivate organisations to establish inter-organisational relationships, i.e. they explain the reasons why organisations choose to enter into relationships with one another. Although each determinant is a separate and sufficient cause of relationship formation, these contingencies may interact or occur concurrently when the organisation decides to establish an inter-organisational relationship. In construction JV the relationship generally addresses the strategic requirement of securing a project (or enhance market power as in the manufacturing based industries, as evidenced from several empirical studies (Kogut, 1988)) in competitive environment or in non-competitive environment. This is to respond to the risks and uncertainties of undertaking the project and also the benefit of pooled knowledge and expertise.

The mandated versus voluntary relationship formation explained by Oliver (1990) is on the basis of across industries. However, in construction JVs there are cases that can be categorised into any of these two. The interactions desired by construction companies in forming JVs in conditions with or without competition can be due to mandated or voluntary reasons. This is expected to have certain significant differences in the interaction processes but influence on the performance of the JVs could not necessarily be significantly different. This is because it is not the reason for its formation that would lead to success and failure, but it is the actual interaction...
process that is important to the performance of the JV. The shaping and nurturing of the interactions are more critical to the performance. This is the direction of this study, i.e. to determine how strong the interactions are in achieving the success of the JVs. Therefore, the reasons given by Oliver are useful as the desired intent to form JV depending upon the type of relationships shown in table 4.3. The construction JV is a straight-forward relationship which may require all those reasons for JV as presented in the table.

Interaction is the primary concept of the term structure advocated by this study. The most critical decision in establishing a construction JV is the level of sharing required in equity as well as in the contributions of expertise and resources. The equality concept of joint venturing is becoming more popular in JVs generally and this would lead to 50-50 equity share JVs. This trend in construction JVs is to be checked. However, the concept of interaction is operationalised by the level of sharing in expertise and resources. It is anticipated that the higher the level of sharing on expertise and resources, the more it requires the equality structure. This should relate to the 50-50 JV performance, i.e. the more the interaction is shaped towards equality, the more the relationship is adapted to be developed to greater success. The simple reason is that when we require sharing equally it has to be shared equally, otherwise use the unequal structure.
4.7: Organisation

The intent of a JV is to interact between two or more firms, and the organisation of a JV is to see how it is organised in its implementation. The organisation is usually formed to consider the environment and the setting of the JV. Whether the environment is competitive or not the organisation considered would be based on how effective the partners can co-operate together. There will be no threat on the competitive advantage between the partners because they were engaged in a one-off project. This is different from the long-term JVs of the manufacturing industry which is very much dependent upon the general market conditions for effectiveness apart from the relationships of the partners. In the manufacturing industry, the success of the JVs depend on the market as well as the relationship of the partners. Whereas in the construction JV, the market influence is not significant when the project is already secured by the partners.

The relationship of the partners is an important determinant of success. They are the main players and the success of the JV project depends so much on them. The interactions between the partners become more crucial. There are several variables that are very critical to the interactions of the partners at the organisational level.
These variables are as follows:

1. Distribution of personnel
2. Autonomy
3. Decision-making
4. Power resource
5. Communication

4.7.1 Distribution of personnel

Distribution of personnel from the parent companies to the JV organisation is usually done on the compromisation between the partners based on the level of competence and the recommendation of the parent companies' heads of the JV representatives. This is applied to the JVs which are integrated in nature where the partners' personnel are to be selected to work in the JV in a mixed group (or integrated groups) rather than as separate groups (or differentiated groups).

The dividing of personnel between partners to be part of the JV team is crucial in determining success because the balance of sharing of personnel especially in the 50-50 JV must be sustained. This is required to give equal weight to interaction process. Even if one partner is dominating in terms of the contribution of personnel, this is usually agreed based on the availability of the relevant persons in the parent companies. Availability is referring to the competency as well as number of personnel. Most JVs, in
practical sense, would be more concerned with competence rather than the number because too many people can jeopardise the decision-making process especially at the executive level. So, the number of personnel can affect the effectiveness of the interaction and the JV. This study investigates the number of the executive and the supporting staff as variables for the distribution of personnel in the desired interactions within the JV organisations.

The executive staff is defined as the staff who is holding an executive role with decision-making responsibility to ensure progress of work and to lead and control the task given. The supporting staff is a staff whose main role is to assist and to take care of the needs and requirements, and at the direction, of the executive staff. Competency is related to the level of expertise and this is operationalised in the structure level discussed in section 4.6.

4.7.2 : Autonomy

Autonomy is an important factor in JV relationship. The parents' interference is always regarded as an unhealthy situation because the JV organisation cannot function independently. The JV autonomy must be given by the parents so that the conflicting objectives of the parent companies will not be creeping into the JV and to influence it. This
can cause conflict between partners and the performance of the JV. The interaction must be within the JV framework which can be sustained only through the JV own autonomy. The level of autonomy given to the JV may be related to the level of success of the JVs. This variable is investigated in terms of the level of autonomy given by the parent companies to the JV organisation.

4.7.3 : Decision-Making Process

Shared decision-making is a major difficulty anticipated in joint ventures. The greatest frequency of interaction between the JV partners in construction activity is in decision-making because the problems in construction are emerging day-to-day until the project reach its completion. These are mainly concerned with production processes which includes planning, operating and controlling. The interaction of partners in decision-making of the JV problems can be limited to only at the policy level where the main contributions between the partners are dealt with such as financial and other resources.

At the operational level one partner may be more dominant due his expertise. Therefore, the balance must strike between the partners as to the needs of the project and the contributions to the project so that the decisions are made to satisfy the partners and the project without one partner
feeling suspicious towards the other, particularly to the partner with relatively lesser participation. This kind of JV with unequal structure is expected to have some difficulties in terms of trust in decision-making. The difficulty in decision-making in the equal structure of JV is mainly concerned with high performance requirements because both partners are well versed at all levels of the JV operations.

The equal and unequal structure of interactions affect the organisation process. Even though the equity structure is 50-50, which is emphasising on equality, the organisation may not necessarily be based on equality. It is anticipated that the JVs with low level of sharing in expertise and resources are also suffering from the difficulties in decision-making, i.e. low decision-making problems may indicate low interaction.

4.7.4 : Power Resources

Power is a widely debatable issue in inter-organisational relationships. Equality and inequality in structuring joint venture is considered by many as the influence to success and failure depending upon the nature of interaction desired by the partners. In JV, power should be seen as a resource because this is to abide by the principle of co-operation required through the formation of JV. The partners must be
resourceful to the JV rather than comparing power to control the other partner.

Power resources may be defined as those things which bestow the means whereby the behaviour of others may be influenced and power relations arise out of the uneven distribution of these resources (Hales, 1993). There are a number of well-known typologies of power resources. These are the bases of social power as identified by French and Raven (1959):

1. Coercive power, where the individual conforms to avoid negative consequences or punishment.

2. Reward power, where the individual conforms to receive certain benefits.

3. Referent power, where the individual conforms because they are attracted to and identify with each other.

4. Expert power, where the individual conforms because they believe the other to have superior knowledge or skill.

5. Legitimate power, where the individual conforms because they accept the right of another to have over them.
6. Informational power, where the individual conforms in order to receive desired information (this is added later by Raven, 1965).

These typologies are criticised by Hales (1993) and resulted in four basic kinds of power resources:

1. Physical power resources, or the capacity to harm or restrict the actions of another, which others desire to avoid.

2. Economic power resources, or scarce and desired objects or the means of acquiring them (i.e. money).

3. Knowledge power resources, or scarce and desired knowledge and skill in the context of work. This knowledge and skill may be either:
   (a) administrative, concerned with how an institution operates; or
   (b) technical, concerned with how tasks are performed.

4. Normative power resources, or scarce and desired ideas, beliefs, values or affects.

These power resources are related to personal and positional dimensions of managerial power. Each of the four power
resources listed above can be distinguished in both personal and positional power. These four power resources may be applied to construction JV because the focus of power is mainly managerial which is crucial in managing construction activity. However, the interaction of the partners in JV organisation whether on personal or positional power, is important in determining the relationship and success.

Since construction is more critical in operational tasks the power resources that are to be investigated in this study will be on the superiority of tasks managed and operated by each partner and the superiority of expertise and skill of the partners.

The superiority of tasks (referred to as "task superiority") measured is based upon the number of tasks one partner was more superior compared to another. The tasks are taken from the seven management tasks, which are described later in this chapter, as well as the larger number of a partner's origin in skill workers and the sub-contractors.

The superiority of expertise and skill (referred to as "skill power") of a partner is defined as the greater degree of professional skill of one partner demanded by the tasks in relation to the other partner. The tasks referred to are the same seven tasks of management.
4.7.5: Communication

Communication is the linking mechanism between people in organisation. Any breakdown in communication must have implications upon interactions process and vice versa. Interaction between partners in JV must continue to be lively to sustain the relationship and the progress of the project. Therefore, communication breakdown between partners is a sign of unhealthy interaction. Handy (1993) describes communication difficulties by saying that, "Often the individual is hard to talk with or even breaks off communication entirely. He becomes silent and withdrawn. Absenteeism is an extreme form of this symptom." Therefore, it is necessary to check the difficulties in interaction of the partners as evidenced from communication problems.

In international construction JV it is widely accepted that cultural differences play a significant role in the performance of the JV. One major problem that arises out of that, is language. Understanding language is to be able to communicate and understand one another. Therefore, it is more crucial to investigate the communication problem of the JV partners in relation to language.

There is another crucial communication problem concerning with partners' interaction, and this is in terms of the transmission of information. Due to partner's identity, the partners may be secretive to each other about certain
knowledge they possess. The informations may be shared only at minimum level, just enough to get things done. The process of learning between partners may be hindered by such motives. Hence, this possibility needs to be checked, and the more that this motive exists, the more it tends to affect the JV performance, and trust between partners is affected. This is used to measure communication problem and is referred to as "withholding of informations".

4.8 : Team

Team is a variable used to indicate how good the partners interacted with one another in the JVs. The effectiveness of cooperation can be seen through the effectiveness of team. The partners' relationships in acting in teams are to be measured to understand their effectiveness. The effectiveness of the team depends upon the team leadership and team members. These two are the main measures used by this study. Good interaction should come from a good team and this is required for the success of the JV. Thamhain (1989) found that strong leadership, personal commitment, desire and interest had a "favourable association" with successful project completion. For a team to be effective, the number of members should be small to facilitate teamwork (Moore et. al.,1992). Teams should be inter-disciplinary in order to ensure participation by all areas involved in a project (Bursic, 1992). These are all pointing towards team leadership and membership.
4.9 : Trust

According to many observers, learning in collaboration depends on high levels of trust between the partners (Lundvall, 1988; Buckley & Casson, 1988). High levels of trust enhances internal organisational effectiveness (Fox, 1974; Barnes, 1981), and trust facilitates continuing relationships between firms (Arrow, 1975; Macaulay, 1963). Hakansson and Johanson (1988) describe how, over time, interactions between firms build a range of commitments and bonds through a social exchange process. The bonds created are: technical, related to the technologies employed by the firms; knowledge, related to the parties' knowledge about their business; social, in the form of personal confidence; administrative, related to the administrative routines and procedures of the firms; and legal, in the form of contracts between the firms. These bonds create lasting relationships between the firms.

In one of the most recent and focused analyses of inter-firm trust (Sako, 1991, 1992), in her study of sub-contracting relationships in Britain and Japan, argues trust to be "a state of mind, an expectation held by one trading partner about another, that the other will behave in a predictable and mutually acceptable manner" (Sako, 1991). She argues that there are different reasons for predictability in behaviour, and this allows three types of trust to be distinguished. "Contractual Trust" exists such that each partner adheres to agreements, and keeps promises.
"Competence trust" concerns the expectation of a trading partner performing his role competently. "Goodwill trust" refers to mutual expectations of open commitment to each other.

"..........someone who is worthy of "goodwill" trust is dependable and can be credited with high discretion, as he can be expected to take initiative while refraining from unfair advantage taking........trading partners are committed to take initiatives (or exercise discretion) to exploit new opportunities over and above what was explicitly promised " (Sako, 1991, p.379).

Such high levels of trust often underpin the success of Japanese customer/supplier interactions. To achieve success in JV trust must extent beyond that of expectations of partners to contribute what was contractually obliged of them. The level of trust in the relationship should also encompass unexpected and unsolicited suggestions for partner's benefit in the expectation that in the future they may be reciprocated. Good inter-personal relationships, and effective communications, are continually identified by case studies to be critical in maintaining trust between partners and encouraging learning (Dickson et. al., 1990; Dodgson, 1991). In order for the collaborations to continue successfully, then the trust relationships underpinning them also need to have their own dynamic, and be engrained within organisations' routines and practices (Dodgson, 1993). It has been shown that collaboration can survive disruptive inter-personal rows. Trust, just as learning, becomes
engrained in organisational routines, norms, and values. It becomes part of the learned product of group experience that is culture (Schein, 1985). The shared scientific culture of the partners in the case studies, and the community of intent, facilitated the success of the collaborations. High trust is associated with respect for partner's abilities, commitment based on the belief of mutual benefit, and openness and honesty in objectives (Dodgeon, 1993).

This study follows the views on trust mentioned above. There is a need to gather as much information on the various aspects of the relationships between partners in order to understand the level of trust that existed in the JVs, particularly with those concerning the interpersonal relationships, respect, commitment, openness and honesty and learning. These are operationalised in the questionnaire items presented for the indicator of trust which are presented in the data analysis of this study, i.e. in chapter 7.

4.10 : Management Tasks of Joint Venture Projects

The project dimension is not part of this study. That is, the events that had occurred in the construction work itself is not studied. In other words, the engineering technicalities are excluded from this study. However, the
project is the activity of the JV. Therefore, the JV is mainly referred to as the way of managing the project. The act of managing involves several management tasks such as planning and control. Major tasks used to manage JV projects are selected based on the common need for interaction in construction JVs.

These were selected as follows:

1. Design
2. Project Planning
3. Financial Control
4. Material Control
5. Plant Control
6. Site Operation Control
7. General Administration

Design is included as a task because some JVs were between Contractor and Designer where the management of design and project were envisaged to be the complementary roles of the partners in the JV. Furthermore, the close and inter-dependence between on-going design and construction processes can lead to rigidities in contractual relationships with one another (Bresnen, 1990). This could lead to the difficulty in achieving a sufficient level of integration between the partners across the design-construct divide. Project planning is the task of programming, scheduling and organising of the project operations in terms
of time and resources. Other tasks which are specifically concerned with controls such as Financial, Material, Plant, and Site operation (particularly supervision and co-ordination. General administration is included as a control on the general office administration for the project. It is required to service all departments or sections as well as outside links on more general tasks.

These tasks are considered as useful to the needs for managing construction international JVs. The planning and control are critical for the interaction between partners. These tasks are necessary to the role of partners in joint venturing, especially when the degree of sharing within the role and its effectiveness are to be observed.
CHAPTER 5

RESEARCH METHODOLOGY
CHAPTER 5

RESEARCH METHODOLOGY

5.1: Introduction

The purpose of this chapter is to present the methodology of the research. The research methodology is to be divided into five main sections. These sections describe the objectives of the research, research strategy, data collection methodologies and data analysis techniques used.

The first section describes the overall objectives of the study and the development of the various propositions and hypotheses derived from those objectives. A framework of analysis discussed in the last chapter provides a scheme for the discussion and analysis of the main variables. This is linked to this section of the research problem. The second section is presented with the research strategy. The third section describes the data collection methods which include the measurements, sampling, and the survey. Finally, the last section describes the statistical analysis techniques used in this study.
5.2 : Main Objectives of the study

The main objectives of the study are to understand the state of international construction JVs. This is done by comparison with the general views of joint ventures in the context of the following research questions:

1. What is the nature of international construction JVs between the UK Contractors and other European partners?

2. What is the desired interaction structure in the international construction JVs that can be associated with the success of the JVs?

3. What are the perceptions of the UK Contractors, who have had successful experience in joint venturing with other European partners, in operating the JV organisations?

4. Do shared management and control abilities matched the task demands of the international construction JVs, since the duration of the construction activity is short-term, and the forms of co-operation vary?

An underlying purpose of the study is to extend our understanding of the successful international construction JVs particularly between the UK Contractors and other European partners in relation to structure, organisation and
team. This understanding requires a comparative basis with general views and theories about successful implementation of joint ventures. The need to compare construction JVs with other JVs is crucial since the nature of construction activity is short-term which is different from the long-term JVs in other industries.

A general consensus of the construction executives interviewed during the pre-testing and pilot survey of this study and from the literature is that joint ventures are not a new way of thinking, but to undertake a JV requires a carefully planned strategy. There are indications that the UK Contractors prefer doing business in other European countries but not by means of JV. They have other options such as establishing a subsidiary company in those countries if the opportunity arises. However, these other options are not included as part of this study.

There is a growing interest in the European Community in developing business linkages between the member states. Alliance activities, in one form or another, are becoming crucial in international business. Construction is an activity which needs to face up to the new challenge of international business undertakings particularly within the European countries. The nature of co-operation in a JV may be viewed in terms of the degree of integration desired. The partners may co-operate based on the division of labour or autonomous functions. Since a JV involves creating a hybrid
organisational structure, the new entity ought to be produced in the form of an integrated culture and practice. The desired form depends on the nature of integration, i.e. either horizontal or vertical integration. This is also reflected from the equity share or from the equal or unequal structure of the partnership.

The third question above deals with the outcomes of several interactions within the JV organisations. These interactions are explained in several forms of organisational variables in order to seek patterns of associations linked with the level of success of the JVs. This enables the determinants of success to be inferred from this study and will allow further research to confirm these findings.

Due to the short duration of the construction projects, there would be some anticipated difficulties in terms of the speed or the extent of adaptation between the partners. However, there would also be some match/mismatch in the task of managing the JVs. Thus, the shared management and control may not justify the desired level of interaction and, consequently, affect the level of success achieved.
5.2.1 : Specific Objectives

The specific objectives of this study are as follows:

1. A cross-sectional study of the JV organisations is the main focus of the investigation to be pursued.

2. The origins and purposes of the JVs between UK Contractors and other EC partners will be investigated.

3. In particular, the structure and the interactive characteristics of the JVs will be studied and how these lead to the levels of performance of the JVs.

4. The organisational variables influencing the performance of the JVs will be investigated.

5. The performance of the JV teams based on the origins of the partners will be considered since these must influence the success, or otherwise, of the projects.

6. The relationships of the partners in projects at all three levels will be considered in relation to the interactive processes which took place.

7. The construction JVs on a 50-50 basis have been widely practised, with expected influences upon the effective interactive processes of the partners contributing to the successful performance of the JVs.
The literature on JVs accepts the view that the main concern for any JV partner is the surrender of control to the autonomous JV organisation. This can be an unacceptable condition for some people when business development is concerned. But the changing attitudes for global strategic development of businesses have in turn changed perceptions and led to the consideration of the JV as one of the best ways to venture into foreign markets. Doing business alone becomes more risky than with a JV.

There is an urgent need to explore the prospects that a JV can produce so that the need of the "practitioners" as described by Thomas and Tymon (1982) for the organisational research relevance can be considered. The basic relevance of this piece of research is to provide a foundation for explaining the interaction of the partners of those 50-50 JVs, which is an inherent nature of the current JVs between the UK contractors with other European partners, in relation to the level of their success. The descriptive strategy for JVs is considered as the background motive in creating a JV which is operationalised by a more dynamic interaction motive. This operationalised motive is the foundation of the determinants of success in JVs.
5.2.2 : The General Propositions

Since the nature of the Construction Industry is unique in relation to other industries, the general organisational theory cannot be readily adapted to the JV organisations. The general organisation theory is not involving with a hybrid arrangement such as in a joint venture organisation. The concentration on people within the JV organisation is basically concerned with the partners' origins which relate to cultural differences, mutual understanding and trust and many other differences which are the cause for concern in any co-operative effort. This can be considered as the first layer of the interactions that needs proper treatment before the relationship can be enhanced further. This layer is referred to as the "structure".

The learning process is a continuous event. The cultural differences, mutual understanding and trust will be continuously scrutinised, and as a result, adjustments are accommodated by the partners to ease any obvious differences that would jeopardise the relationship. This is referred to as the "organisation" level.

The people themselves are the actors who have influences upon the performance of the JV. The assessment characteristics of the leaderships and the team members are required to be assessed in determining the influences. These variables are used as the indicators for the "team" level.
The relevance of this study, upon the focus on the partners' interactions within the JV organisations, must be put forward as a basic understanding of the success of the JVs. Several benefits can be gained by learning and developing this knowledge, especially on the variables related to interaction at the various levels or sections of the organisational aspects such as the structure, organisation and team in relation to the pattern of success. The propositions of the study are as follows:

P1 : Due to the need for equality in the shared structure of the construction JV, there is likely to be a need for a balanced structure between the partners in managing the JV in order to achieve success.

In managing a JV, the partners need to be involved in the decision-making process and other management and control tasks. Their differences would make the process become difficult, but this is the challenge that they have to face. The more positive the partners are, the more they can manage to overcome the challenge for their success. The lack of positive attitude can emerge from the lack of sharing which does not reflect the existence of the real challenge for dynamism.
Another major drawback is in the business and cultural differences. This is inevitable in international relations. The knowledge of other countries must be sought. More open and frank negotiation is necessary to judge upon the partners' tolerance and desire to learn about each other's culture and practices. If the differences are so critical that the partners find it difficult to adapt to each other, it would be noticeable from the very early stage of the negotiation for establishing the JV. The worst thing that can happen is to end the relationship without forming the JV. This had happened to some construction companies which were revealed during the investigation of this study. Once the partners have signed an agreement for the formation of a JV, the relationship often proceed until the task is completed.

Though a relationship in a construction JV is often run until completion of a project, the actual success of a JV may not necessarily be achieved. The project must be completed no matter what ever happens because the partners must maintain the good image for their future business undertakings. The partners also try to avoid the penalty clause for a breach of contract with the client if the project is to be abandoned. Hence, there is a need to understand the interaction of the partners in a JV in relation to the level of success achieved. The difficulty of the interaction needs to be assessed at the structure, organisation and team levels. The next proposition is:
P2: As a result of language, cultural and organisational differences between the partners' origins, there is likely to be a number of organisational and operational differences and potential difficulties.

A JV is a commitment which the partners must share. There would be no JV when there is no common control between the partners involved. Control means the ability and power to affect on matters concerning the policy and operation of the project. This requires a shared decision-making and contributions in terms of the needs of the JV. Organisational learning and adaptation would normally take time to bear on the relationships. This requires time for adjustment and to effectively adapt to each other. This leads to the proposition:

P3: Due to the shorter duration of construction JVs, it is likely that there will be more mismatch between task demand and management abilities.

The study focuses its investigation on clarifying differences between the construction JVs and the general JVs at the international level based on the general views and theories of JVs. The detailed theoretical framework discussed in chapter 4 is referred. Cultural differences and potential difficulties from the cases studied would explain this situation and critical examination of the cases concerned will be made.
The matching of task demand and management abilities is to be done by comparing the management tasks of the JVs. The propositions are expected to lead to an understanding of the general pattern of success of international JVs in construction, particularly concerning the relationship between the UK Contractors with other European partners.

5.2.3 : The Hypotheses

The foregoing propositions and the research objectives can be specifically reduced to the following hypotheses, which are the main thrust of this study:

H1 : The international construction JVs, particularly between the UK Contractors and other European partners, are formed for particular project purposes between the partners, to interact in co-operative ventures by sharing expertise and resources specific to the project and which influence the level of success of these JVs.

H2 : The appropriate characteristics of all the organisational variables influence the level of success.

H3 : The team members' characteristics and the leaders' personalities are strongly related to the level of success.
5.3 : Research Strategy

"The ultimate goal of social sciences is to produce an accumulating body of reliable knowledge. Such knowledge would enable us to explain, predict, and understand empirical phenomena that interest us." (Nachmias et. al., 1992). Nachmias also stated that ever since David Hume (1711-1776), such an application of the term explanation has been considered a matter of relating the phenomenon to be explained with other phenomena by means of general laws. General laws set the framework from which a particular explanation can be derived. The quotation of the words of Richard Braithwaite (1960) was highlighted by Nachmias et. al. (1992) and this is requoted here:

"The function of science.....is to establish general laws covering the behaviour of empirical events or objects with which the science in question is concerned, and thereby to enable us to connect together our knowledge of the separately known events, and to make reliable predictions of..."
events as yet unknown.......If science is in a highly developed state,..... the laws which have been established will form a hierarchy in which special laws appear as logical consequences of a small number of highly general laws...... If the science is in an early stage of development,... the laws may be merely the generalizations involved in classifying things into various classes."

It is generally accepted at this time that international JVs in construction are a little explored set of experiences. There is lack of empirical evidence. Even if available, they are in a widely varied classification. Therefore, the last part of the quotation above would be more relevant to explain the stage of development of the laws which this study is engaged in. This situation would rely on probabilistic rather than deductive explanations because of the lack of universal laws. Nachmias et. al.(1992) also stated that not all scientific explanations are based on laws of universal form. This is particularly the case in the social sciences because few, if any, meaningful universal generalisations can be made. Social scientists use primarily probabilistic or inductive explanations.

Furthermore, this study is within the scope of organisational theory. Much of the organisational research borrows and relies upon concepts and approaches to the conduct of research deriving from the social science
disciplines (especially psychology and sociology) that have given and continue to give organisational research much of its impetus and character (Bryman, 1989).

The introductory remark given by Handy (1993) in his book "Understanding Organizations", is an important message to this study:

"I came to the study of people in organizations expecting certainty and absolute knowledge in the behavioural sciences. I anticipated that I would find laws governing the behaviour of people and of organizations as sure and as immutable as the laws of the physical sciences. I was disappointed. I found concepts and ideas abounding. I found, too often, ponderous confirmation of the obvious and weighty investigation of trivia. But the underlying unalterable laws were not there, organizations remained only patchily efficient, and the most exciting of the ideas did not always work."

Handy (1993) realised that, perhaps with some exceptions in physiological, psychology and the study of people in organisations is not to do with predictive certainty - for two good reasons:
1. The multiplicity of variables impinging on any one organisational situation is so great (he suggested over 60 variables) that data on all of them are sufficient to predict the precise outcome of that multiple inter-relationship and would never, in practice, be forthcoming.

2. What seems to be the inherent ability of the human being is to override many of the influences on his behaviour.

He also realised that the organisational phenomena should be explained by the kind of contextual interpretation used by an historian. Such interpretation would allow us to predict 'trends' with some degree of confidence. To add precise quantities to those trends, as in the physical sciences, would, however, be inappropriate and unrealistic.

However, this study is not intended to pursue an investigation on the question of "why?" because:

1. it requires detailed observational method which is not possible due to the availability and multiplicity of JV organisations.

2. it requires much longer time and cost to collect data in such an organisational study.
3. It requires many tests on all possible variables and sub-variables which cannot be manipulated and controlled.

4. If only a few variables are selected, the answer to the question of "why?" will still be spurious.

This study intends to view the JV as an interaction between partners, and the variables are selected based on the potential difficulties in interaction between the partners. The selection of the variables is based on their importance in organisation theory. When the variables are all associated with one another and also to the overall performance, then the international JVs in construction particularly between the UK Contractors and other European partners' interaction in achieving success can be explained.

However, if there is little significant relationship between interactive variables, it is either that aspects of interaction in this kind of JV that are not critical to the JV success or they are critical in terms of a specific aspects of the JV only. Whatever the results will be, the JV aspects that are critical to the JV success, which exist within the sample studied, would be very useful for future research. This is a critical investigation which should be a basis of understanding the construction JVs particularly between the UK Contractors and other European partners.
The drawbacks on organisational study are well understood and accepted generally. The need to understand organisations is very important and further difficulty is anticipated in the study of JV organisations which involved two or more parent organisations. This creates much greater variables to be considered. The pattern of performance of JV organisations is a phenomenon which requires specific treatment of the theoretical framework for its analysis. The basic idea of the construction JV is emerging from the justification of needs and strategies for a temporary organisation. This suggests the scope of structuring the JV, organisation effectiveness and team effectiveness which could explain the JV performance more comprehensively.

This framework could be useful when the sample is from the same population of the JV organisations. Unfortunately, the only appropriate sample available is from mixed construction JVs where the motives, forms, partner's origins, size, technology, time and location of projects involved vary. The presence and influence of these and other extraneous variables that exist within the sample, make this study limited and exploratory in nature.

There will be only dependent variables exist because only the attributes of the JVs are studied. The main analysis will be to seek the relationships between these attributes as perceived by the participants. This uses the organisational variables as the attributes of the
organisations studied and they are focused to a specific concept about the JVs, i.e. the interaction between partners. This is concerned with the questions such as:

(a) How the participants associate the organisational variables pertaining to partners' interaction with the overall performance of the JVs?

(b) How the variables are associated with each other?

This is a correlational research. It is not trying to establish a causal connection between two variables, but rather to determine the nature of the JV relationships. This study cannot be manipulated and cause and effect cannot be easily inferred. This study suggests the need to capture the practical issues of JV relationships.

Bryman (1989) said that it is a mistake to think of all quantitative research as concerned with the testing of hypotheses. In many instances, the research is much more exploratory. For example, an investigator may be concerned to establish whether two or more variables are related, but may not have specific expectations about the nature of the relationships that those variables are likely to exhibit. He also said that the tendency for much quantitative organisational research not to be theory-driven is by no means a bad thing, since such research should emphasise practical concerns so that advice for managers and executives can be provided.
The strategies mentioned above and the limitations on the sample and the various associated difficulties are the essential features of this study.

5.4 : Data Collection

In the data collection section, four sub-sections are presented. The sub-sections are to present the methods beginning with the variables and measurement, questionnaires, leading to the sample, the survey and interviews.

5.4.1 : Measurement and Variable Analysis

The multivariate nature of organisational study involves large numbers of variables which cannot be discounted in understanding the phenomena. The success of JV organisations is the chemistry of the variables. The completeness of the organisation is the basis of performance and it is a matter of how much of each is needed to balance up the requirement for success.

Chapter 4 has presented the discussion on the main variables and their operationalisations to arrive at their measurements. The operational definitions presented in chapter 4 are useful for measurement purposes. A great deal
of scientific activity, including its laws and theories, is concerned with its measure and, through this, examine the observable properties of phenomena (Ackroyd and Hughes, 1992).

The main focus of this study is the interaction between the JV partners, that is particularly between the UK Contractors and other European partners. This is the main construct of the whole study and the participants were briefed on this need during the investigation at the various levels of the variables used in the study. This section is to present the importance of the measurement and variable analysis.

Measurement is, in many ways, the point of variable analysis and is its inferential backbone (Ackroyd and Hughes, 1992). Quantification provides greater descriptive flexibility and subtlety than simple classification such as "YES" and "NO". Greater descriptive flexibility makes for a greater flexibility in the formulation of laws.

The measurement of the variables in this study is the Likert-type measurement. This is mainly a 1 to 6 rating scale with one as the lowest and 6 as the highest. Having 6 points on a scale does not provide a specific mid-point to avoid the tendency for an easy way out for the participant to respond. Even when the perception is moderate on a particular question, it has to be interpreted as either moderately low or high which would be 3 or 4 respectively on the scale.
This enables the perception in question to be categorised as low and high, i.e. the ratings of 1 to 3 represent as the degree of low on the perception and 4 to 6 represent as high. This is shown in figure 5.1.

**Figure 5.1 : The measurement scale**

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<th>Generally Low</th>
<th>Moderately Low</th>
<th>Moderately High</th>
<th>Generally High</th>
<th>Very High</th>
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A raw score based on summated ratings to a series of statements means relatively little by itself. Raw attitudinal scores are of the greatest value when they are used relative to other scores from other respondents on the same instrument in a comparative sense. If a rating of 2 from the scale in figure 5.1 is the response of a participant on a questionnaire item, it is meaningful to this study to the extent that it can be explained in terms of the situation the participant was in the JV in relation the other respondents. Since the Likert scale has flexibility of summated rating measures it is easy to interpret the phenomena, and the measures lend themselves to ordinal measurement which are suitable for statistical techniques available for assessing variations and patterns in organisational phenomena.
Thurstone scales require large numbers of participants focusing on few variables, so is not suitable for this study. The Guttman scales are preferred for measures of attitudinal traits in unidimensional objectives. By using this scale the advantage of using the Likert-type measure will be lost. Therefore, it is not used in this study because the need to have the continuum scale is very important due to the need for further statistical tests. The use of frequency distribution in this study is hindered by the small sample size, hence, the Likert-type scale should be able to overcome this problem.

It has been demonstrated that under certain conditions, persons express attitudes inconsistent with their subsequent behaviour (LaPiere, 1934). The perceptions of the participants can also be manipulated by the participants such that the truth is not revealed. This intentional attitude of the participant cannot be blamed on the measurement but still requires checking by the internal consistency test. Since the sample size is small, indicators are easily checked one by one directly from the participants' confirmations. The item analysis is used where there are a number of items describing a particular variable (such as "trust" used in this study).

Instead of a test-retest method, a similar approach was made by reconfirming with the participants through telephone conversations concerning the particular issues for which the
responses had been suspicious in terms of their consistency. Familiarity by the participants on the question asked is avoided by treating them as fresh questions and not repeating the previous questions directly. However, the conversations were kept to the minimum time limit to enable sharp, clear and straight to the point responses. The points made were finally rated by the participants and these were compared to the previous ratings and inconsistencies were rectified on the spot during the conversation. The confirmation given by the participants at this stage were accepted as final and used as indicators of the variables.

Broadly expressed, variable analysis is the disposition to see and describe social life as a collection of variables which, potentially, can be quantified and the relationships between them also measured and described in quantitative terms (Ackroyd and Hughes, 1992). They also said that the only way forward was to develop the tools of empirical research, measurement scales to facilitate the description, aggregation and comparison of data; to provide good, solidly based findings. For Lazarsfeld, the research process began with a problem and a 'vague image' of some relevant concepts and their inter-relationships. It was this 'vague image' which had to be translated into a form which could be explored, even tested empirically using the pattern-searching techniques of variable analysis. This meant translating the concepts into empirical indicators.
In this study, the main theory is concerned with joint venture. What made a JV successful? This is seeking variables which have potential influence upon JV success and there are many of them. A joint venture has several dimensions and the same with success. These were defined to get a clear set of empirical indicators in earlier chapters. It is the behaviour of the indicators which enables us to unravel the conceptual and definitional ambiguities.

This process of elaborating a concept and moving toward empirical indicators is the crucial step in variable analysis (Ackroyd and Hughes, 1992). They further said that the choice of indicators is not a straightforward business, though there are fairly standard ones. This is true in organisational theory since this area of study is so established and the variables are almost common to all organisational literature except for their applications to the underlying phenomenon being studied. Finding patterns of association among indicators will enable us to determine which among them, are the most significant.

The relationship between an indicator and the property of the underlying phenomenon it represents, is a probabilistic one, though the parameters of the relationship are unknown since the phenomenon itself can never be directly inspected. It is only made visible only through its indicators. The correlations of the indicators of structure, organisation and team with success variables are indicators of the important dimensions embodied in the concept of joint venture.
Stable properties reflected in the empirical relationships among the various indicators point to a real phenomenon of the particular concept. These empirical relationships show to what extent theories can be accepted. This eventuality is exactly what variable analysis is intended to show and by this means this study is intended to accomplish. The variable analysis is presented in chapter 7 where the various indicators are derived and eventually tested. The variables have been discussed in chapter 4.

The reliability of the indicators depends upon the perceptions of the participants during the various interviews. The small population for sampling makes the reliability test difficult especially in confirming consistency of the data through a large population. The validity test is not pursued at the initial development of empirical knowledge such as this. The conceptual framework for the study of JVs in construction is the main aim at this stage of empirical development. This is the basis of this study.

Variable analysis stipulates that the phenomena of social research be reflected in objective, observable indicators which 'stand for' the phenomenon. No direct inspection of phenomena is possible; they can be investigated only through their indicators. It is required to see how well a particular indicator correlates with other indicators of the same concept and with other indicators of concepts presumed
to be related in some causal connection. This study makes critical evaluations of the relationships between indicators with the general views and theories in JVs from other industries. At the same time the relationships between the various indicators within this study will be discussed.

5.4.2 : The sample

This area of research is still at a formative stage. The practice of JV by the construction companies are few and mostly with domestic JV partners. This study focuses on international JVs but within European partnerships. The scope becomes more limited. This is the objective of the study and the search for appropriate cases of JVs in this category was found to be restricted. The JVs are considered as risky businesses by most UK Contractors asked and the JVs are indeed always a risky business. Construction is a high risk business and by putting the two together there will be more risk in construction JVs.

The search for cases of such JVs were made in the various companies directories particularly in construction such as the Jordan's Top 500 construction companies and others such as Dunn and Bradstreet. The Jordan's "Top 500 construction companies and the National Contractors Group were used to survey their experiences in JVs. The contractors file 1992 was also checked from the New Civil Engineer/New Builder magazine (NCE/NB), 1992.
The objective of the search is to know which companies have the experience that is required by this study. The experience of the companies required by this study is on the construction JV by the UK Contractors with other European partners in any country in the world and in any period of time. Two preliminary surveys were conducted to search for the construction companies with this experience.

The anticipation is that there should be more international JV experiences by large companies. The top 500 construction companies could be a more reliable list to make this survey. From the 500 companies in the list, 76 companies listed in the National Contractors Group (NCG) of the UK were excluded first because they were surveyed by another colleague who did a study of domestic JVs.

There were more companies being excluded because the irrelevances such as the nature of business and some companies were from the same group of companies listed as subsidiaries or holding companies. These were detected after they were called by telephone. Some companies which had the same address because they were under the same holding company, were not equally appropriate for the experience required. All together 370 companies were finally selected to be surveyed.

This survey was done by a mailed questionnaire which was specifically aimed at identifying their experience in JVs.
At the same time it was required to understand the JV backgrounds. This is shown in Appendix 1. This mailed questionnaire included the covering letters which are also shown in the same appendix.

The response was poor. The detail of the response is described in chapter 6. Follow-up calls were made and those responded with "Not received" were sent with another questionnaire after confirming their addresses. All together there were close to half of the participants claiming for another set of questionnaires. There were quite a number of companies which could not be contacted due to unavailability of telephone numbers. These were checked in the telephone directories and also from the telephone operators enquiry service.

The number of companies responded with the JV experience from this survey was only 44 companies. This is about 12% of the total number of the 370 companies which the questionnaires were sent to. This was very discouraging but it was thought that it could be that lack of JV experience was possible. It could be there were no more than had been received, or it could be that those not responding had bad experiences in JVs which they did not like to share with anybody else.

However, the fact must be accepted that there will always be limitations to research and this is one of them. Next, the questionnaires were sent to the National Contractors
Group, where a total of 76 companies were registered as members. These large companies could be expected to have much JV experience due to their status as national contractors. They were sent a simple one-page questionnaire just to find out whether they had JV experience with other European partners. This is shown in Appendix 2 together with the covering letters.

Again the response was poor. This was checked with the NCG directories of membership December 1990 and it was found that there were only 23 companies which had overseas contracts out of the 76 companies. However, most of these contracts were not JVs. There were only 11 companies which responded that had JV experience with other European partners. Follow-up calls were made and the following excuses were given for reasons they were unable to participate:

1. No JV experience at all.
2. No JV with other European partners.
3. We had negotiated for JV with European partner but did not get on the ground.
4. We were a sub-contractor to a JV project but not a partner.
5. We charge £50 for a research survey (Of course, this is just another way of saying "NO")
The 44 companies from the first survey that had indicated having the JV experience were contacted by telephone to confirm whether they have JV experience with other European partners. If they did have such experience, an appointment for an interview with the appropriate person was arranged immediately. Similarly, the 11 companies which had the experience from the NCG were also contacted to arrange interview appointments. Most of the 44 companies from the first survey have the domestic JV experience. Only 4 companies were willing to participate and be interviewed together with the 11 companies in the NCG. A total of 15 companies were therefore the sample size available for this study.

5.4.2.1 : The Eight JVs Studied

This limited sample was unavoidable. To do random sampling was not possible due to lack of support for participation and particularly the lack of cases available for study. The question whether this sample is representative of the whole population, can be strongly asserted from the search of companies which proved to a great extent that the total number of cases studied represents a large proportion the JV population of this nature, i.e. those that have JV experience with other EC partners. In other words, the eight cases studied are to a large extent generally represented the total population of joint ventures by the UK
Contractors with other European partners up to this date. This is also evident from the literature review discussed in section 3.3.

5.4.3 : The Pilot Survey

The pilot survey for the final structured interview questionnaire was made with 3 people who had JV experience. These people were from 3 large UK construction companies. They were identified from the telephone conversations in the preliminary surveys. They were contacted by telephone for appointments. The fact that they were selected for a pilot survey on a research survey within their area of interest, made the meetings very interesting and lively. They were met at their respective offices.

They were asked to try and answer the questionnaire rather than just having a glance through it. As they filled in the questionnaire they realised the clarity of the items and commented on them. The comments were noted and corrected where necessary. Ideas and advice were given on the structure of the questionnaire as well as the contents. Some useful comments were accepted and later added and modified to the questionnaire. Most clarifications made were related to:
1. Sentence construction particularly with regard to objective of the questions such as: Does the question really ask what you want to ask? Sometimes the use of a particular word can change the direction of the question.

2. Repetition of intentions through questions are necessary to be able to achieve clarity. One question is sometimes insufficient to highlight a full version of an answer required. Therefore, added questions have to be included but addressed in a different manner.

3. The variables used were also checked and commented upon. Some measures that have been used for certain variables were questioned on their relevance conceptually. The objective of the study was clarified to the persons doing the piloting, i.e. JV as an interaction between partners. The variables were measured based on this construct about JV.

The questionnaire finally reviewed with the supervisor and some pages were added as a result. The total A4 sheets of the questionnaire increased from 12 to 21. The time limit was taken into consideration because a long questionnaire will be boring for the participants. The estimated time taken for the interview should be not more than two hours. The time taken for the final questionnaire was just good enough, i.e. between one and a half to two hours.
5.4.4: The Structured Interview

The total number of companies set for the structured interviews was 15. There were difficulties in arranging the appropriate people from these companies for the interviews. These people were the "key informants" who would be reliable to present the perceptions required by this study. This is based on the involvement of the participants in the JV project undertaken and thoroughness of knowledge with the events and circumstances of the JV partnerships within the project concerned. The participants were finally agreed and interviewed except two companies which refused to participate. These companies were contacted several times but the secretaries gave excuses that the principal was not in the office. After a few weeks of trying, they finally confirmed that they were not willing to participate. The number was reduced to 13.

Out of the 13 companies which participated only 8 companies were relevant for this study. Five companies were found to be JVs not with European partners. They had misunderstood the need of this study though the letter sent to them had clearly stated the aim of the interview and the topics for discussion. The mistakes were mainly made by the secretaries because they were the people who made the arrangements for the appointments. I had not been given the opportunity to explain to the person concerned when I made the telephone calls to the companies.
However, the meetings with the five companies were useful. Their experiences were on the JVs located outside the EC such as in Egypt, Hong Kong, Malawi, Thailand and Hungary. The discussions were interesting and each meeting lasted about 2 - 2 1/2 hours. The points of the discussions were noted which could be useful for this study.

From each company, only one person was available for the interview, although a number of people was required. But this was never agreed by the participants who were mostly company directors or senior executives. If they were the people responsible for the JV project, they would never recommend a second person from the company to be interviewed.

This study had make do with one participant per company. The perceptions of the UK Contractors involved in the JVs with other European partners are the objective of this study. The other European partners were not interviewed because it would take a longer time to find them in their own countries and would be costly. Furthermore, not all partners could be available for this study especially those JVs which had been undertaken a long-time ago. This were confirmed by two participants. In order to be consistent, the study focuses on just the perceptions of the UK partners.
The objective for having a structured interview was mainly to limit the discussion to only the requirements of this study. There would be a great number of subjects that could be talked about in JVs, but this study has its own direction and so it had to be structured.

Interviewing skill is an important quality that a researcher must possess in order to be effective. The actual interaction between the researcher and the interviewees was kept in a relaxed manner. The impression to finish the discussion in a hurry was avoided. Instead, time was given for the participant to think. If the interview was interrupted by his colleagues, time was allowed I would be pleased to wait and if he needed to rush for a meeting or to go somewhere, it was suggested that the meeting be continued on another day.

The participant's thinking ability was much needed especially when he required time to recall the events which may have taken place a few years earlier. Fortunately, not one interview was postponed. The participants were quite prepared for the interview with some papers and documents ready. This is due to the letter sent to them that had stated the general topics for discussion. A copy of the letter is shown in Appendix 3.
The first part of the questionnaire was mainly set with general questions written in full item-by-item until item no.70. After that there were questions presented in matrix forms. This part of the questionnaire with the matrixes were dealings with more specific issues such as JV goals, partners skill contributions, personnel distributions, JV needs, team characteristics, leaders' personalities and future EC JVs.

The first 70 questions were all to be answered based on the 6-points rating scale representing 1 as strongly disagree to 6 as strongly agree. The matrixes were also based on the same rating scale, otherwise indicated in the questionnaire as shown in Appendix 3.

After completing the questionnaire there was usually about 20 to 30 minutes given by the participants to discuss general issues concerning the backgrounds of the JV projects. This open discussion was found to be very useful because it strengthened the data in the questionnaire. It was astonishing that with these participants during the interviews they had provided more than had been expected, i.e. in terms of their time, co-operation and readiness to share their experiences with the researcher.

The problem of social desirability is difficult to judge but through the expressions and the exchange of views that were gained from the participants, it was as if the researcher
had known them for a long time. The relationships developed within the few hours and were both very lively and well acquainted. This applies to all participants. The friendship the researcher had experienced provided a strong feeling that the effects of social reserve on the information given were minimal if ever present.

Of course, the possibility for such an effect is not denied in this kind of interaction. It would be reduced when an interaction is accepted with interest by each other. Before leaving a meeting assurance was always given that further telephone call to the participant may be made if required. Calls were made on and off, not for long conversations, but to get specific information and clarifications. This helped in clarifying and confirming the issues which were useful to the data.

5.5 : Statistical Analysis Techniques

This section presents the data analysis methods used in this study. Due to the small sample size, the non-parametric statistical methods were used. The need of the study for statistical analyses would be pattern searching. The general theories and views about JVs were used for comparison against the performances of the international JVs in construction. This objective was useful in understanding the relationships between the main variables that were critical to the successful implementations of JVs.
The particular conceptual construct that was used in viewing construction international JV was the interaction between partners. This was focused upon as the need for sharing of expertise and resources being the main objective of co-operative venture required for the formation of JVs in construction activities.

The study relates the perceptions of the participants to the variables that are used in this study which are taken from the general theories. Testing of the perceptions on the variables gives the indications of the likely relationship of the construction JV practices.

The Spearman correlation is suitable for small sample size. The statistical application is by using the Statistical Package for Social Science (SPSS) for Windows. This is called rank correlation which uses ordinal variables. Spearman's rho is used due to its popularity compared to Kendall's tau (Bryman and Cramer, 1990). The computed coefficient will vary between -1 and +1. It provides information on the strength and direction of relationships. Due to unavailability of interval variables, Pearson's correlation is not used.

The pattern of success of the JVs can be analysed in relation to the structure, organisation and team variables and this is achieved by using the analysis of variance (ANOVA) from the non-parametric statistics in the SPSS for
The tests of significance for correlations and the differences between the levels of success from the analysis of variance are used to describe the relationships between the variables and the levels of success of the JVs.

The non-parametric statistics using ranked data are suitable for small sample size. The pattern of "high" and "low" success can be determined by using the Mann-Whitney U Test, also known as the Wilcoxon test. This test is suitable for use since it requires only that the sample be random and that values can be ordered (SPSS for Windows: Base system User's Guide, Release 6.0, 1993; Foster, 1993). This is also referred to as "Two Independent Samples" test.

From the eight cases studied, they are arranged in order of success. They are divided into two groups: Cases 1-4 are in the "high success" group, and cases 5-8 are in the "low success group". This is done in order to treat one group differently from the other by the level of success achieved, with a view to deciding whether the various variables (relationships performances in structure, organisation and team as well as other variables used) have any noticeable effect (Meddis, 1984). The Mann-Whitney compares the scores on a specified variable of the two independent groups mentioned.
Two-tailed probability is used as a test against non-specific alternative hypothesis (non-specific tests make no prediction). They allow either direction of difference as evidence against the null hypothesis being true. This is relevant for this study since there are no specific directions given to the difference of any of the variables on the level of JV success.

Another test useful for data analysis of this study is the Friedman test or the three or more matched groups. This test compares more than two related sets of scores. Due to ranked data used, the raw data to be used must be from the same scale or measure so that the sets of data are matched (or related), otherwise, the ranking will be wrongly placed for the variables to be tested. This is useful for the number of variables that need to be compared for test of significance and at the same time the mean rank can be compared.
CHAPTER 6

DESCRIPTIVE DATA OF THE JOINT VENTURES STUDIED
6.1 : Introduction

The principal objectives of this study were exploratory in nature, as a result, a broad data needs to be described. In addition, even though the sample was small for the main analysis of this study, there were other data obtained before arriving at the final sample. These data included those from the preliminary study which were useful in the development of this study. This chapter contains descriptive data with respect to the responses in the first two mailed questionnaires as well as the features of the eight participants and their companies of those finally interviewed. The eight cases represented the main data of this study.

6.2 : The Search for companies with JV experience

As discussed in the previous chapter, two mailed questionnaire sets were sent to the construction companies. The first set was to obtain views about JVs as well as identifying companies from 370 companies in the Jordans' Britain's Top 500 Construction companies. This was also a
search for companies with JV experience. The questionnaire is shown in Appendix 1 has several items which were used as a preliminary study acting as the basis for a general understanding of the construction JVs particularly at the international level. The responses to these items are also presented in this chapter.

The second set was to identify companies from the 76 companies registered in the National Contractors Group - December 1990 directory which have JV experience with other European partners. The questionnaire was written just in one page for convenience to the respondents. This is shown in Appendix 2.

The third set of the questionnaires was prepared for the structured interview on the companies with JV experience with other European partners. This represents the data for final analysis of this study. The questionnaire is shown in Appendix 3.

6.3 : The Responses

The responses from the three sets of questionnaires are to be described to provide an understanding of the JVs. The responses to the questionnaires are presented in the following sections.
6.3.1 : Responses on the first survey

The responses to the first set of questionnaires are as follows:

Total Number of Companies sent = 370
(These were selected from Jordan's Britain's Top 500 Construction Companies
Those involved with supplies of materials and plants and equipments, and the NCG Contractors were excluded).

Total questionnaires returned = 88
Percentage Returned = 23.8 %

From the 88 companies responded the breakdown is as follows:

Companies with any kind of JV experience = 44 (50.0% of total responded)

Companies without any JV experience = 44 (50.0% of total responded)

Total 88

The response rate with JV experience, i.e. 44 out of 370 = 12%, was very low. But from the total questionnaires returned was quite high, i.e. 50%. There were also 50% of the companies responded which have no JV experience at all.
This low response rate with only a few companies which had JV experience had given a thought that this could be due to the wrong population of the sample taken. Since this study is intended to have a sample from companies that have International JV experience, the focus should be on larger companies, and this would be from the National Contractors Group (NCG) which have been excluded from the first survey.

6.3.2 : Responses on the second survey

In order to find out from the companies registered with the NCG, a short one page questionnaire (refer to Appendix 2) were sent to the 76 NCG companies. The responses were as follows:

The responses to the second survey questionnaire :

Total number of companies = 76
Total number usable returned = 36
Percentage returned = 47.4 %

The breakdown of the questionnaires returned :

Number of companies with JV experience with other European partners = 11 (30.6% of total returned)

Number of companies without JV experience with other European partners and other foreign partners = 25 (69.4% of total returned)
From the second set of mailed questionnaire survey, 11 out of 36 returned were with JV experience with other European partners. This is only 30.6% of those responded and representing only 14.5% of the whole NCG companies. These 11 companies that had JV experience with other European partners also indicate other JV experience with other foreign partners. There are 23 companies in the NCG directory that had overseas work. This indicates few NCG companies participated in international works, so there must be much fewer for JVs. This search has made clear that there has been very few construction companies pursuing international JVs particularly with other EC partners.

6.3.3 : Responses on the third survey (Interviews)

The third round of collecting data was by means of structured interviews. These interviews were conducted on the 11 companies that had JV experience with other European partners (from the second survey) together with another 4 participants from the first survey. The 4 participants were those from the 44 companies that had JV experience which had responded from the first survey. The other 40 companies, were either had experience JVs with other UK Contractors (majority of them were involved in domestic JVs) or JVs with partners from outside Europe. This was done by telephone calls to the companies and specific contact with the persons who had responded in the first survey. Therefore, the total
number of participants available for the interviews was 15 (i.e. 11+4).

From the interviews only 8 relevant cases with the JV experience were identified for this study. Five cases were actually JVs which were not with other European partners as required by this study. The participants had misunderstood the need of this study, but the meetings were used to discuss the companies' experiences in their JVs. The points made from these discussions were noted for use in this study where relevance. The other two companies were not willing to be interviewed and stopped participating for their own reasons. Despite several requests for participation to add to the few companies participating, these two companies were still unwilling to participate. Finally, the only cases left for this study were the 8 companies which are described later in this chapter. The identities of these companies are kept as confidential as promised.

6.4 : Questionnaire items of preliminary survey

The items in the questionnaires of the first survey contained some preliminary understanding about Construction JVs. Questionnaire items of the second survey were very minimal. The interview questionnaire represents the main data for this study but some data are presented in this chapter for background information of the cases before presenting the data analysis in chapter 7.
6.4.1 : Questionnaire items of first survey

From the 44 companies that had JV experience, 42 were involved in domestic JVs, i.e. no foreign partner involved. Two companies had no domestic JV experience. From the 44 companies there were also 18 companies involved in International JVs. This means that 16 out of these 18 companies had both domestic and international JV experiences. The total of 44 companies are used in understanding the JV backgrounds as follows:

6.4.1.1 : The nature of business

The nature of construction project undertaken by the companies were noted in order to provide a background information of their nature of business. Each company had undertaken more than one type of project. The ticks are added together and they are ranked from the highest at the top to the lowest at the bottom in the list below: (Only the top 4 nature of business are listed)

The ranking of the companies' business nature:

1. Residential Developer
2. Civil Engineering Contractor
3. Commercial Buildings Contractor
4. Industrial Buildings Contractor

Residential developer seems to be the highest form of business in joint venturing. This is mainly the consequence
of the majority of the companies with domestic JVs. Civil Engineering works is the next highest, then followed by commercial buildings and industrial buildings.

6.4.1.2: Number of JVs participated to-date

<table>
<thead>
<tr>
<th>Less than 4 JVs</th>
<th>18</th>
<th>(40.9%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 to 6 JVs</td>
<td>14</td>
<td>(31.8%)</td>
</tr>
<tr>
<td>More than 6 JVs</td>
<td>12</td>
<td>(27.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

Only about 27% had more than 6 JVs. Nearly half had less than 4 JVs, and about 32% with 4 to 6 JVs. Generally speaking, there is still no outstanding participation in JVs by these companies except for the few that had more than 6 JVs.

6.4.1.3: The period the companies had JVs

<table>
<thead>
<tr>
<th>Period</th>
<th>No. of JVs</th>
<th>(Percentage of all JVs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970s</td>
<td>18</td>
<td>(40.9% of 44 companies)</td>
</tr>
<tr>
<td>1980s</td>
<td>38</td>
<td>(86.4% of 44 companies)</td>
</tr>
<tr>
<td>1990s</td>
<td>42</td>
<td>(95.5% of 44 companies)</td>
</tr>
</tbody>
</table>

The trend seems to increase from the 1970s to the 1990s. This rising trend indicates the changing attitude towards JVs in the Construction Industry.
6.4.1.4 : The JV Objectives

From the objectives listed, the participants' ratings are ranked as follows:

1. Profitability
2. Co-operation
3. Quality of work
4. Project completion time

The main objective of profitability is not denied but co-operation is emphasised as a stronger objective than quality of work and project completion time. Therefore, JV is accepted strongly as a co-operative venture which regards any aspect of the co-operation as the next important objective besides profitability.

6.4.1.5 : Reasons for JV

The sum of all the ratings of the items of all the participants are ranked as follows:

1. New market opportunity
2. Sharing of risks
3. Financial requirements
4. Economy of scale
5. Competitive advantage
6. Skill and expertise requirements
7. Market share
8. Knowledge/Experience
9. Technology transfer
10. Sharing resources
11. Co-ordination of works
By having new market opportunity as the main reason for JV, the UK Contractors seem to be in a common perception towards diversifying their markets. Sharing of risks tend to be an important reason in joint venturing as well as financial requirements of the projects and economy of scale. Competitive advantage, skill and expertise requirements, market share and knowledge and experience requirements seem to be moderately ranked. While technology transfer, sharing of resources and co-ordination of works are the lowest ranked reasons for construction JVs.

These perceptions were made by mixed JV participants, i.e. combinations of the international and domestic JV participants. Therefore, this is taken as a general view about construction JV as a whole. However, the new market opportunities can be both locally and overseas and, therefore, the possibility of international JV can be considered as an important venture in new market strategy.

6.4.1.6 : Main JV partners

The main partners that the JVs which these companies had participated with are ranked as follows:

1. General Contractors (54% with foreign partners)
2. Specialist contractors (25% with foreign partners)
3. Clients (9% with foreign partners)
4. Consultants (10% with foreign partners)
5. Housing developers (None with foreign partner)
6. Suppliers (33% with foreign partners)
The main JV partners were the general contractors, followed by specialist contractors, clients, consultants, housing developers and suppliers. The partnerships with other general contractors also indicates a high proportion with foreign partners. There is an indication that most international JVs were with general contractors. Though the least partnership forms were with suppliers, however, one-third of these partnerships were with foreign partners. The majority of the JVs with specialist contractors were domestic JVs and the same for the JVs with clients and consultants. Housing development seems to have only domestic JVs.

6.4.1.7 : Success criteria for JVs

There are a variety of success criteria for JVs but there are six potential problem areas which would affect the success of the JVs. The general areas given were rated by the participants and the ratings were added together and ranked in order of importance as follows:

1. Mutual understanding
2. Decision-making process
3. Joint agreement
4. Partners' culture
5. Communication
6. Organisation structure
Mutual understanding is the main thing considered as important to the success of a JV. Without mutual understanding a JV cannot work. Decision-making is another critical area for success. Joint agreement is crucial and it is to be carefully negotiated and agreed because it becomes the blueprint of the partnership in the JV. This comes after the two criteria above were satisfied. There is no JV established when there is bound to be no mutual understanding and when the decision-making process is moving towards greater anticipation for deadlocks.

The partners' cultural differences must be known and adjusted, communication must be smooth and open between the partners and finally the implementation must be well structured and balanced. This sequence of placing the criteria is a step-by-step procedure rather than having a sequence of ranking importance as shown above. They are all important and the participants merely ordered them in sequence of operation. This is a more justifiable order of the participants' perceptions of the success criteria.

6.4.1.8 : Summary on the preliminary survey

The objective of this survey in providing a search for appropriate companies to participate in this study of international JVs is somewhat limited by the small sample size. The response rate of 26% on the first survey is low
since less than one-third responded but this is not anomalous for such research. Out of this, 50% had any kind of JV experience, which represents 12% of the total number of companies addressed. This small representation is further reduced because of the needs of this study, i.e. European JVs where the partnership is focused between the UK contractors with other EC partners.

The probability of having a small participation rate was anticipated. The need to focus on exactly similar JV projects, for "like with like" comparative purposes, was not possible to achieve with the small sample obtained. As discussed, every effort was made to increase the size of the sample but with little success. Therefore, the lesson learnt is that data collection in the Construction Industry in future research needs to be reviewed and a different approach should be tried particularly in this kind of study.

The perceptions about JVs by the participants who had experience in JV, indicates the positive attitude toward JVs. Their experience is an opening to this study particularly in understanding the nature of their JVs, the reasons for JVs and the criteria for success. Since the general approach to JV were known to be encouraging, this study could provide further empirical knowledge of construction international JVs.
6.5 : Data from the interviews

There are several data collected from the interviews which need to be described in this chapter in order to provide an understanding about the JVs used for the main analysis of this study. This section is concerned with highlighting the main features and other useful information about the JVs. This includes the backgrounds of the companies which participated in this study, the main reasons for JVs and other information about the projects. Some questionnaire items are also presented whenever necessary to give a clearer picture about the JVs.

6.5.1 : The JV cases

This study analyses 8 cases which are the only relevant cases that are found from the attempts made in searching the companies from the two main sources as mentioned earlier in this chapter. These cases were all based on 50-50 share and they were partnerships between two companies. This can be described as in table 6.1.

The 8 cases were different from one another in several features such as project type, project size, partners and so on as shown in table 6.1. Therefore, it would be difficult to make certain types of comparison when the cases are not of the same type. However, it was found and will be shown in
the results in chapter 7, that these external influences did not have significant effects on the performance of the JVs. The most important facts influencing the JV performance were internal central issues associated with the interactions involved in the structure, organisation and team characteristics of all the JVs.

Table 6.1: The Eight JV cases in the main study

<table>
<thead>
<tr>
<th>Case No</th>
<th>Project Type</th>
<th>Contract Sum</th>
<th>Year Started</th>
<th>Year Completed</th>
<th>The Client</th>
<th>Tendered or Negotiated</th>
<th>JV Partner</th>
<th>Partner's Business</th>
<th>Project Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Factory</td>
<td>£10 mil</td>
<td>1991</td>
<td>1992</td>
<td>Private</td>
<td>Tendered</td>
<td>German Contractor</td>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sewer</td>
<td>£9 mil</td>
<td>1991</td>
<td>1993</td>
<td>Private</td>
<td>Negotiated</td>
<td>French Specialist Contractor</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Bridge</td>
<td>£12 mil</td>
<td>1988</td>
<td>1990</td>
<td>Public</td>
<td>Tendered</td>
<td>Danish Contractor</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Office</td>
<td>£6 mil</td>
<td>1991</td>
<td>1993</td>
<td>Public</td>
<td>Tendered</td>
<td>Spanish Designer</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Bridge</td>
<td>£300 mil</td>
<td>1992</td>
<td>1996</td>
<td>Public</td>
<td>Tendered</td>
<td>French Designer</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Residential</td>
<td>£1.5 mil</td>
<td>1989</td>
<td>1993</td>
<td>Private</td>
<td>Negotiated</td>
<td>Spanish Contractor</td>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Basement Car Park</td>
<td>£4 mil</td>
<td>1989</td>
<td>1991</td>
<td>Private</td>
<td>Negotiated</td>
<td>Italian Specialist Contractor</td>
<td>UK</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Leisure Complex</td>
<td>£58 mil</td>
<td>1988</td>
<td>1989</td>
<td>Private</td>
<td>Negotiated</td>
<td>French Contractor</td>
<td>UK</td>
<td></td>
</tr>
</tbody>
</table>

* Case no 5 was a current project due for completion in 1996

The participants selected for the interviews were the key informants who had been the key persons with the knowledge and involvement in the JV cases. They had to be the most reliable persons before they were selected for this study so that the most reliable perceptions could be achieved. The participants were as in table 6.2.
Table 6.2: The Participants interviewed

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Position held in the JV</th>
<th>No. of Years working in Construction</th>
<th>No. of JVs involved</th>
<th>No. of JVs with other European before this case</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Director</td>
<td>30</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Director</td>
<td>16</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Director</td>
<td>40</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Senior Executive</td>
<td>27</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Director</td>
<td>26</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Director</td>
<td>35</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Director</td>
<td>20</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Manager</td>
<td>30</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

The participants were mostly JV directors except for cases no. 4 and 8 who were the Senior executive and a manager respectively. Their number of years working in construction indicates long experience in construction but mostly with less than 10 JVs involved to-date, except for case number 7 which had experience of 11 JVs as at the date of interview.

Unfortunately, only two companies out of 8 that had ever been participating in JV with other European partner before the case mentioned. This means that they had no experience working with other European companies as JV partners, except for cases number 2 and 7. Both these companies were involved in on-going JVs with the same partners.
All these participants were the key decision-makers for the JV cases studied. They sat in the JV board and were involved in the management of the JV project. This point was clearly stressed when making their selection for the interviews because the reliability of the study depends on their position as well as participation in managing the JV project.

6.5.2: The Reasons for Joint Ventures

The reasons for JVs were varied and many. No one JV had the same reason for JV. In the general literature JV is considered as a way to win in the highly competitive business environment. By JV in such an environment enables a company to co-operate with a competitor and become stronger in the market that it is intended to operate. This is possible in construction and sometimes it is even encouraged by the clients because by JV the client is expecting to benefit by increasing value for money.

This is usually in the form of a JV between the main contractor and the services contractor who normally acts as a nominated sub-contractor. This is a typical case for domestic JV. There are other combinations of partnerships being adopted for the domestic JVs mainly in the light of benefiting the client especially in improving the co-ordination of works and eventually the client's budget.
The need to JV at international level involving a partnership with foreign partner has other reasons than co-ordination of works. This had been revealed by the preliminary study that co-ordination of works is not a main reason for JV. Co-ordination of work in construction is inevitable. The partners need to tackle this problem by having the structure of their JVs aimed at satisfying the common objectives set for the co-operation.

The objectives in construction are very clear and it is always the profitability, quality of work, completion on time and within the client's budget. But there is another important objective which the normal single contractor project does not have, that is the co-operative objectives of the JV partnership. This has been emphasised earlier in the preliminary study shown above (refer 6.4.1 (4)) which placed co-operation immediately after profitability.

There are several reasons for JV. The reasons for construction JVs is for co-operation rather than competition. The companies do not form a JV to compete with each other though they are normally competitors. Hence, by joint venture the partners co-operate to win a project through competitive advantage with other competitors. There are indications that those JVs that were formed for competitive advantage were also needed to share the risk of the projects. Other reasons are shown in table 6.3.
Table 6.3: The Reasons for JV

<table>
<thead>
<tr>
<th>Case No.</th>
<th>The reasons for JV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
</tr>
</tbody>
</table>

The Reasons for JV:

1. Due to large project
2. Planned Expansion and Growth
3. Was offered to participate
4. Government Regulation
5. Share Project Risk
6. Gain Funding
7. Competitive Advantage
8. Planned Long-term Relationship
9. Known the Partner before JV
10. Language purpose

The Rating Scale:

1 = Strongly Disagree
2 = Generally Disagree
3 = Moderately Disagree
4 = Moderately Agree
5 = Generally Agree
6 = Strongly Agree
From table 6.3, the perceived large project size which affected the decision to JV only relevant to cases no. 2, 3, 5 and 8. This is an important information because those four cases, to a greater extent, had to co-operate to contribute to the large project. These JVs might have been in great need for sharing in expertise and resources. This is also reflected in the high ratings for sharing project risk and competitive advantage in columns 5 and 7 respectively. The contract sums for the four cases are shown in table 6.1. The perceptions were relative to the company's size. Case no.1 was bigger in project size than case no.2 but the participant for case no.1 did not consider size of the project as an important reason for the JV.

There should be different reasons for JV other than project size by the other four cases. For case no.1, there were strong disagreements on all reasons affecting the project but had strong agreements on the planned company's expansion and growth and planned long-term relationship (refer columns 2 and 8 for case no.1). The level of knowing the partner before the JV was only moderately low for this case. Due to the location of the project, i.e. in Germany, language was moderately agreed by the participant in case no. 1. Case no.6 had a similar reasons for JV as case no. 1 and also located outside UK, i.e. in Spain. This UK Contractor was offered to participate in the JV in Spain with the partner whom the participant had responded as strongly agree in knowing before the JV. The need for language was also high.
For case no. 4, the government of Spain was the client for the project. The UK contractor was participating in a JV with a Spanish Designer. The contract documents were in Spanish. This UK Contractor was in such a difficult position in this project, but it was the nature of the project. An embassy building was the project. It was not regarded as a large project and it was not for a planned company's expansion and growth. The UK Contractor was offered to participate in this JV. There were moderate agreements by the participant on sharing of risk and competitive advantage indicating a moderate need of sharing in relation to the project as well as the planned long-term relationship. The need for language was generally agreed.

For case no. 7, the participant was stressing on planned expansion and growth and planned long-term relationship. The sharing of risk and competitive advantage were generally agreed and moderately agreed respectively. Language was no problem. Therefore, for this case there was a greater emphasis on the relationship as well as the concern for the risk of the project.

In general, the reasons for JV depend upon the size of the project and there are indications that the emphasis on the partners' relationships are stronger than the sharing of project risk. This is reflected in the total figure of column 8 in table 6.3 which represents "Planned long-term relationship". This is the highest reason for JV. This
concerned for the long-term relationship is a motivator that should not be taken for granted in a study of joint venture. This is the primary purpose of this study.

6.5.3: Risks of JV Relationship

JV is often regarded as a risky business. It is risky because of the shared management and control. Personal friction and political expediency can occur. This is the main risk that has to be faced by the participants. Trust of each other is a very important anticipation by the partners at the earlier stage for greater confidence in their teamwork as partners. When the participants were asked some questions relating to this kind of risk, it should be able to differentiate the cases in terms of the way this kind of risks were being perceived.

Table 6.4: The JV Risks and Uncertainties

<table>
<thead>
<tr>
<th>THE RISK AND UNCERTAINTIES</th>
<th>partner's sincerity and honesty</th>
<th>as normal phenomena</th>
<th>to be resolved as and when they arose</th>
<th>reduced by informality</th>
<th>made it difficult to reach the JV Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case No.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
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</tbody>
</table>

1=Strongly Disagree; 2=Generally Disagree; 3=Moderately Disagree; 4=Moderately Agree; 5=Generally Agree; 6=Strongly Agree
The operational problems can be viewed through the partner's attitudes or they can simply be treated as a normal phenomena in the same way as in a project undertaken by a single contractor. The problems can be treated flexibly by resolving them as and when difficulties arose. Alternatively, they can be dealt with informally whenever necessary in order to gain a harmonised functional relationship between the partners. Anticipation in facing the difficulties in reaching consensus between the partners right from the very beginning is necessary. This format was how the risks and uncertainties were presented to the participants. Their responses are presented in table 6.4 above.

There would be high expectation in JVs of the risks and uncertainties from the partner's sincerity and honesty, but these cases had very low agreement on that statement except for case no.1. Case no.1 was a JV between the UK Contractor with a German partner which had this view perceived it as generally high. All cases agreed that the risks and uncertainties were project-related problems rather than the JV problem. Only case no.2 perceived it as moderately high, and two cases, i.e cases no.3 and 4, perceived as generally high, and the rest very strongly agreed.

The flexibility in handling the risks and uncertainties seem to have mixed responses. Cases no.2 and 5 both agreed strongly that this was practised. Cases 3, 4 and 6
moderately agreed. Two cases moderately disagreed (cases no.1 and 8) and case no.7 generally disagreed.

Did the participants have consensus on informality as a way of reducing the risks and uncertainties? This too had mixed responses. Informality between partners can be a way to gain confidence and tolerance. Only cases no.3 and 4 agreed. Cases no.1, 5, 6 and 8 strongly disagreed and cases no.2 and 7 moderately disagreed.

The JV respondents were disagreed in general about having been affected by risks and uncertainties. Case no.1 moderately agreed. Case no.4 moderately disagreed. Cases no.3 and 8 generally disagreed. Cases no.2, 5, 6, 7 strongly disagreed. Disagreements by the participants in general seem to produce the consensus that when reaching the agreement, risks and uncertainties were not considered as a threat. Thus, in general, the 8 cases were quite close in agreements that risks and uncertainties were not partners' related issues and they did not consider the various statements in table 6.4 as serious elements of risks and uncertainties. In other words, partners' interaction were not considered as risks and uncertainties by most of the participants except in case no.1 which indicated slightly high caution with the partnership.

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6.5.4 : The JV Needs

The JV needs are derived from the ratings on the ten items of needs and these were rated by the participants on each of the seven JV management tasks such as Design, Project Planning, Financial Control, Material Control, Plant Control, Site Operation Control and General Administration. These were added together and then averaged out for each item of each case. The average figure for each item and for each case is presented in Table 6.5.

Table 6.5: The JV Needs

<table>
<thead>
<tr>
<th>The Needs</th>
<th>Case Number</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th>Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7  8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1  Need for Expert</td>
<td>4  5  5  5  5  5  5  4</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Expenditure Control</td>
<td>3  4  3  5  4  5  4  2</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Teamwork</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4  Progress Control</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>5  Staff Training</td>
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<td></td>
</tr>
<tr>
<td>6  Managing risks &amp; Uncertainties</td>
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<td>35</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7  Quality Control</td>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>8  Managing Conflict</td>
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<td></td>
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</tr>
<tr>
<td>9  Bilingual Staff</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10 Organisational Rules</td>
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<tr>
<td>Total</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = Very Low; 2 = Generally Low; 3 = Moderately Low; 4 = Moderately High; 5 = Generally High; 6 = Very High

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The total for the JV needs can be listed in order of importance as follows:

1. Need for expert
2. Quality Control
3. Managing Risks and Uncertainties
4. Teamwork
   - Progress Control
5. Organisational Rules
6. Expenditure Control
7. Bilingual staff
8. Managing Conflict
9. Staff training

The JV needs seem to be related more to the project needs and less to the interaction needs such as teamwork, bilingual and managing conflict. This indicates that the JV needs are more concerned with the project. The total needs of the cases vary between one another as shown in the table. This is in the range between 33 and 46 which are quite close together indicating almost similar strengths of JV needs.

6.5.5. : Future JVs

The participants were asked to rate from 1 (as Strongly not preferred) to 6 (as strongly preferred) on the 12 EC countries as partners for future JVs including the UK itself. The ratings are presented in table 6.6.
### Table 6.6: Preference by the UK Contractors for Future JVs with Other EC partners (including with other UK Partner)

<table>
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<th>Case No.</th>
<th>THE EC COUNTRIES</th>
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<tr>
<td>6</td>
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<tr>
<td>7</td>
<td>1 5 3 4 5 3 5 1 1 3 1 5</td>
</tr>
<tr>
<td>8</td>
<td>4 3 5 5 2 2 1 1 1 1 6 6</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>25 27 39 35 34 28 22 28 22 19 29 44</td>
</tr>
</tbody>
</table>

1 = Strongly Not Preferred, 2 = Generally Not Preferred, 3 = Moderately Not Preferred, 4 = Moderately Preferred, 5 = Generally Preferred, 6 = Strongly Preferred

**The EC Countries:**

1 = Belgium  
2 = France  
3 = Spain  
4 = Portugal  
5 = Germany  
6 = Holland  
7 = Italy  
8 = Denmark  
9 = Luxembourg  
10 = Greece  
11 = Rep. of Ireland  
12 = United Kingdom

Apart from the UK itself, strong preference for EC partners by the participants are from the countries such as Spain followed by Portugal, Germany, Holland and Denmark, France, Rep. of Ireland, Belgium, Italy and Luxembourg and the least preferred was Greece. Looking at this general preference...
Portugal and Holland seem to have quite high preference by the participants but there was no existing JV case found from the search for JVs by this study.

From the cases mentioned in this study by the participants, the future JVs with the same partners can be confirmed by looking at the rating given to the partner's country. This is shown in Table 6.7.

Table 6.7: The perceptions of the Future JVs by the UK Partners

<table>
<thead>
<tr>
<th>Case No.</th>
<th>The EC Partner's Origin</th>
<th>The rating for future JVs in the EC partner's country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Germany</td>
<td>Strongly Preferred</td>
</tr>
<tr>
<td>2</td>
<td>France</td>
<td>Moderately Preferred</td>
</tr>
<tr>
<td>3</td>
<td>Denmark</td>
<td>Strongly Preferred</td>
</tr>
<tr>
<td>4</td>
<td>Spain</td>
<td>Strongly Preferred</td>
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<tr>
<td>5</td>
<td>France</td>
<td>Generally Not Preferred</td>
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<tr>
<td>6</td>
<td>Spain</td>
<td>Moderately Preferred</td>
</tr>
<tr>
<td>7</td>
<td>Italy</td>
<td>Generally Preferred</td>
</tr>
<tr>
<td>8</td>
<td>France</td>
<td>Moderately Not Preferred</td>
</tr>
</tbody>
</table>

This indicates that not all UK Contractors that had experience JV with the particular EC partner would prefer to have the same JV with the same partner in the partner's country. From Table 6.7 above only 3 cases have strong preference to do so, i.e. cases no.1, 3 and 4. Case no.7 is the only one which generally preferred to do so. Cases no.2 and 6 have moderate preference. Case no.8 has moderately not preferred to do so while case no.5 generally not preferred.
to so. This is quite low in preference to JV for case no.5 in the partner’s country even when the JV was still running at the initial stage of the construction work. Generally, only cases no.5 and 8 do not prefer to have future JVs in the partner’s country.
CHAPTER 7

DATA ANALYSIS
CHAPTER 7

DATA ANALYSIS

7.1: Introduction

This chapter presents the data analysis. The data sets are mainly those that are formed according to the framework as shown in figure 4.1. The primary objective of this study is to investigate the success and failure of JVs in construction projects involving the UK contractors with other European partners in terms of structure, organisation and team. Since it is difficult to define and undertake the concepts of success and failure together in a study, as discussed in chapter 4, the degree of success is the measure used. This is a scale which defines a particular level of success from very high to very low, so as to be able to identify the JV cases into different levels of success. This enables comparative analysis between the JVs to be made.

The ten goals selected and described in chapter 4 were used as the basis for measuring success. This is due to the need to standardise the measure of success for construction JV projects, and to recognise an assumption that the common objectives between the partners in construction JVs, are to achieve both the project goals and the relationship goals. The overall success of a JV must be seen in the light of satisfying both these goals.
If a JV project is completed while only satisfying the project goals and not the relationship goals or vice versa, it can claim that there is a degree of success depending upon which is highly aimed for but there would not be a claim for an overall success. To some companies "as long as we make money and the partners are satisfied we are happy with the JV ". This a popular remark given by the participants which indicate that profitability is the main measure of success among all the measures used. Therefore, the sum of all the measures would indicate their relative strengths in JV performance as a whole.

Once the cases are arranged in order of the levels of success, comparative analysis between structure, organisation and team can be made such that these variables can be associated with the levels of success attained. Thus, the question such as: what are the patterns that the structure, organisation, and team of the JVs have in relation to the levels of success? If there is such a clear pattern that can be strongly concluded, then it is an indication that there is a strong pattern of relationship for International Construction JV that is appropriate for prospective successful implementation in the context of UK Contractors with other EC partners. If there is no pattern of structure, organisation and team that correlates strongly with the pattern of success, then a question is raised. The discussion on the associations of the patterns is presented in the next chapter. The data sets for each variable, the
levels of success for structure, organisation and team will be analysed. This is the main aim of this chapter.

7.2: The Success of Construction Joint Ventures

The success of JVs is viewed as the degree of success in attaining goals. A list of 10 goals was used as the measures of JV goals. The 10 goals were arranged in pairs which becomes, \( n(n-1)/2 \), i.e. \( n = 10 \) goals, 45 pairs altogether. The approach used in this study is a multi-attribute model (Rosenberg, 1956) which, in its simplest form, is represented by the aggregate of the relative importance of each goal.

The 45 pairs of goals consisted of the 10 goals which were paired one with another that produced 9 times for each goal to the pairs. A pair was assigned with points on the basis of their relative importance. A total of 10 points was allocated to a pair and the respondents split the points on the basis of their relative importance to the JV. The ten goals as described in chapter 4 are listed below:

1. Complete on Time & Within budget
2. Satisfactory Profit
3. Maximising Profit
4. Return on Investment
5. Quality of Work
6. Build Partnership
7. Technology Transfer
8. Integrated Culture and Practice
9. Teamwork
10. Effective Management
The points of the goals are aggregated and the sum of each goal can be used as the index for the JV goals. The total points assigned are shown in the table 7.1.

**Table 7.1 : Total Points Assigned for the JV Goals**

<table>
<thead>
<tr>
<th>Case</th>
<th>Goal1</th>
<th>Goal2</th>
<th>Goal3</th>
<th>Goal4</th>
<th>Goal5</th>
<th>Goal6</th>
<th>Goal7</th>
<th>Goal8</th>
<th>Goal9</th>
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</table>

In table 7.1, the points assigned by the respondents on the importance of each goal are shown. These are the aggregate of the points. The totals of the goals across the cases indicate their relative strength to the JVs. The importance of the ten goals to the JVs can be ranked as follows:

1. Goal 2 : Satisfactory Profit
2. Goal 3 : Maximising Profit
3. Goal 1 : Complete on time & within budget
4. Goal 4 : Return on Investment
5. Goal 5 : Quality of work
6. Goal 10 : Effective Management
7. Goal 9 : Teamwork
8. Goal 6 : Build Partnership
9. Goal 8 : Integrated culture & practice
10. Goal 7 : Technology transfer
The total points are then transformed to a scale of 5 points similar to the scale of the goal attainment. This is done by making a scale from minimum point of 0 to the maximum point of 90, i.e. the minimum possible score on a goal by each participant is equal to zero and the maximum possible score on each goal by a participant is 90. 90 divided by 5 = 18, so each distance from one point to another on the scale is 18. This is the scale rating of the goals, i.e. 1=Very Low to 5=Very High. The equivalent ratings are tabulated as shown in table 7.2.

Table 7.2 : Transformed points to ratings for the JV Goals

<table>
<thead>
<tr>
<th>Case</th>
<th>Goal1</th>
<th>Goal2</th>
<th>Goal3</th>
<th>Goal4</th>
<th>Goal5</th>
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<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

The level of success is derived from the notion "outcome minus expectation". The greater the difference the higher the level of success. The expectations are the goals that have been worked out above. The outcomes are the attainment of the goals. These are rated directly by the participants on a 5-point scale indicating 1=Very Low Success and 5=Very High Success. The responses are shown in table 7.3.
### Table 7.3: Responses for the JV Goal Attainments

<table>
<thead>
<tr>
<th>Case</th>
<th>Goal1</th>
<th>Goal2</th>
<th>Goal3</th>
<th>Goal4</th>
<th>Goal5</th>
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</tr>
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<td>3</td>
<td>4</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
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</tr>
<tr>
<td>7</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>

The goal attainments for all the JVs seem to be the highest in goal9 (Teamwork) and goal10 (Effective Management). These are shown from the TOTAL in table 7.3. The lowest attainment is in goal8 (Integrated culture and practice). The TOTAL for each case indicates a pattern of goal attainments with case no.1 as the most successful to case no.8 as the least successful in goal attainments.

The difference between "outcomes and expectations" are calculated (figures in table 7.3 minus the corresponding figures in table 7.2) and tabulated as in table 7.4.

### Table 7.4: The Difference between "Outcomes and Expectations"

<table>
<thead>
<tr>
<th>Case</th>
<th>Goal1</th>
<th>Goal2</th>
<th>Goal3</th>
<th>Goal4</th>
<th>Goal5</th>
<th>Goal6</th>
<th>Goal7</th>
<th>Goal8</th>
<th>Goal9</th>
<th>Goal10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
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</tr>
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<td>-1</td>
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<td>1</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>-2</td>
<td>-1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 7.1: The chart of the differences between outcomes and expectations of the JVs

<table>
<thead>
<tr>
<th>Case No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>+1</td>
<td>+1</td>
<td>+2</td>
<td>+2</td>
<td>+1</td>
<td>+1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>-1</td>
<td>-1</td>
<td>0</td>
<td>+1</td>
<td>+2</td>
<td>+2</td>
<td>+1</td>
<td>+1</td>
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<tr>
<td>7</td>
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<td>+1</td>
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<td>+1</td>
</tr>
<tr>
<td>8</td>
<td>+2</td>
<td>+1</td>
<td>+1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>+1</td>
<td>+1</td>
<td>+1</td>
</tr>
</tbody>
</table>
The differences between outcomes and expectations as shown in table 7.4 can be drawn for each of the 8 cases so that the pattern can be viewed as a chart. This is shown in figure 7.1.

The differences are drawn on a scale case by case which allows the pattern of success to be visualised more clearly. This arrangement of the cases in order of success as shown by the pattern in figure 7.1, is to be checked with the sums of the overall goal attainments, and the rating on the overall performance as perceived by the participants. These are shown in table 7.5 and the cases are in order of the level of success.

Table 7.5: The Order of Success of the JV cases corresponding to Goal Attainments and the overall performance

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Goal Attainments (From table 7.3)</th>
<th>Rating of the Overall Performance (Refer Questionnaire in Appendix 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>3</td>
</tr>
</tbody>
</table>

The rating scale of the overall performance:

1=Very Low; 2=Low; 3=Moderate; 4=High; 5=Very High.
The arrangement of the 8 cases is to be maintained in the order shown in the tables above which indicate their different levels of success. This is confirmed by the correlation between the rating of the overall performance and the sum of the goal attainment, i.e. the Spearman correlation coefficient= .9184, significance level= .001. This strong correlation indicates the strong associations on the level of success as perceived by the participants. This can also be checked from the chart in figure 7.1.

In figure 7.1 the levels of success of the first four cases do not have any negative differences between "outcomes and expectations". Their positive differences are getting less and less from the first case to case number four. This is an order of success arranged systematically to indicate their differences based on the perceptions of the participants.

Case no.5 is a current JV which is due to be completed in 1996. At the time of the study, the project had been running for about one year which was at an early stage. However, the perception of this participant has been taken to consider his view upon the success of the JV project at that time. Of course, there would not be confirmation of profitability as shown by the case in figure 7.1, but other aspects of the goals are quite optimistic and positive. For cases no. 6 to 8, negative differences between "outcomes and expectations" occurred, which indicated that though the JVs were considered as successful, there were dissatisfactions, mainly on profitability.
For other goals, the case were indifferent which could mean that they were indifferent on these goals with regard to their performance or simply that they were just happy with whatever they had achieved. There are still about 3 to 4 patches (in figure 7.1) of positive differences between outcomes and expectations, mainly on the co-operation goals. Therefore, with the differences between outcomes and expectations, together with the sums of the goals and the rating of the overall performance and their correlation, the level of success arranged in this order is consistent and to be used as a pattern of JV success for this study.

The correlations of the attainments of the individual goals and the overall performance is shown in table 7.6.

<table>
<thead>
<tr>
<th>The Goals</th>
<th>Spearman Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complete on Time &amp; Within Budget</td>
<td>0.1104</td>
<td>0.795</td>
</tr>
<tr>
<td>2. Earn Satisfactory Profit</td>
<td>0.5758</td>
<td>0.135</td>
</tr>
<tr>
<td>3. Maximising Profit</td>
<td>0.5428</td>
<td>0.086 *</td>
</tr>
<tr>
<td>4. Return on Investments</td>
<td>0.9316</td>
<td>0.001 ***</td>
</tr>
<tr>
<td>5. Quality of Work</td>
<td>0.4743</td>
<td>0.235</td>
</tr>
<tr>
<td>6. Build Partnership</td>
<td>0.4872</td>
<td>0.221</td>
</tr>
<tr>
<td>7. Technology Transfer</td>
<td>0.3637</td>
<td>0.376</td>
</tr>
<tr>
<td>8. Integrated culture &amp; Practices</td>
<td>0.4398</td>
<td>0.276</td>
</tr>
<tr>
<td>9. Teamwork</td>
<td>0.4183</td>
<td>0.302</td>
</tr>
<tr>
<td>10. Effective Management</td>
<td>(Correlation cannot be computed)</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.10
*** p < 0.01
The correlations shown in table 7.6 are used to check the consistency of the participants' perceptions on their achievements of the JVs. The individual goal attainments were computed using the Spearman Correlation with the ratings of the overall performance. Referring to table 7.3, the ratings by the participants on each goal were correlated with the ratings on the JV overall performance (shown in table 7.5). The correlation coefficients and the level of significance are shown in table 7.6.

Strong correlations of goal attainment with overall performance are significant on "Maximising Profit" and "Return on Investment". However, "Return on Investment" is significant at .001 level and maximising profit at .10 level. This means that the respondents associated strongly the overall performance with these 2 goals. The patterns in figure 7.1 is consistent with this. This indication can be checked against the differences between outcomes and expectations for both goals, i.e. Maximising profit and Return on Investment, on the chart in figure 7.1 which also indicates a consistent pattern.

Surprisingly, "completion on time and within budget" shows the lowest correlation with the overall performance. A project's schedule does not seem to be a critical goal for the JVs. The respondents related the overall performance not so much with time of completion. This could be due to the greater number of the private sector projects than the
Public sector projects of the cases studied (refer table 6.1). The private sector project is more flexible in terms of the completion time because the private client's satisfaction is often difficult to fulfil without having to slow down at certain times.

7.3 Structure:

Structure is defined in this study in terms of the intentions and motives of the partners to get involved in the JV. The involvement can be either "voluntary" or "necessity". The voluntary involvement is concerned with planned intention to co-operate, which is the result of a high level of friendship between partners, and to complement each others' expertise or resource contributions for the undertaking of a larger or more complex construction projects in a joint venture to achieve synergistic gains.

Necessity inter-dependence is the result of the need for one another to co-operate in a JV partnership, when working alone is not possible because of either the requirement of the government of the host country or other project-specific requirements such as technology or competition. The necessity structure tends to be differentiated, while the voluntary structure tends to be integrated when considering the nature of the relationship structures of the partners.
This may not necessarily be so because interactions in the JV relationships rely on the nature of the task and the skill of the partners.

It is believed that the structure of co-operation in construction must be based on skill and resources, which is the main characteristic of the nature of the construction activity and its technological needs. By using skill and resources as the basis of structuring the JV co-operation between the partners, it reflects the nature of work and the risks involved. Competition can be a motivating force to JV but complementarity is essential because in construction the output is unitary, i.e. to accomplish a project together.

The only means of JV in the Construction Industry that can be done such as in the manufacturing and marketing relationships or the production of different but complementary products such as the computer hardware and the software, is when dealing with the JV between the producer of a construction product, such as a building or a bridge, with another company who operates them and who is not involved in the construction work itself. This seems to be feasible on a large-scale project involving a long-term strategy. To divide the JVs into a structural category is very difficult when there are various motives and strategies that are being used in adopting JVs in the Construction Industry.
The focus of this study is mainly on the question: "In what fashion were the JVs formed and in what way the partners work together?" This question is the primary concern of this study. It needs to be analysed based on the implementation of the JV. However, in Construction, the need to JV is basically a short-term project.

Despite having 50-50 equity share, which means equality in profit and liability, the cases for this study had their JVs formed with contract agreements which were agreed by the partners to undertake a JV for a specific project. This is due to the duration of the project and the need to JV based on the requirement of the project. The willingness to JV on a longer term basis, such as in the formation of a JV as a corporate entity, is difficult in construction.

The market uncertainty and the varied nature of project needs may require a variety of suitable partners. A long-term commitment in JV with the same partner means that they are very certain of the long-term need for one another. However, there are two cases in this study that have on-going JVs with the same partner. They are cases no. 2 and 7 (refer table 6.1 and the organisational charts in Appendix 4). Both are specialised contractors whose works may be repeated on other projects which are of the same nature. They are the pipe specialist contractor (range of small to large pipe installations) and the building water-proofing specialist, respectively. So, these specialisation skills are required and needed in whatever environmental and
project situations which is justified in the on-going JVs that they involved in. This reflects market and project certainty, hence, a certainty for a partnership in a long-term JV.

The manner a JV is formed indicates the way that the partners wish to interact in the JV. That is, do they work together on the basis of autonomous groups or a unitary organisation. The reason for forming the JV relationship is mainly the structure which is to be investigated but with small sample size and the multiplicity of motives in structuring the JVs there is no specified category that can be used as a standard JV structure.

Despite this fact, this study interestingly identified two categories of structure of relationships, i.e. to work as one unit (referred to as an integrated relationship) or to work separately (referred to as differentiated relationship). There is similarity with the term "the degree of requisite integration" referred to by March and Simon (1958), i.e. "whether task characteristics make it possible for sub-systems in an organisation to operate independently of each other, or require continual collaboration in making decisions before a given sub-system may act?".

The explanations to be given on the duration of any construction JV is an emphasis on the nature of the structure of the construction JVs. This is necessary to highlight their backgrounds toward the formation of the JVs,
with particular attention to the two structural categories mentioned above. This is first tabulated such that the main differences can be clearly seen between the cases, then followed by the analysis.

Table 7.7: The basis of interaction in Joint Venture

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Perceived size of Project</th>
<th>Planned JV</th>
<th>Competitive Advantage</th>
<th>Risk-sharing</th>
<th>Degree of knowing your partner</th>
<th>Offered to JV</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Small</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>ML</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
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<td>Yes</td>
<td>Yes</td>
<td>GH</td>
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<tr>
<td>3</td>
<td>Large</td>
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</tr>
<tr>
<td>4</td>
<td>Small</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>VH</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Large</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>VH</td>
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<tr>
<td>6</td>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>VH</td>
<td>Yes</td>
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<tr>
<td>7</td>
<td>Small</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>VH</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>Large</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>ML</td>
<td>No</td>
</tr>
</tbody>
</table>

1=Very Low (VL); 2=Generally Low (GL); 3=Moderately Low (ML); 4=Moderately High (MH); 5=Generally High (GH); 6=Very High (VH)

The data in table 7.7 is a replication of the same items in table 6.3. Instead of using the rating scores, table 7.7 presents the data in a categorical form, i.e. 1 to 3 = "NO" and 4 to 6 = "YES". Similarly for project size where the ratings are converted to "SMALL" and "LARGE" categories. The rating scale presented in table 7.7 is a conversion from the 6-point scale of the participants' agreements, i.e. from 1=strongly agree to 6= strongly disagree. By having the categorical data and the high and low rating scale, it would be easier to visualise and compare the cases. Other structural elements of the JVs are shown in table 7.8.
Table 7.8: The Partners’ Contributions and Interactions to the JV

<table>
<thead>
<tr>
<th>Case No.</th>
<th>The Shared Contributions</th>
<th>Total Shared Contributions</th>
<th>Total to Max. Ratio*</th>
<th>Structure of Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>0.83</td>
</tr>
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<td>2</td>
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<td>0.58</td>
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<td>0.33</td>
</tr>
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<td>4</td>
<td>2</td>
<td>6</td>
<td>0.50</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0.33</td>
</tr>
</tbody>
</table>

* Total to Max. Ratio is the Total Shared contributions divided by 12 which is the maximum score of 6+6.

The shared contributions of expertise and resources are the rated differences between the ratings on the contributions of the partners to "expertise" and "resources". The ratings are based on the ordinal scale 1 to 6 (1=Very Low, to 6=Very High). The differences between the ratings between the partners are then rated using the transformed scale as shown in table 7.9. The shared contributions of "Expertise and Resources" in table 7.8 are the transformed figures taken from the perceptions of the UK Contractors on the attributes of each partner of the JVs.
Another concern for co-operation is the degree of the partner's relationship before forming the JV. How well they have known each other, not just as a friend but also as business counterpart. It is believed that to know someone very well before a JV, could give more confidence in the partnership. Partner's selection is very important prior to establishing a JV. It depends on several criteria but this only applies to those who had to opt for JV to undertake a particular project, otherwise a company chooses to JV with a partner with whom there is already a long-standing relationship and considers working together in a JV as more beneficial for both partners.

The view on the structure of JV by Necessity or Voluntary categorisation is derived from the situation the parent companies were in before entering into a JV but not the
structure of making the JV works. The objective of studying the JV implementation must be viewed on the structure that is relevant to the partners' interactions, i.e. how to operate it together?

Cases 1 and 3, for example, had low degrees of knowledge of each other but they were high in the level of success, whereas cases no.6 and 7 were very high in the degree of knowledge of the partner but the level of success were low among the 8 cases, and there are cases with, "high in knowledge of the partner and high in success", or "low in knowledge of the partner with low in success". When the JVs were planned, there was no indication that the degree of knowledge of the partners were high. This means that a JV can be planned even with a partner who is not known very well, initially. Firstly, the relationship must be initiated and geared towards mutual understanding, and then the JV can be formed and the relationship sustained.

When a JV was planned there must have been interactions going on between the partners before forming the JV. But when the JV was not well planned such as in cases 3, 4 & 8, they (the participants) could either have been given an offer to participate in a JV for a particular project, or vice versa. The former is true with cases 3 and 4 and the latter is the case for case no.8. Whether planned or not there is no clear influence on the JV success.
The competitive advantage and sharing of risks are associated as shown in table 7.8, but after checking, no clear link with the pattern of success could be identified. There are two cases (1 & 6) which said 'NO' to competitive advantage and risk-sharing as the reason for the JVs. Both these cases were projects in the EC partners' countries. The rest were in the UK including the on-going project, i.e. case no.5. This shows that the UK Contractors considered entering into JVs with other European partners outside the UK even when competition and risks were not influential. However, of course, there were both competition and risk in all the UK JV projects.

The perceived size of the project by the participants has no significant correlation with the level of success, also neither did the actual size of the project. These factors which have just been mentioned are the situational environments which influence, to some extent, the behaviour of the partnerships in operationalising the JVs. The nature of interaction is the main the concern in the concept of structure in this study.

The interaction of the JVs appeared to be distinct by way of either integrated or differentiated as mentioned earlier and they are related to the cases as shown in table 7.8 above. The differentiated interaction motive depends on the skill and expertise of the different and complementary nature,
such as Design and Construction. This is quite a straight-forward relationship which does not affect the partners' individual entity and autonomy. The integrated motive depends on the need of the partners to be engaged in a much closer interaction for the purpose of co-ordination and control. This is a more complex relationship since the divisions between the roles of the partners can easily become mixed up and any imbalanced situation could lead to conflict and dispute between the partners. Any partnership that has had a close relationship might fall into the trap of taking it for granted, and later blamed on the partnership. In fact, failure may arise if the emphasis on the structure was neglected where the relationship is allowed to grow unchecked.

There are indications that planned JVs, for example cases no. 5, 6 and 7 (with low level of success), are suspected of having taken for granted their interactions between partners. This is because the degree of knowledge of the partners were reported as "very high", but resulted in low success. This indicates that the relationships that these UK contractors had with their partners were not very satisfactory though they had known their partners very well initially.

The initial intentions (rated by the all the participants as "strongly agree") to have a long-term relationship were not subsequently fulfilled. For the highly successful JVs such
as cases 1 and 2, their planned JV turned out to be a great success. However, there was no further JV with the same partner for case no.1. Case no.2 was an on-going JV. The degree of knowledge of the partners was "moderately low" for case 1, and "generally high" for case 2. The degree of knowledge of the partners in the planned JVs would appear to have a negative correlation with the level of success achieved.

The term "Planned" is meant to be that the partners had negotiated and mutually agreed a plan to JV after a sufficient amount of time and thought had been given to it. In other words, "Planned JVs" were not taken for granted or entered into without giving much thought to their problems and processes. The partners could just agree on the basic contractual agreements and proceed with a JV purely on a simple arrangement without giving serious consideration to the details of their intended interactions. As long as they performed their duties with regard to the agreement, the JV was considered successful. This is a typical contractual relationship. The dynamics of interaction were often under-estimated.

These dynamics needed further analysis into the organisation of the JV in order to be able to identify further characteristics of the JVs that might be associated with the level of success. For the purpose of analysing structure for the implementation of the JV, the degree of interactions desired, whether integrated or differentiated JVs, should be the basis of the analysis.
The relationships of the integrated and differentiated structures and the pattern of success of all the JVs were analysed. Table 7.10 selects only cases with the integrated structure of interaction.

### Table 7.10: The Integrated Structures

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Structure of Interaction</th>
<th>Total Shared Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Integrated</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Integrated</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Integrated</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Integrated</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Integrated</td>
<td>4</td>
</tr>
</tbody>
</table>

When considering the integrated cases, i.e. cases no. 1, 3, 6, 7 and 8, and the shared contributions shown, these indicate that there is generally a declining pattern corresponding to their success levels. The minor exception is case no. 7 which has a slightly higher level of sharing than case no. 6. This seems to indicate that the lesser the shared contribution in the integrated structure, the more it tends to be related to a lower level of success.

Low shared contributions of expertise and resources (as the data represented) tended to create an imbalanced structure of integration in the JV and this would appear to have a corresponding implication for the level of success. An imbalanced situation in this analysis is interpreted
specifically as the sharing of expertise and resources as shown in table 7.8.

The differentiated structure JVs are shown in table 7.11. There are only 3 cases in the differentiated category, i.e. cases no. 2, 4 and 5, and these are shown in the following table.

**Table 7.11: The differentiated structures**

<table>
<thead>
<tr>
<th>Case No.</th>
<th>UK Partner's Roles</th>
<th>EC Partner's Roles</th>
<th>Total Shared Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Management</td>
<td>Construction</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Construction &amp; Management</td>
<td>Design</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Construction &amp; Management</td>
<td>Design</td>
<td>7</td>
</tr>
</tbody>
</table>

In any JV, the managing of the project is not completely one partner's sole responsibility. A 50-50 JV, as agreed by all the cases, showed that there would be equal sharing of profit and liability. So, there is a need for the partners to become involved in managing the project even when the JV structure is differentiated, i.e. the partners have separate roles such as design and construction. From the table 7.11 above, all the other EC partners were not management oriented. However, the shared management is mainly discussed in the team analysis later in this chapter.
The differentiated JVs were mostly in the higher success group among the 8 cases, with case no. 5 being the lowest among the three cases. However, case no.5 was an on-going project, so the final performance was not yet known at the time of the study. The tendency to differentiate is when the project is large and the specialisations of the partners are different and their purpose of co-operating in the JV is specifically to "play their own roles" rather than sharing the roles. These truly applied to cases 2 and 5 but case no.4 had a different motive.

Though the project for case no.4 was small and located in the UK, the project involved the foreign government (the client) who required this project to be given to the local contractor (i.e. UK Contractor). The design consultant of the client's origin, who happened to know this local contractor very well, was the partner for this JV. Though this designer was acting as a partner to the UK Contractor, he was also acting as a consultant to the client. Therefore, "authority" was affected in their relationships. This is a clear example of a "necessity" JV.

The total shared contributions of the three cases do not follow the pattern of success and their differences in the level of sharing are small. Furthermore, this kind of structure is not so critical in relation to the structure of interaction at the operation level due to the fact that their co-operation relied on role specialisation rather
than role-sharing. Consequently, it can be inferred that the decision-making at the JV boards would be tough.

7.3.1: Sharing of Professional skills

The degree of sharing of professional skill was useful in investigating the interaction between partners. The participants were required to rate the professional skill demand of their partners and their own, based on a rating scale of 1 to 6 (where 1=Very Low and 6=Very High). These were based on the demands of the 7 management tasks as shown in table 7.12.

Table 7.12: The sharing of Professional Skills

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design</th>
<th>Planning</th>
<th>Financial</th>
<th>Material</th>
<th>Plant</th>
<th>Site</th>
<th>General</th>
<th>TOTAL</th>
<th>DIFFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0 0</td>
<td>5 2</td>
<td>4 3</td>
<td>2 5</td>
<td>2 5</td>
<td>4 4</td>
<td>5 2</td>
<td>22 21</td>
<td>+1</td>
</tr>
<tr>
<td>2</td>
<td>5 1</td>
<td>6 3</td>
<td>6 3</td>
<td>6 1</td>
<td>6 1</td>
<td>6 1</td>
<td>6 4</td>
<td>41 14</td>
<td>+27</td>
</tr>
<tr>
<td>3</td>
<td>0 0</td>
<td>3 5</td>
<td>3 5</td>
<td>4 4</td>
<td>4 4</td>
<td>3 5</td>
<td>5 4</td>
<td>23 25</td>
<td>-2</td>
</tr>
<tr>
<td>4</td>
<td>3 4</td>
<td>5 1</td>
<td>5 3</td>
<td>5 3</td>
<td>5 3</td>
<td>4 4</td>
<td>4 4</td>
<td>31 22</td>
<td>+9</td>
</tr>
<tr>
<td>5</td>
<td>1 6</td>
<td>5 3</td>
<td>5 2</td>
<td>6 1</td>
<td>5 3</td>
<td>6 1</td>
<td>5 2</td>
<td>33 18</td>
<td>+15</td>
</tr>
<tr>
<td>6</td>
<td>4 5</td>
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<td>4 5</td>
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<td>5 4</td>
<td>6 5</td>
<td>33 31</td>
<td>+2</td>
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<tr>
<td>7</td>
<td>3 5</td>
<td>6 3</td>
<td>5 3</td>
<td>6 2</td>
<td>3 5</td>
<td>6 5</td>
<td>6 3</td>
<td>35 26</td>
<td>+9</td>
</tr>
<tr>
<td>8</td>
<td>0 0</td>
<td>5 4</td>
<td>4 6</td>
<td>4 4</td>
<td>4 2</td>
<td>4 6</td>
<td>3 5</td>
<td>24 27</td>
<td>-3</td>
</tr>
</tbody>
</table>

The positive (+) difference indicates the UK partner's skill is greater than the EC partner and negative (-) difference indicates the reverse.

In table 7.12, the sharing of professional skills in the seven management tasks are shown where each task has the ratings for both partners. The "TOTAL" column, is the sum of
all the ratings of "UK" (for the UK Contractor) and "P" (for the EC partner). The sums indicate that the differentiated JVs (cases no. 2 and 5) have high differences (the last column) between the sum for the "UK" and the "P". For cases no. 1, 3, 6 and 8 where the differences between the sums of the ratings between the UK Contractors and the partners are low (ranging between 1 to 3). Cases no. 4 and 7 are quite high (both with 9 differences between the "UK" and the "P").

For case no. 7, the JV was intended to be integrated, but the provision of professional skills tended to be heavier on the UK Contractor. This is an imbalanced situation which could be the reason for low success. Cases no. 2 and 5 seem to indicate high differences because these cases were differentiated structures, which obviously did not require high sharing of skills.

For case no. 4, though this was a differentiated JV, the difference in the sharing of professional skills was not as great as for cases no. 2 and 5. This may be due to the greater sharing required for this JV where the partner (being a client's consultant) took a great interest in the management of the project. However, the difference is much greater than for cases no. 1, 3, 6 and 8. The contribution of skill by the UK contractor in case no. 7 is still relatively high. In other words, the sharing of skills in management tasks was low in an integrated JV and high in a differentiated JV. This did not indicate a correlation with the level of success.
Among the 8 cases, cases no. 3 and 8 appeared to have the EC partners' professional skills greater than the UK partners'. This could be a point of disappointment for these participants, especially case no.8. This is, of course, another imbalance situation in the sharing of professional skills. Though the difference is not so great, but it was sufficient to affect the satisfaction of the partners in their relationships in the JV, especially when it was structured as an integrated 50-50 JV. Case no.8 is the lowest in the level of success compared to the other seven cases.

For case no.3, the imbalance did not appear to affect the JV performance. This could be due to the nature of the partnership where the dynamics of interaction was specifically within the management of the JV itself. The construction operation was undertaken by another contractor who was not part of the JV partnership. In other words, the interactions of the partners were within the same role of management which is a sensible way for a JV. The purpose of achieving common objectives can easily be fulfilled in such a JV.

These differences in the level of sharing in the professional skill can be useful in identifying the degree of sharing in skill and to compare against the level of success. Therefore, it can be concluded at this point that the integrated and differentiated structures do tend to vary in the degree of interactions. The more the interaction is
desired to be integrated, the greater the level of shared skills in managing the JVs. However, there is no indication of such interaction being associated with the pattern of success.

7.3.2 : Distribution of work

By asking the participants to illustrate the organisational chart of the JVs being discussed, the emphasis seemed to be based on either the differentiated role specialisation such as cases 2, 4 and 5, or the integrated roles such as cases no. 1, 3, 6, 7 and 8. The organisational charts were either highly mixed or separate specialised functions (refer to Appendix 4 for the illustration of the organisational charts of 7 cases; case no. 6 did not provide the chart because of the repetitive and simple nature of organisation of the residential project).

The highly mixed type did not consider skill and expertise as a division between partners such as cases no. 3 and 8. These cases considered their JVs as fully integrated at all levels. For case no. 3, it was a JV mainly to manage a project. The construction work was done by a sub-contractor who was not part of the JV team. The interaction was limited to managing the JV.
Case no. 8 also had a fully integrated JV at all levels. The sharing between partners in terms of the distribution of work was not based on skills and expertise. Instead, as much as possible, they wanted to mix together in a close interaction and considered themselves as a unitary organisation. This seemed not to work very effectively because the actual interaction was imbalanced.

Case no. 1 was also considered by the participant as a fully integrated JV but the interaction structure was balanced. The arena of their interaction was within managing a factory project. This type of project also has less complexity. Therefore, it makes interaction much easier.

Cases no. 6 and 7 were both having specific specialisation functions between the partners, and the management of the JVs were highly shared. These JVs were intended to emphasise the interactions at the management functions, as much as possible, and at the same time managing their own specialised functions. The approach adopted by the JVs, where the partners had known each other very well, such as case no. 6, or the JV was part of an on-going JV such as case no. 7. Both of these cases indicated a relatively low level of success.

Thus, the structure of interaction depended on the relationship between partners and the nature of the project. Fully integrated is a term most commonly used by the contractors but the meaning is unclear and diverse. To some
contractors, it is referred to as the overall JV roles and responsibilities reflecting on competency, while to another, the contributions of the partners reflected on their commitments to the JV. However, this study did not investigate deeper into the partners' competences and commitments.

The outcomes in the JV interactions can be reflected from the various organisational factors. The effectiveness of the organisation would be linked with the level of success.

7.4: Organisation

The term "organisation" is concerned with the process rather than the strategic conceptual level. The study on interaction of the partners in JV organisation can be achieved by looking into the actual situation of the organisation which is considered in an operational sense, as consisting of the co-ordinated activities of people directed towards some common objectives. The term "people" is the subject of interaction in this study. However, the performance that needs to be measured usually affects both the overt and the covert. The emphasis in this study is to investigate as much as possible at the overt and less on the covert so that the purpose of exploratory comparative purposes, in a wider overt performances, can be understood before an in-depth study of the JVs can be made.
A balance in organisation is the main emphasis of joint venture partners. Despite the common purpose, objective and goal in adopting a JV, the partners must be willing and able to contribute actively towards the purpose and also to ensure that the communications between the "people" function effectively. By forming the JV it is, to some extent, a willingness to co-operate, but to be able to co-operate depends on not just what arrangements have been made, but also on how balanced an arrangement was made with regard to contributing activity.

Since a 50-50 JV stresses equality, particularly in profitability and liability, the question arises to that the equality might have on the interactions of partners? The organisational variables that are used in this investigation are focused on the following: sharing of personnel, JV autonomy, decision-making process, power resources, and communication. These variables are susceptible to a high level of interactions within the JV organisations.

7.4.1 : The Sharing of personnel.

The interaction between the personnel of the different origins could be a nuisance because of the different values and practices of their different cultural backgrounds. It is not the intention of this study to investigate into a more specialised subject of cultural phenomena, but to
Investigate a belief that equality in a JV should be, to an extent, that the number of personnel shared must be low to avoid friction in interaction, especially at the executive level where skill and expertise and a decision-making process are heavily involved. The high sharing in the number of executive staff could create problems to the interactions, especially at the management level. Table 7.13 indicates the ratings on the proportion of the executive staff mainly in the management tasks.

### Table 7.13: The proportion of the Shared Executive Staff.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design Control</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Control</th>
<th>General Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
</tr>
<tr>
<td>1</td>
<td>0 0</td>
<td>1.0 0</td>
<td>0.8 0.2</td>
<td>0 0</td>
<td>0 0</td>
<td>0.5 0.5</td>
<td>0.8 0.2</td>
</tr>
<tr>
<td>2</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
</tr>
<tr>
<td>3</td>
<td>0 0</td>
<td>0.4 0.6</td>
<td>0.5 0.5</td>
<td>0.5 0.5</td>
<td>0.4 0.6</td>
<td>0.3 0.7</td>
<td>0.5 0.5</td>
</tr>
<tr>
<td>4</td>
<td>0 1.0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
<td>1.0 0</td>
</tr>
<tr>
<td>5</td>
<td>0 1.0</td>
<td>0.9 0.1</td>
<td>0.7 0.3</td>
<td>0.7 0.3</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
</tr>
<tr>
<td>6</td>
<td>0.5 0.5</td>
<td>0.5 0.5</td>
<td>0.5 0.5</td>
<td>0 1.0</td>
<td>1.0 0</td>
<td>0.3 0.7</td>
<td>0.5 0.5</td>
</tr>
<tr>
<td>7</td>
<td>0.4 0.6</td>
<td>0.6 0.4</td>
<td>0.7 0.3</td>
<td>0.9 0.1</td>
<td>0.2 0.8</td>
<td>0.6 0.4</td>
<td>0.8 0.2</td>
</tr>
<tr>
<td>8</td>
<td>0 0</td>
<td>0.5 0.5</td>
<td>0.5 0.5</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
<td>0.6 0.4</td>
</tr>
</tbody>
</table>

Note: 0 - 1.0 represents 0 to 100%; and 0 represents NOT APPLICABLE to the JV.

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The proportions on the executive staff will be transformed into a scale with a rating of 1 to 6 which indicates the degree of sharing between the partners in each task. The degree of sharing is obtained by taking the proportions of the staff's origins. The rating scale is shown in table 7.14.

**Table 7.14: The Degree of sharing**

<table>
<thead>
<tr>
<th>The proportion</th>
<th>The Rating Scale</th>
<th>The Degree of Sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 0</td>
<td>(Not Applicable to the partnership)</td>
<td></td>
</tr>
<tr>
<td>1.0 - 0</td>
<td>1.0</td>
<td>Very Low or No Sharing</td>
</tr>
<tr>
<td>0.9 - 0.1</td>
<td>2.0</td>
<td>Generally Low</td>
</tr>
<tr>
<td>0.8 - 0.2</td>
<td>3.0</td>
<td>Moderately Low</td>
</tr>
<tr>
<td>0.7 - 0.3</td>
<td>4.0</td>
<td>Moderately High</td>
</tr>
<tr>
<td>0.6 - 0.4</td>
<td>5.0</td>
<td>Generally High</td>
</tr>
<tr>
<td>0.5 - 0.5</td>
<td>6.0</td>
<td>Very High/ Equally shared</td>
</tr>
</tbody>
</table>

From table 7.13 the proportions are then converted to the shared executive staff as shown in table 7.15 using the rating scale in table 7.14.
The sharing of the executive staff indicated by table 7.15 does not seem to follow the pattern of success. However, the lower success cases, such as cases no. 6, 7 and 8, tend to have higher executive staff sharing than the higher success cases. Case no.3 has the highest shared executive personnel among the 8 cases. This case is in the "high success" group. So the association between the degree of shared executive personnel and the degree of success is not strong. Since the measure of sharing, as in the tables above, is basically on the tasks of management, it is obvious that case no. 3 would score the highest compared to the other cases because this JV was involved mainly in JV management and could be considered to be somewhat anomalous.

The approach of JV for case no. 3 (where it was formed mainly for managing a project while the actual construction activity was sub-contracted) seemed to be highly successful, despite the fact that the sharing of the executive staff is
very high. This is the reversed of the cases no. 6, 7 and 8. These 3 cases were having a fully integrated JV at all levels, i.e. from the management level right down to the production level.

For case no.1, the sharing was moderately low (average rating of 3.25) and the level of success is relatively high and this is a case with fully integrated management and production, just like cases 6, 7 and 8. For cases 2, 4 and 5 (all were differentiated JVs), the degree of sharing in executive staff were all generally low, indicating that the sharing of personnel in management of the project were not so much as for the cases with the integrated interactive structure. This indicates that the sharing of executive staff in managing a JV depends on the interactive structure of the JV. However, there is a tendency that the integrated JV structure to have a problem with interaction affecting the success of the JV.

Another data set used in the analysis of the sharing of personnel is the level of supporting staff. The supporting staff were those involved in the particular task as assistants to the executive staff and who were not responsible and accountable to the decision-making and authority structure of the task in the overall organisation. Similar analyses to that of the executive staff are shown in the following tables.
Table 7.16: The proportion of the Supporting Staff shared.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Control</th>
<th>General Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td>UK P</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0 0</td>
<td>0.5 0.5</td>
<td>0.2 0.8</td>
<td>0.2 0.8</td>
<td>0.8 0.2</td>
<td>0.2 0.8</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0 0</td>
<td>0.4 0.6</td>
<td>0.7 0.3</td>
<td>0.6 0.4</td>
<td>0.4 0.6</td>
<td>0.5 0.5</td>
<td>0.7 0.3</td>
</tr>
<tr>
<td>4</td>
<td>0.4 0.6</td>
<td>0.8 0.2</td>
<td>0.7 0.3</td>
<td>0.7 0.3</td>
<td>0.7 0.3</td>
<td>1.0 0</td>
<td>0.5 0.5</td>
</tr>
<tr>
<td>5</td>
<td>0 1.0</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
</tr>
<tr>
<td>6</td>
<td>0.3 0.7</td>
<td>0 1.0</td>
<td>0.9 0.1</td>
<td>0.1 0.1</td>
<td>0.1 0.2</td>
<td>0.8 0.5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>0.3 0.7</td>
<td>0.9 0.1</td>
<td>0.9 0.1</td>
<td>0.8 0.2</td>
<td>0.3 0.7</td>
<td>0.8 0.2</td>
<td>0.8 0.2</td>
</tr>
<tr>
<td>8</td>
<td>0 0</td>
<td>0.7 0.3</td>
<td>0.6 0.4</td>
<td>1.0 0</td>
<td>1.0 0</td>
<td>0.7 0.3</td>
<td>0.8 0.2</td>
</tr>
</tbody>
</table>

Note: 0 - 1.0 represents 0 to 100%; 0 represents NOT APPLICABLE to the JV

The same rating scale as in table 7.14 is used to convert the proportions of the supporting staff shown in table 7.16 into the degree of sharing for supporting staff shown in table 7.17.

Table 7.17: The Shared supporting staff.

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Control</th>
<th>General Administration</th>
<th>TOTAL</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>6.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>21</td>
<td>3.50</td>
</tr>
<tr>
<td>2</td>
<td>1.0</td>
<td>1.0</td>
<td>6.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>12</td>
<td>1.71</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>5.0</td>
<td>4.0</td>
<td>5.0</td>
<td>6.0</td>
<td>4.0</td>
<td>6.0</td>
<td>29</td>
<td>4.83</td>
</tr>
<tr>
<td>4</td>
<td>5.0</td>
<td>3.0</td>
<td>4.0</td>
<td>4.0</td>
<td>1.0</td>
<td>6.0</td>
<td>6.0</td>
<td>27</td>
<td>3.88</td>
</tr>
<tr>
<td>5</td>
<td>1.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>13</td>
<td>1.66</td>
</tr>
<tr>
<td>6</td>
<td>4.0</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>3.0</td>
<td>6.0</td>
<td>6.0</td>
<td>18</td>
<td>2.57</td>
</tr>
<tr>
<td>7</td>
<td>4.0</td>
<td>2.0</td>
<td>2.0</td>
<td>3.0</td>
<td>4.0</td>
<td>3.0</td>
<td>3.0</td>
<td>21</td>
<td>3.00</td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>4.0</td>
<td>5.0</td>
<td>1.0</td>
<td>1.0</td>
<td>4.0</td>
<td>3.0</td>
<td>18</td>
<td>3.00</td>
</tr>
</tbody>
</table>
The sharing of supporting staff indicates an opposite situation to the sharing of the executive staff. The high success of the integrated JVs, such as cases no. 1 and 3, have relatively high sharing in supporting staff as compared to the lower success cases such as cases no. 6, 7 and 8. Although the success pattern and the degree of sharing of the supporting staff among the 5 integrated JVs are not correlated, the division between the group in the higher success level and the lower success level as mentioned earlier, do indicate a relative pattern of success and the degree of sharing in the supporting staff. However, the differences in the average ratings as in table 7.17 are not so wide for all the integrated JVs.

The degree of sharing in the differentiated JVs tend to be low on the supporting staff, except for case no. 4 which shows a greater sharing involved. This is due to the fact that this JV was between the UK Contractor with a Design Consultant who was also acting on behalf of the client, the Spanish government. Therefore, this partner provided supporting staff in maintaining the JV interaction desired, so that the practice which are basically Spanish, would be liaised with the UK Contractor without much difficulty. This is a situation whereby the UK Contractor needed such supporting staff from the partner who would provide guidance and assistance in operating the contract which was mainly in Spanish.
However, the success level is relatively moderate. For case no. 2, the sharing was low and this is to confirm that this case is a differentiated interaction JV where the sharing of personnel is low both in the executive and supporting staff. The same applies to case no. 5.

The conclusion that can be made from the sharing of personnel in the differentiated and the integrated JV is that the differentiated JV requires little sharing as much as possible but in the integrated JV the need for sharing is high. Though the need for sharing of personnel is low in the differentiated structure of interaction, the success levels do indicate a difference when the degree of sharing in personnel is increased such as the difference between case no. 2 and case no. 4 in the sharing of the supporting staff.

However, in the integrated interaction pattern, the sharing in the executive staff tends to be relatively low for the high success JVs. The situation is reversed in the degree of sharing in the supporting staff with the pattern of success in the integrated JVs.

7.4.2 : JV Autonomy

The JV autonomy is useful to the interaction pattern as far as the inter-dependence between the JV organisation and the parent companies are concerned. The independence of the JV organisation from parents is necessary to avoid
unanticipated influences which could be detrimental to the interaction between the partners involved within the JV itself. The conflict between parents should be avoided. When the participants were asked about the JV autonomy most of the responses were mixed.

This was done as ordinal variables with the rating scale 1 to 6, where 1 as strongly disagree and 6 as strongly agree. The statements given were: "The JV Autonomy was given to the JV Management Board" and "Parents companies had voices in this JV". The participants responded as in table 7.18.

Table 7.18: The ratings of JV Autonomy

<table>
<thead>
<tr>
<th>Case No.</th>
<th>The Autonomy Given</th>
<th>Parents' voices in the JV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
Cases no. 1, 5 and 8 have clear autonomy given to the JV without any interference from the parents. Cases No. 2, 3, 4 and 6 perceived the JV autonomy as similar to the parents voice in the JV. The parents involvement in the JVs were inevitable because of the small size of parent companies. Case no.7 was saying that less autonomy was given to the JV organisation and a high parent involvement. In other words, the level of autonomy given to the JV shown in the table can be accepted to represent the indicator for JV autonomy. The parents' voices existed due to their companies sizes.

In term of project size, the cases no. 5 and 8 were the two largest projects amounting £300 million and £58 million respectively. Cases no.1 and 3 were medium in size, i.e. £10 million and £12 million respectively, and the remaining cases were small size projects, i.e. less than £10 million. The size categories mentioned above is the author's own description of the projects within this study. These are presented in table 7.19.

As shown in table 7.18, the JVs that had high parents' voices tended to be smaller size projects. The parents were directly involved in the JV because the same people who owned the parent companies were represented in the JV board. As a result of this understanding about the meaning of the participants' responses to the two statements above, the first statement can be accepted as level of autonomy given to the JV. The degree of JV autonomy obtained is shown in table 7.19.
<table>
<thead>
<tr>
<th>Case No.</th>
<th>Contract Sum of JV Project</th>
<th>The Degree of JV Autonomy (1=Very Low to 6=Very High)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>£10 mil.</td>
<td>Very High</td>
</tr>
<tr>
<td>2</td>
<td>£9 mil.</td>
<td>Very High</td>
</tr>
<tr>
<td>3</td>
<td>£12 mil.</td>
<td>Moderately High</td>
</tr>
<tr>
<td>4</td>
<td>£6 mil.</td>
<td>Generally High</td>
</tr>
<tr>
<td>5</td>
<td>£300 mil.</td>
<td>Very High</td>
</tr>
<tr>
<td>6</td>
<td>£1.5 mil.</td>
<td>Very High</td>
</tr>
<tr>
<td>7</td>
<td>£4 mil.</td>
<td>Generally Low</td>
</tr>
<tr>
<td>8</td>
<td>£58 mil.</td>
<td>Very High</td>
</tr>
</tbody>
</table>

From this table there is no indication of the relationship between the degree of JV autonomy and the pattern of success. Most of the cases were with high autonomy except for case no. 7. For cases no. 3 and 5, the JV autonomy was moderately high and generally high respectively, due to the level of parents' involvements.

Case no.7 had the lowest level of JV autonomy. Referring to table 7.18, it can be seen that this case is the only one that has a high rating on the "parents' voices" and a low rating on the "JV autonomy".
This indicates that this case had the owners of the parent companies involved in the JV. The project was only £4 million, hence, parents' involvement in the JV were possible. However, the smallest project, i.e. case no.6, had a very high JV autonomy. This case involved a residential project which this UK partner had indicated that most of the construction work was undertaken by the Spanish partner. The project was located in Spain.

This UK partner was not contributing much to the actual construction work. The nature of a housing project often involved simple management task due to the repetitive nature of its operations. The main contribution of the UK partner was financial. This could be the reason which led the participant to perceive the JV autonomy as high. However, this exercise of joint venturing did not indicate a highly successful outcome.

7.4.3 Decision-Making Process

Decision-making process is usually regarded as an important element in any organisational study. Interaction of the JV partners' decision-making process is to be assessed based on the participants' perceptions of the effectiveness of their interactions in decision-making. In order to seek consistency in the participants' perceptions, five statements were used to measure this. These statements
used the scale of 1 to 6 which is from strongly disagree to strongly agree respectively. These are presented in table 7.20. The aim of this data is to provide an insight into how the cases performed in term of interactions in decision-making process of the JVs.

Firstly, the participants agreed strongly that "all problems were resolved in the JV Management Board" except for cases no. 3 and 7 which both rated it as "generally agree". This question is important to identify whether the decision-making process was centralised or not. If the decision-making process was not centralised, there would be a tendency that the interaction between partners in the decision-making process not to exist. Since all the partners were involved in the decision-making process mainly at the JV Management Board, the interaction is crucial. The other four statements are shown in table 7.20.

Table 7.20: The Elements of interaction in the decision-making process

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Flexibility in decision-making</th>
<th>Respect the decisions</th>
<th>Burden in sharing decisions</th>
<th>Need for Lead Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

260
In table 7.20, the four variables used as the measure of interactions in the decision-making process can be divided into two main elements, i.e. positive and negative elements. "Flexibility" and "Respect" are in the positive element group and the other two variables, "burden in sharing decisions" and "need for lead partner" are negative elements of the interactions.

These four variables are the consequences of the interactions in the decision-making process as perceived by the participants. The "need for lead partner" to solve decisions is the consequence of the interactions as learned by the participants, i.e. the ideal need that has been realised after the JVs by the participants rather than the actual need before the JV started. This is considered as negative element of interaction because the need for a lead partner is a way of reducing the tense of interaction, but if it was implemented to the JV right from the beginning, then the situation could have been different.

When the "sharing of decision was a burden" and the "need for lead partner" was strongly agreed, it is a reflection of an unsatisfactory situation in the interaction. On the other hand, if the sharing of decision-making was a burden and the need for a lead partner in decision-making is perceived as not necessary, it reflects that the sharing was acceptable and the interaction in the decision-making process was also acceptable to the participant. The fact that shared
decision-making was not a burden and the participant agreed strongly to having a lead partner, may indicate that the JV was either a differentiated role structure (where sharing is limited), or the nature of the decision-making was not very critical such that having a lead partner is justified. These are revealed by the participants and the ratings are shown in table 7.20.

The burden of sharing decisions could be high when there is a horizontal integration which means that the partners are of the same level of professionalism and status. This would occur in the co-ordination of the differentiated JVs as well as in the integrated JVs. If there is no sign of this emphasis, there should be some degree of vertical integration which is an interaction based on having a lead partner in the decision-making process.

In table 7.20, the positive elements are the flexibility in decision-making and the respect of the partners upon their shared decisions. Flexibility and respect on the decisions are positive attitudes in interactions and these attitudes are used to weigh against the negative attitudes. By adding together the positive elements and then the negative elements and work out their differences would provide simple indicators of the cases in terms of the effectiveness of the interaction in the decision-making process. The differences obtained are shown in table 7.21.
### Table 7.21: The indicators of Interaction in Decision-Making Process

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Total Positive Elements</th>
<th>Total Negative Elements</th>
<th>The Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>11</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

The differences in the positive and negative elements of the interactions in the decision-making process of the cases indicate positive attitude of the participants. The higher the positive difference reflects a greater interaction effectiveness. This generally associates with the level of success for the cases in the integrated interaction structure (i.e. cases no. 1, 3, 6, 7 and 8). For the differentiated interaction structure (i.e. cases no. 2, 4 and 5) the indicators don't really associate with the pattern of success. There is a tendency for the more positive difference in interaction at the decision-making level to relate to the higher level of success.
7.4.4 : Power Resources

Power resource is an important feature of any organisation and that different organisational forms represent different configurations of institutionalised power and influence. In the analysis of the interaction of JV partnerships, power resource could be initially accepted as either balanced or imbalanced. The balanced power resource in the interaction structure of the JV is reflected by the horizontal integration and the imbalanced power resource is the vertical integration of the co-ordination of the partners' activity contributions.

Power resources may be defined, as those things which bestow the means whereby the behaviour of others may be influenced and power relations arise out of the uneven distribution of these resources (Hales, 1993). The consequence of power resources and its influence on one another between the JV partners, led to power relations being either balanced or not.

The power relation most crucial in Construction JV organisation is in terms of superiority of knowledge or skill. This is because construction is a sophisticated technological-oriented activity, which demands a high level of knowledge and skill. The inter-dependence between partners in a JV is a way of complementing the knowledge and skill possessed by the partners. However, the degree of
one's superiority over another partner is difficult to measure objectively due to the different bases of knowledge and skill provided by the partnership. Therefore, the perceptions of the participants would be required to rate the skill demand for each partner on the various management tasks.

For the perceptions on the superiority of each partner in the management and production tasks, the number of tasks (seven management tasks + the leading origins of the skilled workers and sub-contractors). The seven management tasks are described earlier in chapter 4. The dominance in the origin of skill workers on site and the origin of sub-contractors participated are referred to as the construction task's superiority. These are shown in the questionnaire in Appendix 3.

The total number of the skill demands and the number of dominances in the employment of the skilled workers and the sub-contractors is equal to 9 (i.e. 7 management tasks + 2 construction tasks). The proportion is computed by taking the number of tasks in which a partner was more dominant and dividing it by the total number of tasks, i.e. 9. For cases no. 1, 3 and 8, the total number of tasks used is 8 because design task was not part of the JV tasks. Finally, the proportions are presented in table 7.22.
Table 7.22: The Power Resource from the partners for the JV

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Proportion of Professional Skill Demanded for the JV</th>
<th>Proportion of Management and Construction Superiority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK</td>
<td>P</td>
</tr>
<tr>
<td>1</td>
<td>0.62</td>
<td>0.64</td>
</tr>
<tr>
<td>2</td>
<td>0.98</td>
<td>0.33</td>
</tr>
<tr>
<td>3</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>4</td>
<td>0.74</td>
<td>0.52</td>
</tr>
<tr>
<td>5</td>
<td>0.79</td>
<td>0.43</td>
</tr>
<tr>
<td>6</td>
<td>0.79</td>
<td>0.74</td>
</tr>
<tr>
<td>7</td>
<td>0.83</td>
<td>0.62</td>
</tr>
<tr>
<td>8</td>
<td>0.64</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Based on the differences between the amount of skill contributions by the partners to the overall JV organisation, as well as between the amount of superiority perceived by the participants, an interesting pattern emerges.

In table 7.22, the difference in the Professional skill demanded in cases no. 2, 4 and 5 seems to be very high because the contribution of the other partners were all relatively lower than the UK partner's contributions. Since they were the differentiated JVs, the other partners' roles, such as cases no. 4 and 5, were not very much emphasised in the overall contributions to the management of the JV projects. Similarly, for case no. 2, the partner's nature of contributing activity which acted only as a sub-contractor, was not emphasised as being a large skill contributor to the overall project's management and also construction tasks.
The UK Contractor's superiority in case no. 2 was very great.

This kind of JV is considered as a "vertical interaction" in terms of skill contributions when overall management and construction tasks are considered. In a decision-making process, the interaction of the partners is considered as "horizontal interaction", when the professional status and the specialisation of roles are about the same. This can make the interaction at the decision-making process difficult. The equal status of the JVs studied (50-50 JVs) would make them more inclined towards horizontal interaction, if not, then the relationship would be affected.

However, this part of the analysis is concerned with power resource, particularly on skill contributions. The differentiated JVs (Cases no. 2, 4 and 5) have higher skill differences indicating superiority on one of the partners as a major contributor of skill to the JV. Case no.5 was an on-going project, but there is an indication that as at that stage of work the participant perceived the difference in the skill superiority between the partners as quite high.

The integrated JVs indicate higher differences in the skill demanded between the partners for the lower success JVs such as cases 6, 7 and 8 as compared to cases no. 1 and 3. However, there is not much difference in superiority in
relation to the pattern of success but cases no. 6 and 8 are negative which indicate that the differences are in favour of the EC partners. These are also relatively low in differences which indicate that though they were more in favour of the EC partners for superiority, the difference in superiority is relatively low too.

7.4.5 : Communication

In normal interaction between the partners and their personnel there would be a certain degree of a communication problem based on the different language used such as between English and French. This was assessed based on the perceptions of the participants on this problem. The perceptions were rated on a scale of 1 to 6 (where 1=Very low and 6=Very High). This is presented in table 7.23.

Table 7.23 : Language as a problem in communication

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Perceived Problem Rating</th>
<th>Degree of Communication problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>Moderately High</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>Moderately High</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Moderately Low</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>Moderately Low</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>Very High</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>Moderately High</td>
</tr>
</tbody>
</table>
From table 7.23 cases no.1 and 6 were projects done outside UK and in the partners' countries. Surprisingly, they were not having so much difficulty as far as language is concerned. Case no. 7 has the highest degree of language problem and this could be one reason for its low level of success. Overall there is no strong indication of association between the communication problem and the pattern of success.

In interaction between partners, transmission of information is another communication element which must be well understood through their deliberations which could present barriers (withholding of information) whether intentionally or not. The barriers could be either an explicit or implicit form and this can only be accepted by the partners when the extent of "withholding of information" perceived by the partners are not too serious, so as to jeopardize their relationship and the running of the project.

The participants were asked to rate, 1 to 6 as usual, on the "withholding of information between partners". The responses are shown in table 7.24.
Table 7.24: Perceived Withholding of information between partners

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Rating</th>
<th>Degree of Withholding information in Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Generally Low</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>Very Low</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>Very High</td>
</tr>
</tbody>
</table>

This also seems to have no relation with the pattern of success, but the combined effect of a communication problem in language and withholding of information between partners, could be a useful check. The ratings in tables 7.23 and 7.24 are added to form an indicator for communication variable. This is shown in table 7.25.

Table 7.25: Indicator for Communication Problem

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Total Rating</th>
<th>Degree of Communication Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>Generally Low</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Moderately Low</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Very Low</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Generally Low</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Generally Low</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>Very Low</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Moderately Low</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>Generally High</td>
</tr>
</tbody>
</table>
The communication problem has no clear general association with the pattern of success but case no. 8 does appear to relate communication problems with low success.

7.5 : Team

In team analysis the problem of interaction between the partners would be more obvious since team itself is concerned with interaction. The aim of this analysis is to investigate the effectiveness of the teams of the JV cases. Team characteristics and leaders' personalities based on the seven management tasks are used throughout this study to achieve this purpose. Team characteristics and leaders' personalities are dealt with separately below.

7.5.1 : Team Characteristics

Team characteristics are derived from ten items of members' characteristics which are rated from 1 as Very Low to 6 as Very High. The characteristics are based on the 7 tasks which act as the group or team that are assessed by the participants based on his perceptions. These are presented in tables 7.26 and 7.27.
Table 7.26: Team Characteristics: Average across tasks

<table>
<thead>
<tr>
<th>The Characteristics</th>
<th>The Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Decision-Making</td>
<td>4.67</td>
</tr>
<tr>
<td>2. Learning between partners</td>
<td>4.17</td>
</tr>
<tr>
<td>3. Progress of work</td>
<td>4.00</td>
</tr>
<tr>
<td>4. Intergroup Interaction</td>
<td>5.00</td>
</tr>
<tr>
<td>5. Evaluation of work</td>
<td>5.00</td>
</tr>
<tr>
<td>6. Controlling staff turnover</td>
<td>6.00</td>
</tr>
<tr>
<td>7. Response to change</td>
<td>4.33</td>
</tr>
<tr>
<td>8. Achieving productivity</td>
<td>4.50</td>
</tr>
<tr>
<td>9. Interpersonal Relationship</td>
<td>5.67</td>
</tr>
<tr>
<td>10. Relationship to partner's culture</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

The figures in table 7.26 represent the average ratings of each characteristic across the 7 tasks. In table 7.26, the differences in the sums of the cases can be seen. Team characteristics for case no.2 is the highest followed by cases 1, 3, 7, 4, 5, 6 and 8. This is not exactly in line with the pattern of success. However, there is a tendency for such a pattern to exist only if not for the high team characteristics of case no.7. Case no.7 is among the low success cases but it appeared to be having a good JV team.
The "TOTAL" for the ten characteristics are also shown in the table. It indicates that decision-making has the highest point. This is clearly seen by rank order as follows:

1. Decision-making
2. Achieving productivity
3. Controlling staff turnover
4. Interpersonal relationship
5. Evaluation of work
6. Response to change
7. Learning between partners
8. Progress of work
9. Inter-group interaction
10. Relationship to partner's culture

There seems to be a mixed reactions to the team characteristics which might be due to the varied nature of the JV projects. For example, Progress of work is ranked low while achieving productivity is high. However, what is certain is the high ranking of the decision-making characteristic. This indicates a high emphasis of this characteristic for a JV team comprising of the origins of the partners. This also indicates that the relationship to the partner's culture was not highly critical to the JVs.

For the purpose of comparing the characteristics of team members of the 7 tasks, the ratings are added across the characteristics for each task. This is shown in table 7.27.
Table 7.27: Team Characteristics: Total points assigned for each task

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design Control</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Operation Control</th>
<th>General Administration</th>
<th>Total</th>
<th>Average</th>
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<tbody>
<tr>
<td>1</td>
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<td>45</td>
<td>44</td>
<td>53</td>
<td>48</td>
<td>290</td>
<td>48.33</td>
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<td>2</td>
<td>48</td>
<td>59</td>
<td>45</td>
<td>52</td>
<td>50</td>
<td>60</td>
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</tr>
<tr>
<td>3</td>
<td>-</td>
<td>52</td>
<td>44</td>
<td>43</td>
<td>47</td>
<td>55</td>
<td>39</td>
<td>279</td>
<td>46.50</td>
</tr>
<tr>
<td>4</td>
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<td>45</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>322</td>
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</tr>
<tr>
<td>*5</td>
<td>45</td>
<td>47</td>
<td>45</td>
<td>45</td>
<td>50</td>
<td>39</td>
<td>39</td>
<td>317</td>
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<tr>
<td>6</td>
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<td>7</td>
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<td>44</td>
<td>40</td>
<td>42</td>
<td>49</td>
<td>40</td>
<td>44</td>
<td>325</td>
<td>45.43</td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>49</td>
<td>42</td>
<td>41</td>
<td>48</td>
<td>49</td>
<td>49</td>
<td>281</td>
<td>43.50</td>
</tr>
</tbody>
</table>

TOTAL 238 394 365 364 359 405 338
AVERAGE 47.8 49.25 45.83 45.5 44.88 50.83 42.0

- Not part of JV team
* Case no 5 was a current project.

The figures in table 7.27 represent the total rated points across the ten team characteristic (as listed in table 7.26) assigned to each task. Since there are ten team characteristics, the maximum possible score for each task by a participant would be 60 (i.e. 10x6). From table 7.27, the overall highest score between the tasks is the Site Operation Control task. This is followed by Planning, Design, Financial Control, Material Control, Plant Control and General Administration respectively.

Table 7.28 represents the proportionate values of the scores on the maximum possible score of 60 for each task. This is an alternative index for team characteristics.
The team members' characteristics indicate that there was an association with the level of success. As can be seen from table 7.28, there are two cases which do not follow the pattern. They are cases no. 2 and 7. Case no. 2 was having the best team members. Case no. 7 was the fourth. Though case no. 2 is in the second position in terms of the JV success, case no. 7 is the second lowest. This indicates that case no. 7 had other reason for being low in the level of success and certainly not from "team". Other cases are well associated with the pattern of success.

7.5.2 : Leaders' Personalities

The Personality items used in measuring the personalities of the team leaders are shown in the questionnaire in Appendix 3. There are 40 items used. These items represent personality measurements adopted from the descriptions of
personality dimensions described in most literature. They are used to describe the introvert and extrovert personalities. A long list (40 items) is chosen so that the participants' responses can be checked for consistency. Since a long list can make them become bored, so they would tend to rate the items as to how they feel about the leader in quite a consistent manner.

The total points assigned would give an indication of the leader's personality. Though measuring of personality is quite established in research, a researcher has to adapt to the particular personality trait that is required to be measured. The total points assigned to each of the tasks are presented in table 7.29.

Table 7.29 : Total Points Assigned on Leaders' Personalities of Each Task

<table>
<thead>
<tr>
<th>Case No</th>
<th>Design</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Operation Control</th>
<th>General Administration</th>
<th>Total</th>
<th>Average</th>
</tr>
</thead>
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<td>130</td>
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<td>128</td>
<td>117</td>
<td>106</td>
<td>719</td>
<td>119.83</td>
</tr>
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<td>128</td>
<td>143</td>
<td>119</td>
<td>117</td>
<td>117</td>
<td>135</td>
<td>110</td>
<td>124.14</td>
</tr>
<tr>
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<td></td>
<td>130</td>
<td>122</td>
<td>112</td>
<td>115</td>
<td>125</td>
<td>100</td>
<td>704</td>
<td>117.33</td>
</tr>
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<td>101</td>
<td>106</td>
<td>130</td>
<td>110</td>
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</tr>
<tr>
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<td></td>
<td>110</td>
<td>130</td>
<td>111</td>
<td>106</td>
<td>115</td>
<td>106</td>
<td>100</td>
<td>111.43</td>
</tr>
<tr>
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<td></td>
<td>120</td>
<td>119</td>
<td>111</td>
<td>107</td>
<td>114</td>
<td>115</td>
<td>110</td>
<td>113.71</td>
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<td>7</td>
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<td>93</td>
<td>125</td>
<td>104</td>
<td>116</td>
<td>120</td>
<td>128</td>
<td>92</td>
<td>111.14</td>
</tr>
<tr>
<td>8</td>
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<td>104</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>619</td>
<td>103.17</td>
</tr>
</tbody>
</table>

TOTAL: 569 999 915 972 920 961 831
AVERAGE: 113 80 124 88 114.38 109.00 115.00 120.13 103.89

- Not part of JV team
- Case no 5 was a current project
For each task, maximum possible score is 232 points. Therefore, the raw scores in table 7.29 can be transformed into proportionate value of the maximum score and this is shown in table 7.30. This is an alternative index for Leaders' Personalities.

Table 7.30: Personalities of Team Leaders

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Design</th>
<th>Planning Control</th>
<th>Financial Control</th>
<th>Material Control</th>
<th>Plant Control</th>
<th>Site Operation Control</th>
<th>General Administration</th>
<th>Total</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>0.55</td>
<td>0.58</td>
<td>0.47</td>
<td>0.55</td>
<td>0.50</td>
<td>0.46</td>
<td>3.09</td>
<td>0.52</td>
</tr>
<tr>
<td>2</td>
<td>0.65</td>
<td>0.62</td>
<td>0.51</td>
<td>0.50</td>
<td>0.50</td>
<td>0.58</td>
<td>0.47</td>
<td>3.73</td>
<td>0.53</td>
</tr>
<tr>
<td>3</td>
<td>0.61</td>
<td>0.55</td>
<td>0.53</td>
<td>0.48</td>
<td>0.50</td>
<td>0.54</td>
<td>0.43</td>
<td>3.04</td>
<td>0.51</td>
</tr>
<tr>
<td>4</td>
<td>0.47</td>
<td>0.51</td>
<td>0.48</td>
<td>0.48</td>
<td>0.50</td>
<td>0.47</td>
<td>0.43</td>
<td>3.07</td>
<td>0.49</td>
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<tr>
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<td>0.51</td>
<td>0.48</td>
<td>0.48</td>
<td>0.50</td>
<td>0.47</td>
<td>0.43</td>
<td>3.05</td>
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<td>6</td>
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<td>0.54</td>
<td>0.45</td>
<td>0.50</td>
<td>0.52</td>
<td>0.55</td>
<td>0.40</td>
<td>3.36</td>
<td>0.48</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>0.45</td>
<td>0.44</td>
<td>0.44</td>
<td>0.44</td>
<td>0.44</td>
<td>0.44</td>
<td>2.65</td>
<td>0.44</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.45</td>
<td>4.31</td>
<td>3.95</td>
<td>3.75</td>
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<td>4.14</td>
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<td></td>
</tr>
<tr>
<td>AVERAGE</td>
<td>0.49</td>
<td>0.54</td>
<td>0.49</td>
<td>0.47</td>
<td>0.50</td>
<td>0.52</td>
<td>0.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 7.30, the average figure for each case do not indicate an absolute correlation with the pattern of success but the first four cases have average of 0.50 (i.e. 50%) and more, while the lower four cases are all below 0.50 level. In that sense there is an indication that the personality of the leaderships of the JV tasks have a link with the general pattern of success of the JVs.
7.6 : Trust

Trust is a covert element of organisation which require investigation due to its importance in this kind of study of interactions in JVs. However, a detailed analysis of trust is also a specialised area of study. The aim of the analysis on trust in this study is to identify from the perceptions of the participants whether the level of trust in the JVs can be associated with the level of success. High level of trust often underpins a success of interactions. The measures of trust in this study used 16 questionnaire items and the responses are tabulated in table 7.31.

Table 7.31 : Ratings on Measures of Trust

<table>
<thead>
<tr>
<th>Case No</th>
<th>25</th>
<th>26</th>
<th>28</th>
<th>29</th>
<th>36</th>
<th>37</th>
<th>40</th>
<th>41</th>
<th>42</th>
<th>52</th>
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<th>58</th>
<th>59</th>
<th>60</th>
<th>62</th>
<th>64</th>
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<td>5</td>
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<td>5</td>
<td>5</td>
<td>65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Due to the negative statements the ratings are reversed
(Only due to the nature of the questions)

Since there are many items used to measure trust, item analysis is to be made for internal consistency. This is done by analysing the items in table 7.31. The consistency of case no.1 to all items is checked and noted that items
26, 59 and 64 are inconsistent because in all other items, the response pattern by case no.1 seems to be either a 5 or a 6. The three items are inconsistent because the responses were a 1 for item 26, a 4 for items 59 and 64.

When all the cases are checked, the response patterns with inconsistencies are noted. The items with many inconsistencies are to be removed. Black and Champion (1976) stated that, "When certain items stand out from the rest as being inconsistent, this is considered as evidence to challenge not only the reliability of the item but also its validity". From the item analysis, four items are removed due to inconsistencies. They are items 25, 26, 42 and 52. Table 7.32 present only the consistent items.

The inconsistent items would have measured something else rather than trust. That is the reason for these items to be excluded from the measurement of trust. When the total figures in both tables 7.31 (with inconsistent items) were compared, it was found that the totals without the inconsistencies show a better association to the pattern of success. Therefore, it was decided that the trust indicator shown in table 7.32 is to be used.
Table 7.32: Trust Indicator

<table>
<thead>
<tr>
<th>Case No</th>
<th>35</th>
<th>36</th>
<th>40</th>
<th>41</th>
<th>53</th>
<th>54</th>
<th>55</th>
<th>58</th>
<th>59</th>
<th>60</th>
<th>62</th>
<th>64</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
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<td>5</td>
<td>5</td>
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<td>5</td>
<td>55</td>
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</tr>
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<td>5</td>
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<td>8</td>
<td>5</td>
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<td>6</td>
<td>5</td>
<td>5</td>
<td>55</td>
<td>0.78</td>
</tr>
</tbody>
</table>

* Due to the negative statements the ratings are reversed

% Total divided by Maximum possible score of 72 (i.e. 12 items x max. rating of 6)

All items are presented in positive manner indicating high score for high level of trust. The ratings for negative statements which have been reversed are shown with a star below the item number as shown in tables 7.31 and 7.32. The ratings for each case are summed up and divided by the maximum possible score (i.e. 12 items x 6 as the highest point on the rating scale = 72) to get the ratio of each case’s score.

This becomes the trust index specifically governs the interactions phenomena of the JV partnerships. Case no. 6 has the highest level of trust. This followed by Cases no. 1 and 5 (both are equal) as the second highest. Then, Cases no. 2, 3 and 4, and finally, cases no. 7 and 8 were relatively low on trust compared to other cases. Apart from cases no. 5 and 6, the other cases are associated with the pattern of success.
7.7 : Summary of Indices

The degree of success has been determined and the order of success of the 8 cases becomes the pattern of success that can be used to compare the effectiveness of the JVs with regard to the structure, organisation and team.

7.7.1 : Summary of Structure

The structure of construction International JVs can be summarised as follows:

Most JVs were short-term contractual interactions to undertake construction projects for the aim of financial gain and to gain stronger lasting relationships between partners. These were achieved by complementary contributions to the JVs, not necessarily based on equity share, such that the distribution of work between partners were implemented in the most practical manner. That is, based on skill and expertise of the personnel selected from the parent companies.

Though equity share for the 8 cases studied were all on a 50-50 basis, they were stressing on equal profitability and liability, but not necessarily on the sharing of the work and other commitments to the JV. The success of the JVs, arranged from high to low, by case numbers 1 to 8 respectively, is as shown in table 7.33.
Table 7.33: The structure of interaction

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Size of Project</th>
<th>Type of Project</th>
<th>Structure</th>
<th>Degree of interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Based on sharing of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Expertise and Resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Refer table 7.8)</td>
</tr>
<tr>
<td>1</td>
<td>£10 Mil.</td>
<td>Factory</td>
<td>Integrated</td>
<td>0.83</td>
</tr>
<tr>
<td>2</td>
<td>£9 Mil.</td>
<td>Pipe Rehabilitation</td>
<td>Differentiated</td>
<td>0.50</td>
</tr>
<tr>
<td>3</td>
<td>£12 Mil.</td>
<td>Bridge</td>
<td>Integrated</td>
<td>0.67</td>
</tr>
<tr>
<td>4</td>
<td>£6 Mil.</td>
<td>Office</td>
<td>Differentiated</td>
<td>0.67</td>
</tr>
<tr>
<td>5</td>
<td>£300 Mil.</td>
<td>Bridge</td>
<td>Differentiated</td>
<td>0.58</td>
</tr>
<tr>
<td>6</td>
<td>£1.5 Mil.</td>
<td>Residential</td>
<td>Integrated</td>
<td>0.33</td>
</tr>
<tr>
<td>7</td>
<td>£4 Mil.</td>
<td>Basement Car Park</td>
<td>Integrated</td>
<td>0.50</td>
</tr>
<tr>
<td>8</td>
<td>£58 Mil.</td>
<td>Leisure Complex</td>
<td>Integrated</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Table 7.33 describes the JVs in terms of the desired level of interaction. This reflects the expectations that the JVs had in operating their relationships. The degree of interaction based on the degree of sharing in expertise and resources indicates the intensity of the interaction.

However, the degree of interaction indicated by the ratios of sharing in expertise and resources can be used to represent the intensity of the interaction between the partners in the JVs. The tendency is that the higher the sharing structure, the more they tend to be high in success.
7.7.2 : Summary of Organisation

Organisational variables are selected based on the critical interaction points which by the very nature of the variables are the dimensions of interaction. These dimensions are as follows:

1. Distribution of Personnel
2. Autonomy
3. Decision-Making Process
4. Power Resources
5. Communication

The indicators of these variables are tabulated as in table 7.34.

Table 7.34 : Organisation Indicators

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Shared Executive Staff</th>
<th>Shared Supporting Staff</th>
<th>JV Autonomy</th>
<th>Decision-Making Process</th>
<th>Power Resources: Skill</th>
<th>Task Superiority</th>
<th>Communication Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.25</td>
<td>3.50</td>
<td>6</td>
<td>5</td>
<td>-0.02</td>
<td>0.25</td>
<td>2.5</td>
</tr>
<tr>
<td>2</td>
<td>2.43</td>
<td>1.71</td>
<td>6</td>
<td>8</td>
<td>0.85</td>
<td>1.00</td>
<td>3.0</td>
</tr>
<tr>
<td>3</td>
<td>5.33</td>
<td>4.83</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>0.22</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>2.43</td>
<td>3.86</td>
<td>5</td>
<td>1</td>
<td>0.22</td>
<td>0.50</td>
<td>2.0</td>
</tr>
<tr>
<td>5</td>
<td>2.43</td>
<td>1.86</td>
<td>6</td>
<td>5</td>
<td>0.36</td>
<td>0.75</td>
<td>2.0</td>
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<tr>
<td>6</td>
<td>4.29</td>
<td>2.57</td>
<td>6</td>
<td>1</td>
<td>0.05</td>
<td>-0.12</td>
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</tr>
<tr>
<td>7</td>
<td>3.88</td>
<td>3.00</td>
<td>2</td>
<td>1</td>
<td>0.21</td>
<td>0.25</td>
<td>3.5</td>
</tr>
<tr>
<td>8</td>
<td>4.17</td>
<td>3.00</td>
<td>6</td>
<td>0</td>
<td>-0.12</td>
<td>-0.12</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Negative figures in power resources' columns indicates an excess of the EC partner's resource.
7.7.3 : Summary of Team

The indicators for team are summarised in table 7.35. There are two main indicators for team effectiveness, i.e. the characteristics of team members and the personalities of the team leaders.

Table 7.35 : Team Indicators

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Members Characteristics</th>
<th>Leader's Personality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.81</td>
<td>0.52</td>
</tr>
<tr>
<td>2</td>
<td>0.85</td>
<td>0.53</td>
</tr>
<tr>
<td>3</td>
<td>0.78</td>
<td>0.51</td>
</tr>
<tr>
<td>4</td>
<td>0.77</td>
<td>0.50</td>
</tr>
<tr>
<td>5</td>
<td>0.75</td>
<td>0.48</td>
</tr>
<tr>
<td>6</td>
<td>0.73</td>
<td>0.48</td>
</tr>
<tr>
<td>7</td>
<td>0.77</td>
<td>0.48</td>
</tr>
<tr>
<td>8</td>
<td>0.73</td>
<td>0.44</td>
</tr>
</tbody>
</table>

There are other indicators which are included in the structured interview questionnaire. These are shown in table 7.36.

Table 7.36 : Other Indicators

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Co-operation Effectiveness</th>
<th>Team Spirit</th>
<th>Client's Interference</th>
<th>Country's Economic Constraint</th>
<th>Country's Political Constraint</th>
<th>Cultural Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>4</td>
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<td>5</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
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<td>6</td>
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<td>1</td>
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<td>2</td>
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</tr>
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<td>4</td>
<td>4</td>
<td>1</td>
<td>3</td>
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<td>2</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The Ratings are based on a 1 to 8 scale where 1 = Very Low and 8 = Very High.
7.8 : Test of Associations

The variables are associated by using Spearman Correlation in SPSS for windows. The indicators of success, structure, organisation and team are correlated and presented in table 7.37.

Table 7.37 : Spearman correlation coefficients of the variables of success, structure, organisation and team.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>struct</td>
<td>5427</td>
<td>6258</td>
<td>1227</td>
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<td>3685</td>
<td>-2303</td>
<td>4643</td>
<td>-2500</td>
<td>.5854</td>
<td>.2733</td>
<td>8831***</td>
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<tr>
<td>GoalAtt</td>
<td>.9277</td>
<td>.8424</td>
<td>.4364</td>
<td>.2309</td>
<td>.5455</td>
<td>.0120</td>
<td>7922</td>
<td>.1509</td>
<td>1448</td>
<td>.3627</td>
<td>9184***</td>
</tr>
<tr>
<td>OverallP</td>
<td>.7150</td>
<td>.7194</td>
<td>.3630</td>
<td>.2442</td>
<td>.5544</td>
<td>.0281</td>
<td>7296</td>
<td>.1643</td>
<td>.2361</td>
<td>.4543</td>
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</tr>
<tr>
<td>Exec.</td>
<td>-.2068</td>
<td>-.3210</td>
<td>-.0617</td>
<td>-.2353</td>
<td>-.6800***</td>
<td>-.6325**</td>
<td>-.3591</td>
<td>-.2516</td>
<td>.4050</td>
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</tr>
<tr>
<td>Supp</td>
<td>.0904</td>
<td>.1212</td>
<td>.3515</td>
<td>.2548</td>
<td>.3758</td>
<td>-.6826*</td>
<td>-.2518</td>
<td>-.5900</td>
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<tr>
<td>Auton.</td>
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<td>-.5930</td>
<td>.0690</td>
<td>.0414</td>
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<td>.1721</td>
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<tr>
<td>Decis.</td>
<td>.7660**</td>
<td>.7854**</td>
<td>.4814</td>
<td>.2533</td>
<td>.8714*</td>
<td>2003</td>
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<tr>
<td>Skilpow</td>
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<td>.0723</td>
<td>.0964</td>
<td>.3494</td>
<td>.7711**</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Superior.</td>
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<td>.5915</td>
<td>.0915</td>
<td>.1037</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comm</td>
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<td>.0488</td>
<td>.6280*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Trust</td>
<td>.3679</td>
<td>3955</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Memb.</td>
<td>8687***</td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

* p < .10  ** p < .05  *** p < .01

The Variables:

- Structure (struct),
- Goal Attainments (GoalAtt),
- Overall Performance (OverallP),
- Executive Staff (Exec.),
- Supporting Staff (Supp.),
- Autonomy (Auton.),
- Decision-making (Decis.),
- Skill Power (Skilpow),
- Task Superiority (Superior),
- Communication Problem (Comm),
- Trust,
- Leader's Personality (Person),
- Team Members’ Characteristics (Memb),
In table 7.37, the structure, which represents the intensity of interaction based on the sharing of expertise and resources, is strongly and positively correlated with both the perceptions of the overall performance \((p<.01)\) and the goal attainments \((p<.05)\). Structure is also strongly and positively correlated with team members' characteristics at \(p<.10\). It is positively correlated to Leader's Personality but not statistically significant. It might have been significant if more samples had been available for this test. However, there is no significant correlation for the variable "structure" with other variables. This indicates that the higher the interaction structure, the higher the success, but it has no significant correlations with other organisational and team variables.

There are two success variables used. One is the perception on the overall performance and the other is the goal attainments (i.e. on the 10 goals). Both are strongly correlated \((p<.01)\) with each other. "Decision" is correlated at \(p<.05\) with the two success variables. Similarly, members' characteristics and Leader's Personality are both correlated positively with Overall Performance both at \(p<.05\) and with Goal Attainment both at \(p<.01\).

"Trust" has no significant correlation with goal attainment and the overall performance. This means that the participants associated "decision-making" more than "trust", with the pattern of success. This reflects that
decision-making was more critical to the success of the JVs rather than trust. "Decision-making" is also correlated with "team members' characteristics" and "Team Leader's Personality" both at p<.05. This indicates that "decision-making" is also a problem in relation to the "members' characteristics" and "Leaderships" of the tasks' teams, hence, with the overall performance. "Trust" is inevitable in any successful joint venture particularly between the leaders but there is no significant correlation within the sample studied.

The sharing of "executive staff" is correlated strongly and positively with "task superiority" at p<.01 and "skill power" at p<.05. "Supporting staff" is only correlated at p<.10 with "skill power" indicating its dependence on "skill power" rather than "task superiority". "Task superiority" is correlated with "decision-making" at p<.10 and positive relationship indicating that the greater the superiority of one partner, the greater the decision-making problem. "Skill power" has strong positive correlation with "task superiority" at p<.05 but there is no significant correlation with "decision-making problem".

This test of associations given above indicates that the perceptions of success is mainly in relation to very limited variables. The related variables are the structure, decision-making, trust, members' characteristics and leader's personality. These are the critical variables as
perceived by the participants to the success of the JVs. "Task superiority" is another variable which had high correlation with Goal Attainment (positive correlation coefficient = .5455 and significance level = .162) and Overall Performance (positive correlation coefficient = .5544 and significance level = .154 respectively) but lacks strong statistical significance.

7.9 : Analysis of Variance (ANOVA)

The non-parametric analysis of variance is used to test the differences between the levels of success. Since this study has to deal with small sample size, the usefulness of the multivariate statistics has to be given up, hence, the bivariate statistics is used. The Mann-Whitney U - Wilcoxon Rank Sum W Test in the SPSS for windows is used.

The pattern of success has to be grouped into two classes so that this test can be applied. Therefore, the 8 cases were divided into two groups where the top 4 cases with higher levels of success were classified as "HIGH SUCCESS" and the four cases on the lower levels of success were classified as "LOW SUCCESS". The SPSS for windows computed the test. The results of the test on the variables are shown in table 7.38.
Table 7.38: The Mann-Whitney U - Wilcoxon Rank Sum W Test on the pattern of success against the structure, organisation and team variables and against other influences.

<table>
<thead>
<tr>
<th>THE VARIABLE</th>
<th>THE LEVELS OF SUCCESS</th>
<th>2-Tailed P (Corrected for ties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERALL JV PERFORMANCE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Performance</td>
<td>6.13</td>
<td>2.88</td>
</tr>
<tr>
<td>Goal Attainment</td>
<td>6.50</td>
<td>2.50</td>
</tr>
<tr>
<td>Trust</td>
<td>4.63</td>
<td>4.38</td>
</tr>
<tr>
<td>Co-operation Effectiveness (item 50)</td>
<td>5.75</td>
<td>3.25</td>
</tr>
<tr>
<td>Team Spirit (item 55)</td>
<td>6.00</td>
<td>3.00</td>
</tr>
<tr>
<td>STRUCTURE:</td>
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</tr>
<tr>
<td>Interaction Structure</td>
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<td>2.88</td>
</tr>
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<td>ORGANISATION:</td>
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<td>Shared Executive Staff</td>
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<td>Decision-Making Process</td>
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<td>3.25</td>
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<td>Skill Power</td>
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<td>4.75</td>
</tr>
<tr>
<td>Task Superlonty</td>
<td>5.38</td>
<td>3.63</td>
</tr>
<tr>
<td>Communication Problem</td>
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<td>5.00</td>
</tr>
<tr>
<td>TEAM:</td>
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<td></td>
</tr>
<tr>
<td>Team Members' Characteristics</td>
<td>6.38</td>
<td>2.63</td>
</tr>
<tr>
<td>Leader's Personality</td>
<td>6.50</td>
<td>2.50</td>
</tr>
<tr>
<td>OTHER INFLUENCES:</td>
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<tr>
<td>Client Interference</td>
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<td>4.38</td>
</tr>
<tr>
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<tr>
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<td>5.00</td>
</tr>
<tr>
<td>Cultural Constraint</td>
<td>4.13</td>
<td>4.88</td>
</tr>
</tbody>
</table>

* P < 0.10 **P < 0.05
From table 7.38, the test indicates significant differences between the two levels of success (i.e. High and Low) in the following variables at either \( p < .05 \) or \( p < .10 \):

1. Overall Performance  \( (p<.05) \)
2. Goal Attainment  \( (p<.05) \)
3. Team Members' Characteristics  \( (p<.05) \)
4. Leader's Personality  \( (p<.05) \)
5. Interaction Structure  \( (p<.10) \)
6. Co-operation Effectiveness(Item 50)  \( (p<.10) \)
7. Team Spirit (Item 56)  \( (p<.10) \)

Therefore, these 7 variables are critical to the successful implementation of the EC Joint Ventures studied between the UK Contractors and their European partners. This will be discussed further in chapter 8.

It is necessary to check the pattern of success against some subsets such as project size, Year project started and completed, and experience of the companies in JV before the case mentioned. Any significant difference between the HIGH and LOW success groups is to be tested by using the Mann-Whitney U - Wilcoxon Rank Sum W Test. The results are shown in table 7.39.
Table 7.39: The Mann-Whitney U - Wilcoxon Rank Sum W Test on the pattern of success against the project subsets.

<table>
<thead>
<tr>
<th>THE VARIABLE</th>
<th>THE LEVELS OF SUCCESS</th>
<th>2-Tailed P (Corrected for ties)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH (Mean Rank)</td>
<td>LOW (Mean Rank)</td>
</tr>
<tr>
<td>Project Size</td>
<td>4.50</td>
<td>4.50</td>
</tr>
<tr>
<td>Year Started</td>
<td>4.88</td>
<td>4.13</td>
</tr>
<tr>
<td>Year Completed</td>
<td>4.50</td>
<td>4.50</td>
</tr>
<tr>
<td>Experience JV</td>
<td>3.38</td>
<td>5.63</td>
</tr>
</tbody>
</table>

From table 7.39, the four subsets have no significant influences on the pattern of success. "Experience" seems quite different but not strongly significant and the mean rank of the LOW SUCCESS is greater than the mean rank of the HIGH SUCCESS. Therefore, in this case, the success of JV cannot be clearly related to experience, especially when the JV experiences before were not with the same partner for the case being studied. This is the reality for most of the cases except cases no. 2 and 7 where the JVs are on-going relationships of the same partners.

In the next test, it is required to identify from the 7 tasks being used throughout this study in terms of the strength of the emphasis by the participants. This enables this study to conclude on the importance of the task to the EC JVs between the UK Contractors and other EC partners being studied. There are 7 sets of data pertaining to the 7 tasks. These data sets are as follows:
1. Critical changes in project tasks
2. Executive staff of the EC partner
3. Executive staff of the UK Contractor
4. The need of the tasks in terms of several specified items
5. The team members' characteristics
6. Leader's personality
7. Order of importance of the tasks

This analysis is done by using the Friedman Two-Way ANOVA or the K-Related samples in the Non-parametric statistics in the SPSS for Windows. The data are tested set by set and the results are tabulated as in table 7.40.

Table 7.40: Friedman Two-Way ANOVA (K-Related Samples) for the test of the Importance of JV Tasks.

<table>
<thead>
<tr>
<th>THE TASK</th>
<th>THE TASK</th>
<th>CHANGES EXEC.</th>
<th>PARTNER'S UKS EXEC</th>
<th>NEEDS EXEC</th>
<th>MEMBERS' CHARACTER</th>
<th>LEADER'S PERSONALITY</th>
<th>ORDER OF IMPORTANCE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESIGN</td>
<td>3.44</td>
<td>3.81</td>
<td>2.38</td>
<td>3.89</td>
<td>3.13</td>
<td>3.25</td>
<td>4.25</td>
<td>23.95</td>
</tr>
<tr>
<td>PLANNING</td>
<td>4.50</td>
<td>4.81</td>
<td>5.06</td>
<td>4.19</td>
<td>3.68</td>
<td>3.05</td>
<td>4.00</td>
<td>33.70</td>
</tr>
<tr>
<td>FINANCIAL</td>
<td>4.63</td>
<td>4.69</td>
<td>3.94</td>
<td>5.03</td>
<td>4.19</td>
<td>4.38</td>
<td>4.68</td>
<td>31.77</td>
</tr>
<tr>
<td>MATERIAL</td>
<td>3.56</td>
<td>3.31</td>
<td>4.44</td>
<td>2.69</td>
<td>4.00</td>
<td>2.58</td>
<td>3.50</td>
<td>24.06</td>
</tr>
<tr>
<td>PLANT</td>
<td>3.19</td>
<td>3.94</td>
<td>3.81</td>
<td>3.06</td>
<td>3.31</td>
<td>4.13</td>
<td>3.75</td>
<td>25.19</td>
</tr>
<tr>
<td>SITE</td>
<td>5.25</td>
<td>5.19</td>
<td>3.44</td>
<td>6.00</td>
<td>6.06</td>
<td>5.25</td>
<td>4.75</td>
<td>35.94</td>
</tr>
<tr>
<td>GEN ADMIN</td>
<td>3.44</td>
<td>3.44</td>
<td>5.19</td>
<td>2.94</td>
<td>2.19</td>
<td>2.00</td>
<td>2.25</td>
<td>21.45</td>
</tr>
</tbody>
</table>

CHI-SQUARE 6.3214 4.8884 9.0134 15.6973 17.2768 24.4955 8.8393

DEGREE OF FREEDOM 6 6 6 6 6 6 6

SIGNIFICANCE 3.662 .5562 1.726 0.043** 0.003*** 0.004*** .1829

** p < .05  *** p < .01
From table 7.40, there are three items that have significant differences in their mean ranks in relation to the 7 tasks. They are the needs of the tasks (p<.05), the team members' characteristics (p<.01), and the leader's personality (p<.01). These indicate that they are critical to the tasks. The total of the mean ranks for all the items are shown in the table and they indicate the emphasis by the participants upon the tasks. The tasks are then arranged in order of importance from the TOTAL column in the table, as shown below:

1. Site Operational Control
2. Project Planning
3. Financial Control
4. Plant Control
5. Material Control
6. Design
7. General Administration

**7.10 : Summary of Results**

The results of the data analysis presented in this chapter are based on the JV attributes specifically selected to understand the features of the successful implementation of construction JVs with EC partners. There are wide areas of study concerning JVs and a variety of motives and means of implementing them. Most studies in joint ventures take great interest in the strategic behaviour within joint ventures which deal mainly with the structure of joint ventures.
The basic phenomena of implementing a JV is to make it work the way the partners want it. This is the point that is often the cause of the JV failure even before the JV is implemented. The negotiation stage is crucial for any JV and it is at this stage that the partners must compromise, understand each other's roles, and the need for each other to achieve their common objectives and goals. Joint Venture cannot be taken for granted because a JV is chosen to manage an inter-dependent activity.

Eventhough the construction activity is to produce a tangible product, a JV is often concerned with a "relationship", which is intangible, but is very critical to the success of the project. A success of a JV is often related to the partners' relationship as well as the the production performance. Since this study is focused on the implementation of the European construction JVs, the process of achieving the intangible substance of joint venturing is even more critical. In any activity there are ideals which can be practised, but the very ideal practice is seldom materialises in reality. This fact must be understood and tolerated in establishing any JV. The ideal situation in a JV is when there is compromise, tolerance and consensus between partners.
The results of the data analysis show the various attributes of the JVs in their desire to interact in this kind of relationship. These results are summarised as follows:

1. The degree of interaction is found to be strongly correlated with the pattern of success. This indicates that the higher is the intent to interact (for equality structure) between the partners, the higher the level of sharing in expertise and resources, and the higher the level of success of the JV. The operationalising of the interaction of expertise and resources in construction JVs seems to be a plausible measure of the concept of success of JV relationships. This operationalisation of the structure-success measure is a useful approach of understanding the need for the equality as a motive of interaction in relation to the actual interaction outcomes. This enables the measure of success in JVs to be justified in a single measure of structure. This is referred to as the "Structure of Interaction". This measure provides an indication of the strengths and weaknesses of the JV relationships and this proves to be strongly correlated to the level of success.

2. The attributes of the JVs indicate no significant correlation of the organisational variables with the pattern of success except the decision-making
process. Decision-making was considered as a burden to the JV relationships. The high success JV had a higher decision-making problem than the low success JV. Despite the decision-making difficulty, the JVs were more successful compared to the JVs with less difficulty in the decision-making. This may be due to the nature of construction activity, which demands high decision-making process most of the times. Shared decision-making is always difficult for a JV but this study found that it is not a weakness. Other variables such as shared personnel, autonomy, power resources and communication are not significantly correlated with the pattern of success. Being short-term duration and contractual in nature, the emphasis on the project may be the premise of the preoccupied interaction activity by the partners within a JV organisation. As long as the partners are equally committed in managing the JV, the level of success would tend to be high.

3. Both team variables, i.e. members' characteristics and leader's personality, are strongly correlated with the pattern of success. Team is critical in relation to the JV success as found in this study.
4. Co-operation between partners and team spirit were both correlated strongly with pattern of success. This indicate that these two variables were highly associated with the level of success.

5. Trust is an important ingredient for JVs. However, the participants did not consider this variable as being high association to the level of success. This may be due to either:

(i) the participants were not revealing the truth about trust; or

(ii) they had the trust required but somehow or other, the relationship was not getting on too well; or

(iii) the trust was there, but taken for granted and not fully recognised as basically important.

These could have been due to the neglect by the partners to consider balanced structure of interactions as the fundamental element of the JV success.

6. Generally, the emphasis on site operation control, planning, financial control, plant control, material control, design and general administration in that order, indicated the normal contractors priority.
The perceived importance of the tasks in this fashion indicates a clear bias towards the project which is the concern in managing any construction activity.

These summaries can be simply stated as: the higher interactive structure, the more intensive the decision-making faced by the JVs. However, these are the dynamics of the successful JVs. This is in line with the point stated earlier that the ideal is not always the reality. The reality is: be prepared to work together, and face the challenge of working together. This is the message that the general perceptions of the UK Contractors is trying to put forward, that is, the emphasis on the level of the interactive structure against the success of the JVs.
CHAPTER 8

SUMMARY AND DISCUSSION OF RESULTS
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SUMMARY AND DISCUSSION
OF RESULTS

8.1: Introduction

The purpose of this chapter is to discuss the results of the data analysis. This is an attempt to provide answers to the research questions, propositions and the research hypotheses. The explanation in arriving at the knowledge from this study is based on an inductive or probabilistic approach. The lack of empirical research in JVs also means a lack of theoretical base for studying the subject. The approach taken in this study, examines a number of organisational variables, particularly those that are concerned with the interaction between the partners.

There is established international and inter-cultural literature advocating on the need for alliances in general. However, a JV is a specialised co-operative activity which is formed as a temporary organisation acting as an arena for the activities of the co-operating companies. The arena for a temporary organisation is different from a permanent organisation. The differences are concerned with the following:

1. The temporary nature of the JV organisation is associated with achieving a specific aim for
co-operation from which the partners are expecting some mutual benefits and synergistic gains. The linkage between the environment and organisation is limited to the specific project's needs and tasks. This is mainly concerned with expertise and resources.

2. The problem of complexity in a project's co-ordination can be overcome by having the separate companies committed in the organisation by shared ownership and control. In other words, the need to co-operate in a short-term JV enables the delivery of the participating companies' contributions (in knowledge, skill and other resources) in a more positive and committed manner.

3. The inter-organisational relations are to be focused intra-organisationally. The temporary nature of the construction JVs requires the working of teamwork within the organisation rather than to co-operate in a far distant relationship.

4. A single entity is created in a JV organisation. The temporary nature of the JV organisation makes it difficult to achieve a cohesive inter-cultural relationship. However, the need for such a co-operative organisation often endures in the relationship in whatever circumstances to ensure project completion in the most satisfactory conditions for the JV partners as well as for the client.
These four differences in the organisational approach of JVs from the ordinary organisations are discussed in the literature review in chapter 2 and in chapter 3 of this thesis. The understanding of these differences is useful before an explanation about the construction JV organisations can be pursued.

If in an ordinary organisation the emphasis on interaction may be concerned with the individuals and groups, in a JV organisation the relationship between the partners' origins is crucial. This requires a specific approach in JV research. The approach should be viewed in the context of explaining the fundamental motives and the desires of the partners for interaction in the JVs as well as the actual interactive performance by the partners. The focus of this study was into the dynamics of interaction.

The transaction cost approach deals with the economics of inter-organisational relations. The focus on the organisation, internally, is lacking. This is evidenced from Kogut (1988). The scenario for the European JVs is not very optimistic as potential business undertakings in the immediate future although there are several efforts being made to improve economic activities within the European Community. Furthermore, a lack of literature and research in the construction JVs provide a bare ground for understanding the JV organisations, particularly the implementation of the JVs.
At the company's strategic level, the focus is mainly on the question of choosing an option from several alternatives. The choice for a JV is decided upon based on the need for co-operation with another company in a shared ownership and control structure. This motive has to be materialised by structuring the JV the way that is appropriate for the strategy.

In construction, the activity demands the co-ordination of several parties, while in a JV, the focus is often given to the interaction dynamics (i.e. the relationship between the partners). Hence, the interaction of the partners is the concept that is being tested in this study in explaining the success of JVs.

The main research questions are concerned with the nature of EC construction JVs in relation to the general theories in JV. The nature of the Construction Industry is different from the Manufacturing Industry. This leads to some key differences in the nature of JVs, particularly where the structuring of the JV is concerned. It has been universally accepted that JVs are adopted simply because the sponsoring firms require to implement changes in their strategic postures or to defend current strategic postures against forces too strong for one firm to withstand alone. Joint ventures permit firms to create new strength. They permit firms to share in the use of technologies they could never afford to explore alone (Harrigan, 1988). A firm would prefer to undertake a project alone so that their own entity is
protected and maintained. Shared ownership is a reason for a JV to be considered as a "last resort" by some companies.

There seems to be a growing interest towards JV in Construction, particularly at the EC level. The need to JV with another company provides an access to an EC market as a way to expand business beyond existing frontiers and at the same time to obtain assistance from the local partner about the local knowledge which a foreign company is not too familiar with.

This study indicates that 2/8 of the cases were projects undertaken by the UK Contractors in the EC partners' countries, i.e. in Germany and Spain. The rest of the cases were projects located in the UK. The two cases in the other partners' countries involved a factory project and a residential project. There were no unusual complexities in the nature of projects involved, and also they were not motivated by the competitive environments. This indicates that there is a tendency for a UK Contractor to participate in a JV with another EC partner, and in the partner's country, when there exists no great competition.

The JVs involving projects in the UK were of differing types such as: bridges (2 cases), a leisure complex, a basement car park, an embassy building, and a sewer project. The nature of the projects was varied such that this study could not possibly compare "like with like" cases. Therefore, the
study focused on the perceptions of the UK Contractors who had experience joint venturing with other EC partners. However, the Eight cases were all 50-50 JVs. In this sense, they were all alike.

The "convenience" nature of the sampling in this study is unavoidable due to the lack of and the varied nature of the JV projects available for this study. However, the cross-sectional study of the varied cases can be usefully developed through a common measure of success based on the ten goals adopted by this study. These are the JVs' goals and expectations.

In the analysis of these goals, the perceptions of the participants on the degree to which the JV goals and expectations were met were strongly correlated with their views upon the overall performance of the JVs. This indicates the importance of the goals in assessing the JV success. Thus, although subjective assessment was used, it is not an unacceptable means of assessing success. However, an objective measure of success, such as profitability, is not always the sole measure of success.

The small sample size limits this study from pursuing a more rigorous analysis of variables such as factor analysis. The use of a single case study as proposed by Parkhe (1993a) is also not quite relevant because of the need to visualise the cross-section of the varied cases, especially at the
initial understanding of the JVs. Field research is not possible due to the duration required for such longitudinal research. Hence, a survey research method was used to gather data from the right people who have experience in joint venturing with other EC partners to develop an understanding of the critical JV features.

The variables that are commonly used in the theory of organisation are chosen to be tested for the perceived associations with each other as well as with some performance variables. This discussion examines the result of the data analysis, particularly emphasising the relationships between variables. The strength of the variables in relation to the success of the JVs are to be considered as most important in the discussion. The consequence of this discussion is to identify the critical variables perceived by the participants of this study as the determinants of success, or otherwise, of the JVs.

Structuring of JVs is often related to the various strategies pertaining to the environments, i.e. within the sponsoring firms, the market and the project requirements. This study is concerned with the implementation of JVs and focuses less on those strategies. Instead, managing a JV is the main focus of this study.

Managing the JVs becomes the main objective of this study. Hence, structuring of the JVs is concerned with how the
partners interacted within the JV and how much they really shared with each other in their commitments toward the success of the JVs. This is the main theme of the discussion that follows.

8.2 : Implementation of Construction JVs

In general, the discussion of the literature review is limited to the applicability of several organisational theoretical approaches to the study of JV organisations. The difference in the nature of JV organisations in relation to the ordinary organisations, requires the focus on the JV organisations to be reviewed. It is incomplete to focus on a JV organisation without considering the partners' relationship. Although it is also important to consider the process of the construction work, it is not the main issue of this investigation. The main issue is the interaction of the partners in complementing each other in implementing the JV project.

Prior to the focusing on a study for JV, there is a need to search for an appropriate conceptual base that can provide a basis for explaining JVs. There are quite a number of topics on JVs but mostly concerned with the industries other than the Construction Industry. The lack of literature in the Construction Industry indicates a low interest in the subject. There could be a reason that can explain why this
is so when the idea of JV appears only recently to be a growing concern. This low interest is also an indication that there is a need to provide a much more rigorous empirical research into the construction JVs, especially in the EC and other international undertakings.

At this stage there is a strong indication that the literature in construction JVs is at most descriptive. This is mainly concerned with the features of the general environment of the Construction Industry of a particular country. Thus, the determinants of success and failure of JVs are not readily understood. The concern on the JV relationships is strong. The implementation of a JV must be studied within the aspects of the organisation and the team in relation to the desired structure of the partners' relationship.

This study was set up to attempt to give a conceptual meaning to the understanding of the EC construction JVs involving the UK Contractors with other EC partners. This concept is tested by operationalising several organisational variables relating to the performance of the JV relationships.

A construction project is concerned with one particular product which involves a diverse range of co-ordinated activities to be completed within a specified time period. A JV is concerned with managing this project based on the negotiated intention of the partnership formed. Therefore, a
JV project is a combination of these two objectives, i.e. the obligation to complete the project in the specified time and to fulfil other objectives of the partnership.

It is a short-term activity and the target is based on a certainty of product which can be programmed and not affected by further variation in market conditions, except for the supply of materials, plant and equipment, manpower and financial capacity, during its production process. The task of managing the JV project is simply a management of the project which the partners would pursue in a concerted effort.

Though the literature focuses on inter-dependence and interaction, very little is empirically tested to the degree of interaction intra-organisationally between partners. This study on JV organisation concentrates upon a "single entity" and the effectiveness of bringing about such entity from the different features of the partners' origins. This is basically being represented by the concept of interaction between partners. This is investigated at the three levels or layers of organisation, i.e. structure, organisation and team. Each of these layers is represented by sub-variables which are associated with the interaction of the partners intra-organisationally. There are differences which cannot be discounted such as parents' entities and cultural differences. Hence, there is a need to understand the nature of the interactions within the JV relationships and their associations with the success of the JVs.
8.3: The success of Joint Ventures

The preconception of the term success is needed before a measure of success of JVs can be produced. This is inevitable since different people view success in different ways. Although many people view success from the profitability point of view, there are cases where profit is not the only criterion for success. In a JV, success may be related to the strength of the partnership which in reality is not necessarily concomitant to profitability. The strength of a partnership is defined in terms of the relationship between the partners.

There are cases where the relationships between the JV partners were initially strong but the overall JV performances were low. In other words, a strong relationship is not concomitant to a high profitability. The need to establish a relationship with the partner with only a satisfactory level of profitability could be a main motive for forming a JV. In such a situation, the success of establishing the relationship is expected to be high. Of course, it is difficult to know exactly how much of the success in one criterion over another in relative terms. Therefore, each criterion is measured separately based on how each is perceived as important as a goal to the JV in relation to another before the final aggregate of their importance could be known.
A JV partnership is often formed for a co-operation to secure project. This objective must be satisfactorily fulfilled by the partners during its implementation. The relationship between the partners must be sustained. However, the partners cannot sacrifice the relationship for purely personal gain because that gain may not even materialise without a sustained relationship.

There is a strong indication that the JVs studied had strong agreements upon building up relationships in the establishment of their respective JVs. This is a rational move made by the various JVs studied. However, this was achieved with some varied degree of success. These amounts are required to be measured by this study based on the difference between the outcomes and expectations of the JVs. The expectations and outcomes were measured on the same ten goals.

The points assigned to the expectation of the goals and the ratings on the outcome of the goals (or goal attainment) were computed for their differences. The differences were drawn in a chart to enable us to see the pattern of success of the respective JVs. They did show a pattern of profitability from the high success to the low success JVs (refer figure 7.1). Other goals appeared to be fairly consistent with the pattern of profitability.
The significant correlation between the overall performance and the goal attainments (both from different measurements) indicates the association of the variables as a pattern of success that is useful for the remainder of this study. The balance between the use of project goals and the partnership goals seemed to be justified in determining the level of success of the JVs. The more goals considered in the measure of organisational effectiveness is often useful to produce a more comprehensive measure.

8.4 : Structure of Interaction

The eight cases available for this study were all 50-50 JVs. These involved equal profit and liability. When conditions call for equality, a partnership works best in a 50-50 structure. The search for the JV cases from the major international construction companies in the UK was made, and 8 cases were found and which were willing to participate in the study. All these were JVs with a 50-50 share for profit and liability. This is in line with the general view that a 50-50 joint venture is becoming a more acceptable structure for stability. This has been accepted as a JV structure that can create a spirit of true partnership. It gives the partners the opportunity to affect all decisions equally. This also indicates that there were great benefits for the 50-50 JVs amongst the UK and other European partners in joint venturing. The stronger-weaker relationship of unequal
JVs tends to be generally unacceptable since there was no single case found in the JVs between the UK Contractors and other EC partners studied. Furthermore, all the 8 participants agreed very strongly that the JVs were for equal profit and liability.

Is this the only structure being adopted in the international JVs participated by the UK Contractors with other foreign partners? This question is left to be answered, but this study can confirm strongly that JVs with other EC partners at the time of the study were all based on equality. The reason could simply be the need for the partners to affect all decisions equally, i.e. the reason for shared ownership and control.

The 8 cases were all successful JVs to a certain extent, and they differ in terms of the extent of placing the equality within the JV. Where is the right place to stress the equality in a 50-50 JV? Two major spaces are often considered. One is the "contribution" and the other is the "commitment". However, this study only measures the extent of the contribution between partners on expertise and resources. This is then associated with the pattern of success as well as the variables which are related to the partners' interactions.
The resource requirement does not necessarily become complicated as long as the partners initially agreed at the outset as to their tangible contributions to the project. In a JV, this alone is not enough. Another contribution comes in the form of valued intangibles such as technology, market knowledge, or staff skills which are critical to the venture's strengths. There is no easy way to price such intangible inputs. A partner cannot readily know whether another partner has given his best support with regard to the intangible inputs until their interactions have been going on for some times. However, most importantly, being on an equal footing gives parents the same incentive to contribute.

Mutual adjustment is often necessary during the progress of work to suit the immediate need of the project. Mutuality must be symmetrical, balanced and compatible to the extent that the partners can comfortably agree with each other in their decision-making process. The difficulty is often emphasised with regard to a shared decision-making as well as in reaching the agreements and the partners' consensus. This difficulty often leads to people avoiding a JV with a 50-50 share, without realising that in reality this is the dynamic that is warranted for a successful JV. This is supported by this study and is discussed in the next section.
A way for tackling the co-ordination problem between the various sub-contracting groups is being adopted by some clients through the domestic JVs. This is often not the case for JVs at the international level. An international JV is mainly considered as a way to manage a project together by the co-operating companies, especially when complementarity is the main motive of the co-operation. Project co-ordination is crucial in any construction project due to the existence of several separate tasks and operations that are required to be put together systematically and effectively, but the immediate attention of a JV is often being focused on the relationship of the partners. The extent that the partners complement one another is crucial to the overall JV performance. This is the assumption that this study is focusing on.

Managing a JV project is the task of putting the operations into order through the partners' consensus. The way of doing it may differ between the partners, or one partner may upset the other partner by making their interactions static. This situation may bring instability to the partnership, and consequently, affecting the overall performance of the JV.

Therefore, equality is inevitable in construction international JV, particularly when it involves a JV between the UK Contractor with other EC partner in a horizontal integration. The pattern coincides with the evidence found by Bleeke and Ernst (1991) which showed that
joint ventures with an even split of ownership have a higher success rate (60% success rate) than those in which one partner holds a majority stake (31% success rate).

The trend on equality of ownership seems to be the same in both the international JVs in manufacturing and Construction. Fifty-fifty ownership is important for another reason: it builds trust by ensuring that each partner is concerned about the other’s success, or in the words of Stephen Levy, former head of Japan operations and a board member at Motorola, "Each partner has a stake in mutual success" (Lewis, 1990). However, Lewis said: "equal ownership and equal rights do not make them act as equals; 50-50 is not so much a magic number as it is an attitude about co-operation". This is verified in this study which, in terms of the sharing of personnel, had no necessity for the JVs to contribute equally. The rational that is acceptable to all the JVs was that the selection of personnel must be based on the ground of experience, skill and competence.

The fact that a 50-50 JV is becoming popular is an indication that the attitude about co-operation is heading for equality within the JV organisation. There would be critical decision-making situations such as in the financial matters of project. This is considered as one of the three most critical task of managing the JV project by the 8 participants of this study as shown by the total figures in
The other two more critical tasks are the project planning and the site operational control. The JV partners must ensure that, to achieve success, they must provide the necessary interactive performance without neglecting mutuality in the concerted effort.

There are JVs by the UK Contractors with partners from other countries outside Europe involving other equity structure. This was often the case where the local partner was required for local knowledge and language purposes with very little need for technical and management abilities. In general, equality structure is a way towards obtaining success in a JV because it gives partners the opportunity to affect all decisions equally. The need to have a 50-50 JV should be a motivation for a symmetrical relationship otherwise other option for co-operation would have been chosen.

A key condition of structuring the JV for success is the sharing between partners. The "sharing" is derived from the intent to have an effect on each other by working close together. It is not practical for a partner involves in a construction JV without being an active partner, especially in a 50-50 JV. The partners must contribute and commit in the actual operation of the JV, otherwise conflict between partners can arise. However, the intent of the partners in establishing the JV is a crucial determinant of the extent of their involvements in the JV.
The need to share is to contribute and commit to the extent that the partners had agreed at the outset. When equality is considered for a JV, the contribution and commitment must be balanced. This study focuses on the degree of interaction desired as a measure of the intensity of the sharing in expertise and resources which are the main elements of co-operation and complementarity of the EC construction JVs. This is a critical point about sharing which manifests the partners' status on equality.

The amount of sharing in expertise and resources being the measure of interaction structure of the JVs in this study helps to provide an understanding on the degree of interaction desired. The more the partners intent to share expertise and resources, the higher is the level of interaction. A high level of interaction means that there is a high effect on each other.

The fact is, each partner helps each other for the benefit of the partners. Therefore, low interaction would be a situation where the partners do not have effect on each other very much though the intent of the partnership is a 50-50 share. The consequence would be a low trust and eventually a low level of success. This is proven in this study where the degree of interaction is strongly correlated with the pattern of success (at p<.01).
8.5 : Organisation

The more critical aspects of organisation of a JV is the relationship between the partners. The attributes of the co-operation and the desired interactions of the partners in the JVs highlighted some organisational characteristics. These are tested to understand their effects on the pattern of success.

8.5.1 : Distribution of personnel

The hierarchy of authority is usually the main concern of organisation literature. The allocation of personnel in construction JV is not linked to bureaucratic concern. The urgency in a JV organisation is on skill and expertise rather than formal position. However, there is a need to balance the distribution of personnel since a 50-50 JV stresses on equality. This dimension of equality is related to the personnel contribution. This was found to be no significant correlation with the pattern of success in both the shared executive staff and the shared supporting staff.

It is expected that the sharing on the executive staff would be more critical to the success of the JVs than the supporting staff. This is found to be supported by this study. However, the correlation between the sharing of executive staff and the Overall performance and the Goal
Attainments were both in negative directions. This indicates that there is a tendency for the high success JVs to have a low sharing in the number of executive staff. This is also shown in table 7.38 where the mean rank of the High SUCCESS is lower than the mean rank of the LOW SUCCESS for this variable (Shared Executive Staff). Although the correlation is not statistically significant, the effect could affect other organisational variables such as trust. There is a very low and negative correlation of the sharing in executive staff with trust (coefficient= -.0617).

However, there are two variables which are significantly correlated with the shared executive staff. These variables were negatively related to the power resources, i.e. task superiority (p<.01) and skill power (p<.05). Therefore, the shared executive staff was strongly and negatively associated with power. This indicates that high executive staff sharing is associated with low power. This is also in line with the level of success attained, i.e. high success with low sharing in the number of executive staff.

The shared Supporting staff were similarly treated, but the only significant relationship is with skill power (p<.10) in a negative direction. In table 7.38, the shared supporting staff has a higher mean rank in the HIGH SUCCESS group than the LOW SUCCESS group, though with no statistically significant difference. In general, the indication is that the success of the JVs is high when the shared executive staff is low but high on the shared supporting staff.
8.5.2 : Autonomy

A general theory for a successful JV is that it has to be free from parents' interferences and to maintain its own autonomy. This is not the case for construction JVs. There is no indication of strong correlation with the pattern of success. The coefficient .1509 with Goal Attainment, and .1643 with the Overall Performance (refer table 7.37). The HIGH and LOW SUCCESS groups do not indicate much difference in autonomy. The mean rank of the HIGH SUCCESS group is 4.25 as compared to the mean rank of 4.75 for the LOW SUCCESS group (refer table 7.38).

Parents involvements existed especially in the smaller construction JV projects. These JVs were being represented by the owners of the parent companies in the JV board. When the owners themselves were representing the JV boards, the parents' influences were inevitable. This made the definition of autonomy based on the parent-venture relationship as inaccurate.

However, in reality the partners should be able to limit the JV organisation to the common objectives of the JV as agreed at the outset without bringing into the JV other unanticipated objectives which could be biased toward the objectives of the parent companies unless agreed by the partners for the benefit of the JV and their relationships. Autonomy in the large JV projects seemed to be very high.
As the President of a successful U.S.-based JV put it, "The best way for parents to make a JV work is to give it the resources it needs, put someone they trust in charge, and leave him or her alone to do the job." (Bleeke and Ernst, 1991). This has its limit because an employer eventually is required to make certain important decisions.

Parent companies usually hold the responsibility for decisions about equity financing and overall governance structure, but the operating decisions were made by the managers whose main responsibility were on the JV projects. The JV board was represented by the directors or the senior officers of the parent companies with the same number of persons from each parent. This was the link between the parent and the venture. This was usually comprised of between two to three people each. The JV board became the highest decision-making level where the Project Managers had to report on the progress of works, and to present the various proposals for further operations. The JV boards met every month or every two months. These were revealed by all the JV cases.

In the differentiated JVs, the partners' roles were separated. Thus, the partners made full use of the JV board to discuss and to make decisions but sometimes the task of managing the project was not shared very much. To some extent the roles of the partners in managing the JV projects were imbalanced such that one partner is playing more of
this role than the other. This is the consequence of the differentiated role structure where management function is a specialised role of one partner.

There is no significant relationship of this variable with other variables as shown in table 7.37. However, autonomy and trust has a quite strong negative correlation, i.e. a coefficient of -.5936. It also has about a similar correlation with the shared supporting staff, i.e. a coefficient of -.5900. This indicates that trust is negatively associated with the JV's autonomy, i.e. a high trust with a low autonomy or vice versa. This also indicates that the JV autonomy is negatively associated with the shared supporting staff, i.e. high in the sharing of supporting staff with low autonomy. Thus, a low autonomy JV tended to be associated with a high trust and shared supporting staff.

The autonomy of the JVs studied indicated that the large JV projects were higher than the small JV projects. Hence, small JV projects could be associated with high trust and shared supporting staff. This is quite obvious in the sense that the relationships of the small parents can be much closer than the large parents. The shared supporting staff was high in small JVs due to small project size because the need for a large number of executive staff was not justified.
8.5.3 : Decision-Making Process

The decision-making process is an important organisational issue for success. The outcomes of this process affect the whole organisation. The decision-making process is more critical in JV than in a single ownership organisation. The 50-50 JV is the most difficult situation but this does not necessarily mean an "unhealthy" situation. This study indicates a strong positive correlation between decision-making problem with the overall Performance and Goal Attainment (both at p<.05). This indicates that the high success was associated with high decision-making problems.

However, there is an indication that the low success cases were more likely to have a high shared executive staff. The decision-making process and the overall performance could have been affected by the high sharing in the executive staff. A low sharing of the executive staff with high shared decision-making process should be considered in the structure of interaction of a JV.

A horizontal structure should be encouraged in the JVs with the different task groups comprising of leaders of the different origins. The number of the tasks operated should be balanced between the partners though their roles are determined based on their expertise. This had been practised by case number 1 which was considered as having the highest
success amongst the 8 cases studied. The reverse of this is true for case number 8 which was placed as the lowest success JV amongst the 8 cases studied.

8.5.4 : Power Resources

A 50-50 JV should be balanced and no partner should be more dominant than another. Power is a status-related resource which relates to the JV as a result of the relative skill contribution of the partners and the number of tasks one partner's origin is greater than another. These are referred to as "skill power" and "task superiority" of the partners respectively. The "skill power" and "task superiority" can be agreed by the partners at the outset to be imbalanced as the means to operate the JV, such as the JV other than with the 50-50 share. However, if a 50-50 share is the structure for a JV, the imbalanced "skill power" and "task superiority" may lead to the problem of trust between partners.

Case number 8 had this problem and the level of trust was so low as a result. The EC partner seemed to be greater than the UK partner in "task superiority" as well as in the "skill power" (refer table 7.22). When the dominance in power is planned and agreed for the benefit of the project, power is a resourceful contribution to the JV, otherwise, negative attitude by the other partner may consequently
develop. However, even when power is used in the positive manner, the tendency for it to become negative cannot be denied. It all depends on how the power is carried out by the superior partner and how the partners understand their differences and the way they overcome these differences. This is also an important aspect of the dynamics of interaction between the partners.

In this study, there are no significant correlation between the "skill power" and either the "overall performance" or the "goal attainment". The coefficients were both very low and in negative directions (coefficients of -.0261 and -.0120 respectively), but the "task superiority" is having quite a high positive correlation coefficient, though not statistically significant, on both the "overall performance" and the "goal attainment" (.5544 and .5455 respectively). This indicates that the success of the JVs was more critical in terms of the "task superiority" than the "skill power".

In other words, for a successful JV, the number of tasks which one partner's origin dominates the other partner must be high. This is what the UK Contractors perceived for successful JVs. Since the perceptions of the UK contractors were being studied, this could be biased towards their favour and the reverse might be obtained from the perceptions of the other EC partners. Another reason could be that since most of the JVs were located in the UK there would be a tendency for the high participation by the UK origins in most of the JV tasks.
Power is an area of human interaction which has attracted a large number of empirical research. The impression on organisational power is changing as the mode of interaction changes. In a study of joint ventures, the point is to be made clear that the motive for interaction by the partners must be in a co-operative and complementary manner where concerted effort is the prime function in managing the JV. A balanced opportunity in such an effort should always exist without even a slightest impression by any partner that it is being distorted. This is difficult to practise but the message that can be derived from this result is that for successful JVs "skill power" was not critical but "task superiority" was quite critical.

8.5.5 : Communication

Communication is crucial in an organisation theory. This study focuses on the attributes of the communication process rather than the system. The problems of communication between partners indicate the weakness of the communication process. The interaction of partners is the main motive of this study, hence, the level of communication problem faced by the JVs reflects the level of interaction problem.

The communication problem was measured based on the "language" and the barrier to the transmission of information, i.e. the "withholding of information" by the
partners. These two effects combined together seemed to have no strong correlation to the pattern of success. However, the strongest correlation coefficient was -.6280 (p<.10) which was with "trust". This indicates that communication and trust were significantly correlated at p<.10. The direction of the relationship was negative indicating a high trust with a low communication problem or a vice versa.

The communication problem was having a correlation coefficient of -.3006 with the structure of interaction, indicating a high interaction (based on the sharing of expertise and resources) was associated with a low communication problem. Earlier, it has been said that the decision-making was difficult with the high interaction, but this tends to have a low communication problem between partners.

8.6 : Team

Understanding "team" is a way of understanding how good the partners operate the JV together. The team "members' characteristics" and "leader's personality" were used to measure "team". These measures were correlated with the "overall performance" and the "goal attainment" which indicated that both have strong positive correlations with each of these, i.e. "members' characteristics" was correlated with "overall performance" at p<.05, and with
"goal attainment" at p<.01. Similarly, "leader's personality" was also correlated strongly with "overall performance" at p<.05, and with "goal attainment" at p<.01.

"Members characteristics" was also correlated strongly and positively with "interaction structure" at p<.10. "Leader's personality" was not correlated strongly with "interaction structure" but the correlation coefficient was quite high (i.e. .5427). This indicates that "team" was strongly correlated with the "interaction structure".

"Decision-making" was also correlated positively with both "members' characteristics" and "leader's personality" at p<.05. These significant correlations indicate that the "team" was being strongly associated with the decision-making process. This reflects that the team, which is defined in terms of the origins of the partners, has a strong implication on the decision-making process. This also reflects the importance of interaction between the partners.

"Members' characteristics" and "leader's personality" were both having quite a high positive correlation with "trust" and "task superiority", though not statistically significant. The "shared executive staff" was negatively correlated with both "Leader's personality" and "members' characteristics". These were not strongly correlated. The "shared supporting staff" was also not strongly correlated to both "leader's personality" and "members'
characteristics”. "Communication problem" was negatively associated (low correlation) with "leader's personality". It also has a very low correlation with "members' characteristics".

In general, the effectiveness of team in relation to the success of JV is very critical. "Team" was critical against variables such as decision-making, trust, task superiority, shared executive staff, and structure of interaction. The "leader's personality" and team "members' characteristics" were both critical to the success of the JVs. Furthermore, strong positive correlations were found between the "team spirit" as well as the "co-operation effectiveness" with the "overall performance" (both at p<.01), and with the "goal attainment" (both at p<.05).

Therefore, the JVs in construction between the UK Contractors and other EC partners were very critical at the team level in achieving success. The stronger the "leader's personality" and the "members' characteristics" would lead the JV to a greater success. The strong association of "team" to the success of the JV indicates the need to further understand the origins of the partners concerned. This is related to the question of which origin most suitable for a JV partner to the UK Contractors. This is not part of this study.
The leader's personality was critical to the interaction between the partners. Team members were also critical to the "interaction structure". Therefore, the selection of the leaders and team members must be carefully assessed so that a good team can be created from the partners' origins. Therefore, teamwork based on the origins of the partners is critical to the success of the EC JVs. A focus on such teamwork in a greater depth would be an area of study worth pursuing in future JV research.

8.7 : Trust

Trust is included as a useful variable particularly when the partners' relationships are considered. This is to be associated with the other variables mentioned earlier in order to understand how the variables are associated with trust. This is the covert element of a relationship.

Trust is an important feature that must exist between the partners. Without trust a JV is not capable of progressing. Trust must be built and sustained. There seems to be only one variable, i.e. Communication problem, which has significant correlation (p<.10) with the success of the JVs. "Trust" has the lowest correlation coefficient with "interaction structure" (coefficient=.1227) indicating that "interaction structure" was not related to "trust".
"Interaction structure" is defined in terms of the sharing of expertise and resources. The low correlation of the "interaction structure" with "trust" indicates that the "interaction structure" could be more related to the need of the project rather than the relationship of the partners.

However, "trust" was not strongly correlated with other variables (as shown in table 7.37) but some of the variables with quite strong correlations are listed as follows:

- "goal attainment" with the coefficient=.4364,
- "overall performance" with coefficient=.3630,
- "decision-making" with coefficient=.4814,
- "leaders' personalities" with coefficient=.3879,
- "team members' characteristics" with coefficient=.3355

"Autonomy" was negatively correlated with "trust" (coefficient= -.5936). This indicates that "autonomy" was quite strongly associated with "trust" but in a negative direction. This has been discussed earlier that "autonomy" tended to be high in the large JV projects. Therefore, the level of trust must have been associated with the size of the JV organisation (or project size). Due to large project size, the level of trust was not very high compared to the small JV projects. In other words, the relationships of the partners in the small JV projects were having a higher trust level compared to the JVs with larger projects.
The perceptions of the participants on "trust" could have been moderated (a social desirability effect during the interviews) by them throughout the interview to protect their image in joint venturing. However, these 8 cases were successful JVs as perceived by the participants, hence, the level of trust must exist to some extent within all the JVs. This was indicated by the relatively strong correlation of the variable "trust" with other variables, except with the following:

- "interaction structure" (coefficient= .1227),
- "shared executive staff" (coefficient= -.0617),
- "skill power" (coefficient= -.0964),
- "task superiority" (coefficient=.0915).

The "shared supporting staff" has quite a high negative correlation (coefficient= -.3515) with "trust". This indicates a tendency for the high trust JVs to have low sharing in the supporting staff. If the high trust JVs were those with the small projects (as discussed above), then it would be justified by the size of the project that the partners did not require a high sharing in the number of staff.

A specific research in JV relationship to understand the true nature of the trust would be very useful. Since trust is an important element of the JVs, there is a need to be more open in the relationship of the partners in a JV. Due
to the short-term duration of the JVs in construction, the adaptability process would be a variable which could have an influential effect upon trust. Such variable could be an area worth studying. This would be in terms of the development of the relationship from day one until the completion of a project.

8.8 : Management tasks

The seven management tasks used in this study are Design, Planning, Financial Control, Material Control, Plant Control, Site Operation Control and General Administration. In the ratings on the "Order of Importance" (refer table 7.40) of the task, the participants emphasised the Financial Control as the most important task and Site Operational Control as the second important and the Project Planning as the third, whereas the total emphasis on the tasks through the various perceptions on the various items as shown in table 7.40 indicate that the most important task is the Site Operation Control followed by Project Planning and Financial Control. These three task may be considered as the most critical tasks of managing the JV projects.

There was no wide variations in the difference between the "total" and the "order of importance" as shown in table 7.40. These two variables were correlated and a very strong positive correlation existed, i.e. coefficient=.7857 and
significance at p<.05. This indicates that there was a strong association between the attributes of the tasks and the perceived importance of the tasks to the success of the JVs. Therefore, there is a tendency that the more important the task is perceived, the more the attributes of the task is being associated to it.

8.9 : Findings of the study

From the data analysis and the discussions, the general findings of the study are presented in this section.

The 8 cases studied had strongly agreed that planned long-term relationship was the strongest reason for their JVs compared to other reasons (refer table 6.3). However, when the participants were asked to rate their future JVs with the same EC partners in the EC partners' countries, the responses were not very encouraging though preferences were indicated by the participants (refer table 6.7).

Cases no.5 and 8 did not prefer to have the same partnership in the EC partners' countries. This could indicate either a frustration or that they were never keen to work in a JV in the EC partner's country. Since case no.5 was an on-going project which was at an early stage of construction, frustration was not strongly suspected. Thus, they were not in favour of working in a JV in the EC partner's country.
For case no.3, frustration was suspected and the JV was never shown to have a concern for establishing the relationship for future JVs.

Risks and uncertainties were not considered as partner's related issues. Instead, they were related to the normal project issues. When JV partners do not consider the partnership as a risk, trust may be considered as high. They believe that they can work together. However, case no.1 indicated that the relationship between partners was not an easy one but they survived with the greatest JV success. This appeared to be the result of their concern for the relationship and they were rewarded with high success.

The point to be raised at this initial stage of understanding of a construction JV is that the concern for the success of the JV must be followed by building up the relationship between partners. Some people might regard this as of no major importance but this study indicates that this had led to the achievement of a fruitful effort. However, haggling over the contract terms and conditions may present negative influences on relationships. The practicality of the relationship must be the point to be observed, not what had been written on paper. No matter how good a relationship is regulated on paper, the actual relationship may fail without proper treatment of the actual interaction.
When a relationship is in a JV form, a contract should not be regarded as the engine that would make the JV work. The contract can function through other relationships which are used to bind the loose associations together. The mere concern over the conditions of contract in responding to matters pertaining to the relationship is itself a heavy strain on the relationship. Therefore, the contractual agreement should be referred to only when the relationship is in great difficulty, otherwise room for discussion should remain open at all times.

In construction, the need to form a JV arises from the desire to work together within a temporary organisation to undertake a construction project in a manner that would justify the benefit to the partners. The justification is relative to the choice of doing it alone. As a JV is a desire to act in concert, the actual operation of the JV must satisfy this desire. The desire must be reflected in every aspect of the relationship, particularly in managing the project because a JV is a relationship for managing combined skills and resources. The data of this study correlates the shared skills and resources with the pattern of success of the JVs.
Based on this as the structure of relationships for the implementation of the construction JVs, the general findings of the study are briefly outlined as follows:

1. The measure of success based on the ten goals tended to provide an indication of the overall performance of the JVs. The pattern shown in figure 7.1 indicates the extent of achievements of the JVs when the differences between the degrees of outcomes and expectations of the ten goals were illustrated.

2. The success of the integrated JVs varied and appeared to be associated with how well their interactive structures performed, based on the sharing of expertise and resources.

3. The differentiated JVs tended to be highly successful.

4. The structure of interaction based on the sharing of resources and expertise was correlated strongly with the pattern of success. This indicates that success is associated with the intensity of shared resources and expertise. The more the sharing is imbalanced, the lower the level of success tends to be.

5. The intensity of the shared executive staff tends to be higher for the integrated JVs than for the differentiated JVs. The higher the level of sharing of
the executive staff in the integrated JVs, the less successful they tend to be.

6. A similar pattern existed in the shared supporting staff with the shared executive staff. This indicates that there is a tendency for the integrated JVs to be less successful when the level of shared executive or supporting staff is high.

7. The belief that the greater the number of shared staff, leads to a greater tendency for conflict can be accepted as more likely to be the consequence.

8. Autonomy has appeared to have no significant association with the pattern of success. Autonomy seems to be high with large projects. The small sized projects were more likely to involve owners of parent companies who were mainly the participants of this study. Their perceptions on autonomy might be influenced by their presence in both the parent companies and the JV boards. Hence, their ratings on JV autonomy were low.

9. The higher the positive decision-making process, the greater the tendency for success. The positive interaction at the decision-making process appears to be crucial for JV success.
10. There was no clear association of both skill power and tasks' superiority based on the partners' origins on the level of success.

11. There seems to be no clear association between the extent of communication problems and the pattern of success.

12. Both leaders' personalities and team members' characteristics of the management tasks of the JVs have significant correlations with the pattern of success.

13. Trust was not always clearly associated with success, but there is an indication that, by excluding cases no. 5 and 6 which had extremely high degrees of trust but only moderate success, the other cases were strongly associated with the level of success. That is, high degrees of trust related to high success and low degrees of trust related to low success.

14. Generally, managing the tasks of the construction JVs indicates no clear difference from the normal construction activity. This is an indication that there is no substantial variation in the implementation of JV project from the ordinary non-JV project. This strengthens the importance in the study of the interaction within the JV relationships.
8.10 : Implications for Future JVs

The findings of this study have certain implications for the practice of future JVs in the Construction Industry, particularly, the 50-50 JVs between the UK Contractors with other European partners:

1. Since equality is the motive of interactions desired in this type of JV, the level of sharing must be specifically and carefully considered. This is to be especially considered in managing the JVs. In neglecting this, the effect on the level of success would be detrimental. The sharing at the structure level, as indicated by this study, had shown a strong relationship between the sharing of expertise and resources with success.

2. The leaders' abilities and personalities (such as their abilities to interact across cultural boundaries and their concerned for the partners' relationships through shared skills and responsibilities in managing the JV projects) as well as the team members' characteristics (consisting of the partners' representatives who have the right blend of skills and can interact effectively between the different origins) were found to be critical to the success of the JVs. This has implications for the selection of partner(s) as well as the building of the partnership as the JV progresses.
3. Decision-making between the partners is very critical to the success of the JVs. The on-going decision points (or decision nodes) are important at the 3 levels of structure, organisation and team so that fully interactive processes can contribute greatly to effective decision-making and to potential JV success. This has the implication that the partners to a JV should consider their interactive commitments in all aspects of managing the JV to the fullest possible level of understanding in order to build the relationship and contribute to the success of the project.

4. Although the statistical tests on the data from this investigation were inconclusive with regard to the inter-cultural factors of the JVs studied, nevertheless careful attention ought to be given to ensuring that the managers in international JVs are knowledgeable about cultural differences and capable of operating successfully across cultural boundaries.

5. The investigation has shown the need to achieve effectiveness within both the JV structure and the JV organisation. Efficiency can then be achieved at the level of the management team during implementation and operation of the JV business.

Generally, from these implications of the study upon the Construction Industry, the view concerning a JV should be
made very clear. This involves a hybrid arrangement for a temporary project basis. Therefore, it does not make a JV much easier to be dealt with based on only a purely contractual relationship or on trust. Something more meaningful to the relationship must always exist. This study indicates that the partners' interactions have considerable influences on each other and on the level of success of JVs. Hence, a greater emphasis on these effective interactions must be given in future JVs.
CHAPTER 9

CONCLUSION AND RECOMMENDATIONS
FOR FUTURE RESEARCH
CHAPTER 9

CONCLUSIONS AND RECOMMENDATION
FOR FUTURE RESEARCH

9.1 : Introduction

This chapter presents the conclusive part of the thesis. This includes a brief summary of the study, major findings, conclusion, and recommendation for future research.

9.2 : Summary of the Study

The main objective of this study was to understand the nature of the Construction Joint Ventures between the UK Contractors with other European partners. The limitation of the number of JVs available for this study made it difficult to gain deeper and more reliable insights from a much larger sample. The need to investigate these cases from the perceptions of the key informants was necessary since this study relied on the completed JV projects. This enabled the study on the performance of the JVs to be carried out.

International JVs in Construction are viewed as a co-operation to achieve common objectives between companies of one country's origin with another country's origin. This
study focused on the JVs between the UK Contractors and other EC partners. The different origins of the partners caused differences in cultural values, practices, language and attitudes. These made the task of managing a project more difficult. Due to these difficulties there were more critical factors for the success of the JVs.

The need to adapt and adjust between partners in a short duration of time is quite difficult, and the urgency of the project delivery could affect the JV relationship if the partners do not consider developing their relationship seriously. A badly formed partnership is detrimental to the success of the JV. This cannot be denied, hence, this study attempted to investigate how influential the quality of the interaction within the partnership was upon the pattern of success of the JVs.

The investigation was based on the need to understand the relationships of the various interactions of the partners using the appropriate variables at the structure, organisation and team levels of the JV organisations. These levels representing the natural layers in understanding an organisation. The patterns of association of the variables against the pattern of success would be the main findings that are needed to provide the answers to this study.
9.3 : Major Findings

This section seeks to test the hypotheses of the study. The tests of hypotheses are based on the various results obtained earlier in the data analysis, given in chapter 7, as well as the summary and discussion presented in chapter 8 in order to indicate the influencing relationships within the JVs. The confirmation of the results against the hypotheses is the main purpose of this section.

The hypotheses of the study, as presented in chapter 5, are to be assessed as follows:

H1 : The international construction JVs, particularly between the UK Contractors and other EC partners, are formed for particular project purposes between the partners, to interact in co-operative ventures by sharing expertise and resources specific to the project and which influence the level of success of these JVs.

From section 8.7, the findings of the study are outlined. Finding no.4 is specifically related to this hypothesis and it is supported. By proving that the sharing of expertise and resources has a strong correlation with the pattern of success indicates that the interaction between partners in a JV must be motivated by such an attitude in order to achieve success. This also determines the extent of the sharing to be considered by the partners. A highly successful JV is to
be associated with a structure of highly shared expertise and resources. In this study, a highly shared structure is also interpreted as a balanced structure.

Another piece of supporting evidence concerning structure which contributes to this major finding is the associations of the integrated and the differentiated JVs to the pattern of success. In section 8.7 (2) and (3), the findings indicate that the differentiated JVs tend to be highly successful though the sharing of expertise and resources varied, but the integrated JVs also tended to vary in the extent of the shared expertise and resources but with varying success. This indicates that the integrated JVs are more sensitive to the level of shared expertise and resources (Refer tables 7.8 and 7.9).

The second hypothesis stated:

H2 : The appropriate characteristics of all the organisational variables related to the partners' interactions influence the level of success.

The variables used to examine this hypothesis are discussed in section 4.7. In section 8.7 (5), (6), (7), (8), (9), (10) and (11) are related to this hypothesis. Trust is an element of interaction which is inherently essential to the overall features of the partnerships. Therefore, it is included in examining this hypothesis. This is presented in section 8.7 (13).
The variables are deduced to have the appropriate characteristics that would influence the degree of success. However, there appeared to be no significant correlation in any of the variables against the pattern of success except the decision-making process (refer table 7.37).

However, table 7.38 shows that the groups of high and low success have the following tendencies upon the variables:

- the shared executive staff tends to be low to achieve high success,
- the supporting staff tends to be high to achieve high success,
- autonomy tends to be low to achieve high success,
- decision-making process (measured as decision-making problems) tends to be high to achieve high success,
- skill power tends to be low to achieve high success,
- task superiority tends to be high to achieve high success,
- communication problem tends to be low to achieve high success,
- trust tends to be high to achieve high success.

The lack of significant differences in the variables on the levels of success, as shown in table 7.38 indicates that the variables were perceived as important to all the JVs studied, but that they were not considered as the critical influences on the pattern of success. In this sense, this hypothesis is disproved. The organisational variables are important to all JVs.
This is an indication that the variables used in examining the interactions at the organisation level are all considered as useful for JVs but the decision-making process is considered as a critical variable for a highly successful outcome. The correlation suggests that the greater the decision-making problem (due to the greater interactive structure), the higher the success achieved. This indicates the dynamics of interaction in the construction JVs which should not be undermined for greater JV achievement.

The third hypothesis stated:

H3 : The team members' characteristics and the leaders' personalities are strongly related to the level of success.

The results in tables 7.37, 7.38 and in section 8.7 (12) show that this hypothesis is supported. Therefore, teamwork based on the interaction of the partners' origins in managing a JV is crucial in achieving a high JV success. The leadership personality and members characteristics that were used in assessing the team for the JVs were perceived as important variables in such interactions.
The fourth hypothesis stated:

H4: The relationship of the partners, as represented in their ability to effectively interact within the appropriate patterns of the JV structure, the organisation and the team is the key to JV success.

Having examined the previous 3 hypotheses, this fourth hypothesis is supported by all the evidence shown above. Generally, the variables at the organisation level were shown (table 7.38) to have been without significant differences in the pattern of success. This only indicates their common importance to either the HIGH SUCCESS or LOW SUCCESS JVs. In other words, the variables at the organisation level are all important to all successful JVs, but the variables that were having significant relationship with the pattern of success (in table 7.37) are to be considered as more critical to the overall JV performances.

However, the interactive structure in the sharing of expertise and resources, the shared decision-making process, and the team interaction could be emphasised and shown that together they are the keys to JV success as perceived by the participants in this study.
9.4 : Conclusion

The views concerning JVs have often been wrongly focused in the Construction Industry. Even the participants in this study had indicated that the approach to managing the JVs (refer section 8.7 (14)) did not have any clear differences with the normal non-JV management of construction projects. These participants had also indicated the seriousness of the JV relationships in relation to the overall JV performance.

This is a matter of human differences. The JV organisations must really focus on the form that is best suited to the human interactions. The partners should feel comfortable and to have an effective interaction. Some difficulties are inevitable but as long as the JV is balanced, the JV environment would be harmonised towards achieving a high rate of success.

The dynamics of interaction are the main aspect which can be conceptualised for the purpose of defining a JV and this seems to have a strong relationship with the overall performance of all the JVs studied. Hence, the need to explore and develop this concept deeper appeared to be an effort well worth considering in order to verify the various conditions for JV relationships and their successful implementations.
This investigation has looked at the internal behaviour of construction JVs probably for the first time. It has provided clear evidence that for the 8 cases studied the quality of interactive activities within these JVs strongly influences the degree of success achieved.

Due to the strong indications of the relationship between the interaction outcomes against the pattern of success, the interaction problems should be given more attention in future research, particularly the inter-organisational relations which are often referred to by several contractors as "fully integrated JVs".

9.5 : Recommendations for future research

The following are the recommendations for future research:

1. An understanding of JVs can be defined in many ways. Broadly speaking, they are related to the concept of JV that is being advocated here. If a JV is defined as a co-operative entity, the interactive structure of the JV becomes crucial in enhancing the success of the relationship and eventually the overall performance of the JV. This study has proven that there is a strong association between the success of the JV relationships and the overall
performance of the JVs. The view in Construction is obscure in relation to the environment for complementarity, inter-dependence, reciprocity and many other elements of relationships which have not yet been rigorously developed to provide a much clearer definition of JVs in the Construction Industry. Understanding the structures of JVs in various construction environments would be an immediate focus for future research, due to the importance of this knowledge to implementing the JVs more successfully.

2. The nature of international construction JVs with the general JVs, may be different due to the fundamental intent of co-operation in their environments where large differences in cultural, political and social backgrounds exist. However, the effectiveness of the co-operation is not only in gaining compatibility of the partnership on these differences but must also be successful in sustaining the relationship in achieving common objectives. How far the partners' objectives are really common objectives? This is crucial to be clarified at the very beginning of the formation of a JV. A thorough study on these issues would be worth attempting in future research to confirm its implications upon the partners' interactions and the outcomes of the JVs.
3. Organisationally and operationally JVs are found to be critical in the way the partners participate and are committed to the roles within the JV. The various role structures within JVs in this study are varied in nature and as such comparative studies of "like with like" could be more useful in future research. This could be done by extending to a wider scope of study (macro) of JVs around the world or a deeper study (micro) on each type of role structure of the JVs. The focus on the integrated JVs requires urgent research due to its sensitive effect on the overall JV performance. The differentiated role structured JVs could be a basis for a model of successful JVs particularly in the EC JVs. Of course, a rigorous research is required to confirm this finding.

4. Research on construction JVs in a wider context rather than specific to the EC countries should be worth considering to enable further tests on the very important interaction concept of JVs.

5. The dynamics of interaction has to be considered from the effectiveness of the teamwork based on the group of the partners' origins. The test on personality using the Myers-Briggs (1975) Indicator would be another step toward strengthening the effect of personality in JV interactions.
These recommendations are based on the immediate needs emerging from this study. Other areas of research meaningful to various current construction environments are not denied, such as technology transfer, but the initial needs for greater knowledge of JVs must be well identified, supported and the relevant research vigorously pursued.
REFERENCES

AND

SELECTED BIBLIOGRAPHY
REFERENCES AND SELECTED BIBLIOGRAPHY


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APPENDIX 1

FIRST SURVEY QUESTIONNAIRE
Dear

Research Programme into the Joint Venturing Experiences of U.K. Construction Companies

Attached is a letter and a questionnaire from Mr Yussuf who is carrying out research into the above topic under my supervision.

We are aware that it can be very difficult for busy executives to find time to complete questionnaires of this type. However, the research in question is part of a broader research programme into joint venturing in construction and we shall be very grateful if you will assist us in this interesting research by completing and returning the questionnaire in the envelope enclosed.

We should like to assure you that all information provided to us within this research programme will be treated in the strictest confidence. If you have any doubts or queries then please do not hesitate to contact me direct. Alternatively, if you wish feedback from the research findings, particularly after the data have been analysed, then please inform me.

Thank you for your assistance.

Yours sincerely

[Signature]

Professor V B Torrance

12 March 1992
Dear

Re: Research into Joint Ventures in the Construction Industry

I am undertaking a research programme in the area mentioned above under the supervision of Professor V B Torrance, Civil Engineering Department, Loughborough University of Technology.

Generally speaking, the term "joint venture" can be defined as: "Temporary organisations of two or more parties operating as single entities under joint control for prescribed and limited purposes". This definition acts as a guide for any mixed views regarding the subject that I am dealing with in this programme. If any other definition best describes your activities, please write it in Section A (1.4) of the questionnaire attached to this letter.

I am writing to gain your support by completing the questionnaire and returning it to me by using the self-addressed envelope attached. The completed study should provide a useful impartial review of the joint venture practices in the U.K. Construction Industry. Since an empirical study in this area is greatly needed, it gives me great pleasure in inviting you to participate and any information given will be treated as strictly confidential.

Even if your company has never been a party to any form of joint venture, we shall be grateful if you will answer the questions in Sections A, C and D. On the other hand, if your company has been a party to a joint venture, please answer all questions except those in Section C.

Thank you in advance for any support which you may give and I look forward to hearing from you.

Your cooperation is highly appreciated. Thank you.

Yours sincerely

[Signature]

Mohd. Yussuf Izzadin Mohd. Ali

12 March 1992
SECTION A
(For All Participants)

1.0 Background Information:

1.1 Company's name and address:

_________________________________________
_________________________________________
_________________________________________

1.2 Nature of business:

Please tick (✓) where appropriate

* Residential Buildings' Contractor [ ]
* Non-Residential Buildings' Contractor [ ]
* Civil Engineering Contractor [ ]
* Specialist Sub-Contractor [ ]
* Consultant [ ]
* Project Manager [ ]
* Material Supplier [ ]
* Plant/Machinery Supplier [ ]
* Other (Please specify)

_________________________________________
[ ]

1.3 Types of projects completed (in percentages):

(i) Residential Buildings : ______
(ii) Commercial Buildings : ______
(iii) Industrial Buildings : ______
(iv) Public Buildings : ______
(v) Civil Engineering Works : ______
(vi) Other works : ______

Total 100 %

1.4 If you have a different opinion of the definition of 'Joint venture' given in the covering letter, please state your definition below:

_________________________________________
_________________________________________
_________________________________________

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SECTION B
(For companies with joint venture experience)

2.0 Involvement in Joint Ventures:

2.1 Please tick your company's experience in joint venturing:

(i) International Joint Venture [ ]
(ii) Domestic Joint Venture [ ]

2.2 Please tick the types of joint venture projects undertaken by your company:

(Please tick where appropriate)

(i) Residential Buildings [ ]
(ii) Commercial Buildings [ ]
(iii) Industrial Buildings [ ]
(iv) Public Buildings [ ]
(v) Civil Engineering Works [ ]
(vi) Other Works (Please Specify):

2.3 How many joint ventures has your company participated in?

(i) Less than 4 [ ]
(ii) Between 4 and 6 [ ]
(iii) More than 6 [ ]

2.4 Did your company carry out joint ventures in the following years?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>(i) 1970s</td>
<td>[ ]</td>
</tr>
<tr>
<td>(ii) 1980s</td>
<td>[ ]</td>
</tr>
<tr>
<td>(iii) 1990s (until today)</td>
<td>[ ]</td>
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</tbody>
</table>
Note: In the following questions where Priority Rating is requested as 1 to 5, please use 5 as highest and 1 as lowest.

2.5 Please mark your ratings according to your priority the following objectives desired to be achieved through joint ventures:

Please tick (√) where appropriate

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>(i) New market opportunity</td>
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<tr>
<td>(ii) Profit</td>
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<tr>
<td>(iii) Cooperation</td>
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<td>(iv) Quality of work</td>
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<td>(v) Time of completion</td>
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<tr>
<td>(vi) Other (Please specify):</td>
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</table>

2.6 Please rate the following reasons for the joint venturing of your company:

Please tick (√) where appropriate

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<th>1</th>
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<th>3</th>
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<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Financial</td>
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<tr>
<td>(ii) Technology</td>
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<td>(iii) Skill and Experience</td>
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<td>(iv) Knowledge/Information</td>
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<tr>
<td>(v) Business Expansion/ Economies of Scale</td>
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<tr>
<td>(vi) New market opportunity</td>
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<td>(vii) Competitive Advantage</td>
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<tr>
<td>(viii) Market Share</td>
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<tr>
<td>(ix) Sharing of Risk</td>
<td></td>
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<td>(x) Coordination of works</td>
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<tr>
<td>(xi) Sharing of resources</td>
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<td>(xii) Other (Please specify):</td>
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</table>

2.7 Who was/were your joint venture partner(s)? If you joined a foreign partner, please tick (√) in column 'FP':

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>FP</th>
</tr>
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<tr>
<td>(i)</td>
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</thead>
<tbody>
<tr>
<td>(i) Client</td>
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<tr>
<td>(ii) General Contractor</td>
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<tr>
<td>(iii) Consultant (e.g. Architect)</td>
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<tr>
<td>(iv) Project Management Consultant</td>
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<tr>
<td>(v) Specialist Sub-Contractor</td>
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<tr>
<td>(vi) Supplier</td>
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<td>(vii) Other (Please specify):</td>
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</tbody>
</table>

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2.8 Please rate the partner(s) stated above in accordance with your priorities for favourable and successful partnership in joint venturing. Please begin with the highest priority:

(i) _______________ (v) _______________
(ii) _______________ (vi) _______________
(iii) _______________ (vii) _______________
(iv) _______________ (ix) _______________
(v) _______________ (x) _______________

2.9 Please state how many joint ventures involved were in the following categories:

(i) Equity Joint Ventures: __________
(ii) Non-Equity Joint Ventures: __________

2.10 If your company were involved in Equity Joint Ventures, please state the equity structure (e.g. 50-50, 60-40, etc) with the number of joint ventures. Please mark MJ if you were the MAJORITY PARTNER or MN if you were the MINORITY PARTNER or ES if EQUAL SHARE, in the box provided:

<table>
<thead>
<tr>
<th>EQUITY STRUCTURE</th>
<th>NO. OF JOINT VENTURES</th>
<th>SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td></td>
<td></td>
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<tr>
<td>(ii)</td>
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<td>(iii)</td>
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<td>(iv)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.11 If your company was involved in Non-Equity Joint Venturing please list below the basis of your joint venture(s):

(i) __________________________
(ii) __________________________
(iii) __________________________
(iv) __________________________

2.12 From your experience, please mark your ratings (1 to 6) for each of the following six criteria, for successful implementation of joint ventures. Please use 6 as the highest priority and 1 as the lowest:

(i) Mutual Understanding [ ]
(ii) Organisational Structure [ ]
(iii) Company's Culture [ ]
(iv) Joint Agreement/Contract [ ]
(v) Communication/Information [ ]
(vi) Decision Making Process [ ]

(Note: Please mark your ratings in order of importance)
SECTION C
(For companies with no experience of joint venturing)

3.0 Since your company has never been a party to a joint venture organisation, please answer the following questions:

3.1 Does your company have any plans or is it considering a joint venture? Please tick(✓) where appropriate.

YES [  ]
NO  [  ]

3.2 Whether your answer above is either YES or NO, please state your reason(s) below:

3.3 In your opinion, how do you rate the following reasons for joint venturing in the current economic situation (i.e. in the recession). Please use 5 as the highest priority and 1 as the lowest.

Please tick(✓) in the appropriate box

1 2 3 4 5

(i) Financial [ ] [ ] [ ] [ ] [ ]
(ii) Technology [ ] [ ] [ ] [ ] [ ]
(iii) Skill/Experience [ ] [ ] [ ] [ ] [ ]
(iv) Knowledge / Information [ ] [ ] [ ] [ ] [ ]
(v) Business expansion (Economies of scale) [ ] [ ] [ ] [ ] [ ]
(vi) New market areas [ ] [ ] [ ] [ ] [ ]
(vii) Competitive advantage [ ] [ ] [ ] [ ] [ ]
(viii) Sharing of risk [ ] [ ] [ ] [ ] [ ]
(ix) Sharing of resources [ ] [ ] [ ] [ ] [ ]
(x) Market share [ ] [ ] [ ] [ ] [ ]
(xi) Coordination of work [ ] [ ] [ ] [ ] [ ]
(xii) Other (Please specify) [ ] [ ] [ ] [ ] [ ]

3.4 In your opinion, how do you rate the following parties acting as your joint venture partner. Please use 5 as the highest priority and 1 as the lowest.

Please tick(✓) in the appropriate box

1 2 3 4 5

(i) The Client [ ] [ ] [ ] [ ] [ ]
(ii) General Contractor [ ] [ ] [ ] [ ] [ ]
(iii) Consultant [ ] [ ] [ ] [ ] [ ]
(iv) Specialist sub-contractor [ ] [ ] [ ] [ ] [ ]
(v) The supplier [ ] [ ] [ ] [ ] [ ]
(vi) Other (Please Specify) [ ] [ ] [ ] [ ] [ ]


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3.5 In your opinion, will you become involved with any form of joint venture even when your existing business opportunities are favourable. Please tick once only.

YES [ ]

NO [ ]

3.6 Whether the answer above is either YES or NO, please state your reason(s):

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

SECTION D
(For all participants)

4.0 General Information:

4.1 Please make general comment on any question put forward and any other relevant point not mentioned anywhere in this questionnaire:

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

4.2 For further analysis of the data available, we might require to visit you for further discussion. This discussion will be structured before-hand to minimise the time of the discussion and to maintain a standard format for the information required. Therefore, we hope it will not take much of your time for the discussion. To proceed with this, please let us know the person that we can contact together with his/her telephone number.

Name:_________________________
Position:_______________________
Tel.:___________________________
APPENDIX 2

SECOND SURVEY QUESTIONNAIRE
Dear Sir

Research Programme into Joint Venture Experience of U.K. Construction Contractors

The above research programme has four distinct features, each being covered by a research assistant. The first study examines the experience of U.K. contractors with U.K. joint venture partners; the second examines U.K. contractors' experience internationally, with a special focus on Saudi Arabia; the third examines experience in South East Asia, with a special focus on Singapore.

The attached letter and short questionnaire from Mr Yussuf concerns the fourth study, which has a special focus on U.K. contractors joint venturing with European partners. We are distributing the attached to all companies on the N.C.G. list. However, it may be that you have already been contacted by one of the other research assistants.

Nevertheless, we shall be most grateful if you will assist us by making the return requested. Your information will be much appreciated and dealt with in strict confidence. Please contact me if you wish further information.

Yours faithfully

Professor V B Torrance
Dear Sir

Re: Research into Joint Ventures by UK Contractors with Other European Contractors

I am writing to seek your assistance with the above research programme. In particular, I would very much like the assistance of those persons who have knowledge of joint venture project(s) with other European contractors either in the UK or anywhere in Europe. To this date, I have sent two sets of survey questionnaires but unfortunately the returns have indicated that only one company has had the appropriate experience required by this research. Since I am recording the past joint venture projects which have been successfully completed, there seems to be an indication that not many companies have recently completed joint venture projects with other European companies.

I have the impression, at this stage, that UK contractors have a limited interest in joint ventures because some companies have projects in Europe but not in the form of joint ventures. Since, globally, joint ventures are becoming more common and experience is showing the benefits to be gained, it will be useful to have more information on patterns and successes of past and current projects.

This letter requests your support and assistance in participating in this research so that appropriate persons can be contacted. This search for the appropriate persons is very important to identify the significant participants among the members of the UK National Contractors Group. So please answer the brief questions attached and return to me as soon as possible to enable us to proceed further with this study.

On behalf of Professor V B Torrance, my Supervisor, and other members of our staff, I thank you in advance for your time and support.

Yours faithfully

Mohd. Yussuf Izzudin Mohd. Ali
RESEARCH INTO JOINT VENTURES BY UK CONTRACTORS WITH OTHER EUROPEAN CONTRACTORS

YOUR COMPANY'S NAME AND ADDRESS:

________________________________________________________________________

________________________________________________________________________

TEL. NO: __________________________________________________________________

A) JOINT VENTURES WITH OTHER EUROPEAN CONTRACTORS:
Has your company had such experience? YES ☐ NO ☐
If YES, any in 1970s? YES ☐ NO ☐
   any in 1980s? YES ☐ NO ☐
   any in 1990s? YES ☐ NO ☐
   any current projects? YES ☐ NO ☐

B) JOINT VENTURES WITH CONTRACTORS IN OTHER, NON-EUROPEAN COUNTRIES:
Has your company had such experience? YES ☐ NO ☐
If YES, in 1970s? YES ☐ NO ☐
   in 1980s? YES ☐ NO ☐
   in 1990s? YES ☐ NO ☐
   Any current projects? YES ☐ NO ☐

Whether your answer is YES or NO, please return this form to us and suggest someone either from your company or from another company who has had this experience, giving his address and/or phone number in the space below. Thank you.

RECOMMENDED NAME AND ADDRESS:
[(A) for European JVs) ______________________________________________________
________________________________________________________________________
Tel No. __________________________________________________________________

PLEASE WRITE DOWN ANY OTHER SUGGESTIONS BELOW:
[(B) for other international JVs)] _____________________________________________
________________________________________________________________________
Tel No. __________________________________________________________________
APPENDIX 3

STRUCTURED INTERVIEW QUESTIONNAIRE
20 April 1993

Dear Sir

Re: Research into Joint Ventures by UK Contractors with other European Contractors

First of all I wish to thank you for your willingness to participate in this research as per our telephone conversation and/or your response to my questionnaire survey recently. This letter is to request an appointment to visit you for an interview which will take about an hour. This interview is necessary as part of the requirement of my data collection. It will involve a structured questionnaire which should be able to be covered in that time.

For your information and as a brief explanation of my research topic mentioned above, I briefly set out below the areas for our discussion during the interview. I hope this will give you some ideas and refresh your memories of your past experience working in a Joint Venture (JV) project.

Since this research is concerned with UK contractors participating in a JV project with other Europeans, it is intended for projects undertaken anywhere in the world as long as the JV partners are British and European. The purpose is to study the relationships between the JV parties working in different environments and countries. It does not matter what construction projects you were dealing with and I would certainly look forward to sharing your experience in a variety of projects that you were involved in. However, I just need to discuss one of your successful JV projects during this interview.

The main areas for our discussion are:

1. The reasons for JV.
2. The type of JV.
3. The JV autonomy and structure.
4. The JV relationship.
5. The performance of JV.
Please telephone me on 0533-660306 to confirm. I look forward to hearing from you and to meeting you. Thank you.

Yours sincerely

Mohd. Yussuf Izzudin Ali
c/o Professor V B Torrance
INTERVIEW QUESTIONNAIRE:

JOINT VENTURES BY THE UK CONTRACTORS WITH OTHER EUROPEAN PARTNERS

RESEARCHER:
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Loughborough,
Leics. LE11 3TU
COMPANY'S BACKGROUND TO JOINT VENTURING.

Name:
Company:
Address and Tel.:

How many years experience working in construction projects?

What year were you first involved in JV project?

How many JV projects involved so far?

How many JVs with other European partners so far?

State all the JV projects that you have been involved in?

<table>
<thead>
<tr>
<th>Type of project</th>
<th>Size of project</th>
<th>Year Started</th>
<th>Year completed</th>
<th>Partner's origin</th>
<th>Project location</th>
</tr>
</thead>
</table>

Select one project, a JV with another European partner (from above). The project selected will be the case to be investigated from here onward.

Type of Project | Your Share of Nature of Project | Position | Profit | Partner's Co.

The client for this project: Public Sector [ ] Private Sector [ ]

How the project was awarded: Negotiated [ ] Tendered [ ]

Was it successful and what make you say so?
Please rate the following questions (1-70) using the rating scale below:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Generally Disagree</td>
<td>Moderately Disagree</td>
<td>Moderately Agree</td>
<td>Generally Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

1. The project was large and it was decided to establish this JV.  1  2  3  4  5  6

2. Your company had planned for JV with foreign company for company's expansion and growth.  1  2  3  4  5  6

3. Your company was given offer to participate in the project as a JV partner.  1  2  3  4  5  6

4. Due to the government policy of the host country which required the project to be done on a JV with a local contractor.  1  2  3  4  5  6

5. Your company had to JV with this partner because you needed his expertise.  1  2  3  4  5  6

6. Your company needed to share the risks of this project.  1  2  3  4  5  6

7. The JV was aimed to gain funding for the project.  1  2  3  4  5  6

8. Your JV partner provided the resources.  1  2  3  4  5  6

9. You needed a local partner for language purposes which would ease communication problem.  1  2  3  4  5  6

10. The JV was to gain competitive advantage.  1  2  3  4  5  6

11. Your company planned to have long-term relationship with this partner for future work.  1  2  3  4  5  6
12. Your expertise was required by your partner.

13. Your company had known the partner before this JV was proposed.

14. Your company is looking forward for more JVs.

15. Your company contributed the resources to the Joint Venture project.

16. Before commencing the JV it was agreed that the risks and uncertainties be resolved as and when they arose.

17. The risks and uncertainties of the JV made it difficult to reach an agreement.

18. The uncertainties were mainly concerning the partner's sincerity and honesty.

19. At the time of establishing this JV your company was operating at normal performance.

20. Project's operational risks and uncertainties remained a normal phenomena as in the case for a single contractor.

21. The work was distributed to the partners based on skills and expertise.

22. Fair distribution of work among partners was made based on the equity share.
23. Fair distribution of work where all parties shared all the work.

24. Each partner in this JV contributed to specific section of the work as agreed, and were solely responsible and accountable for it.

25. The JV agreement had a strict penalty for the party not fulfilling their obligations.

26. The risks of the JV strict agreement were reduced by some informal alternative measures.

27. Liability was agreed to be equally shared.

28. Mutual commitment by the partners was not explicit in the agreement.

29. "Evergreen Clause" where renegotiation is possible was included in the agreement.

30. The JV autonomy was given to the JV Management Board.

31. Parent companies had voices in this JV.

32. Authority was equally shared by the partners.

33. Decisions agreed were respected by each other.

34. All problems were resolved within the JV Management Board.

35. Trust between partners built the JV cohesion.
36. Each partner respected each other's customs and practices. 

37. The roles played by the partners were treated as confidential from one another. 

38. The number of staff and other workers was not equally divided between partners. 

39. Combined skills were required only on certain sections of the works. 

40. Latent conflict between partners was encountered. 

41. Partners had suspicion on each other's behaviour. 

42. Sometimes you had to take advantage of your partner to secure your own benefit and you believed your partner did the same thing. 

43. Despite your initial agreement, mutual adjustments in terms of the share of resource contributions between partners had to be made. 

44. The structure had been designed to share authority and to be equally involved in the same risks. 

45. All actions were strictly adhered to the hierarchy of the JV structure. 

46. The design of the organisational structure must be adapted to take account of local practices.
47. Sharing decisions between partners was a heavy load for the project to carry.

48. There was flexibility in decision making and action.

49. Responsibilities on both sides were clearly defined and delegated.

50. Cooperation was effective.

51. New commitments to the JV structure were inevitable during the course of the work.

52. Designating a lead partner simplified decisions in managing particular risks.

53. The partnership was of a pair of champions who shared a vision and planted mutual trust and dedication.

54. Leadership skills was more important than formal position.

55. Positive attitudes of partners played a significant role in the JV success.

56. The team spirit was wonderful.

57. Task sharing was reducing from top management downwards.

58. The desire to learn each other's culture and practices was strong.
59. The procedure for settling disputes was initially agreed and respected.

60. Actions leading to embarrassment to the other partner were mutually avoided.

61. The presence of one party in another EC Country working in a JV project did not lead to any significant difficulties.

62. Conflicts were often resolved merely on compromise rather than relying on the formal processes.

63. The JV Organisational structure initially set was never changed throughout the project.

64. The interaction of the parties with different cultural values in this project were highly dynamic, adaptable and integrated.

65. Significant changes in the JV system were inevitable due to some unanticipated shortcomings.

66. Major changes were not tolerated by partners.

67. Client's intervention was intolerable.

68. Economic situations of the partners' countries was a constraint.

69. Political situations of the partners' countries was a constraint.

70. Cultural differences was a constraint.
71. **Please illustrate briefly your JV organisational chart below.**
72. Survey addressing Goals and Performance:

Listed below are a number of pairs of POSSIBLE JV GOALS. You are asked to divide 10 points between each pair, INDICATING THE GOAL THAT YOU THINK IS MOST IMPORTANT by assigning a LARGER amount to that item. For example, if you consider "Complete on Time and Within Budget" to be about twice as important as "Maximising Profit" you could assign a 7 and a 3 (or if only slightly more important, 6 and 4). Remember that the total must be equal to 10 for each pair. For equal importance assign 5-5.

e.g. _6_ Complete on Time and Within Budget.

| Total | 10 |

There are no duplications in the following list.

1. ___ Complete on Time and Within Budget ___ Earn Satisfactory Profit
2. ___ Maximising Profit ___ Return on Investment

3. ___ Quality of Work ___ Build Partnership
4. ___ Technology Transfer ___ Integrated Culture & Practices

5. ___ Teamwork ___ Effective Management
6. ___ Earn Satisfactory Profit ___ Quality of Work

7. ___ Maximising Profit ___ Build Partnership
8. ___ Return on Investment ___ Technology Transfer

9. ___ Complete on Time and Within Budget ___ Maximising Profit
10. ___ Build Partnership ___ Earn Satisfactory Profit

11. ___ Integrated Culture & Practices ___ Return on Investment
12. ___ Effective Management ___ Quality of Work

13. ___ Complete on Time and Within Budget ___ Technology Transfer
14. ___ Teamwork ___ Build Partnership

15. ___ Earn Satisfactory Profit ___ Integrated Culture & Practices
16. ___ Maximising Profit ___ Technology Transfer
|   | Return on Investment | Complete on Time and Within Budget | Build Partnership | Teamwork | Quality of Work | Technology Transfer | Integrated Culture & Practice | Maximising Profit | Earn Satisfactory Profit | Effective Management | Integrated Culture & Practice | Teamwork | Quality of Work | Technology Transfer | Maximising Profit | Earn Satisfactory Profit | Effective Management | Integrated Culture & Practice | Teamwork |
| 17. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | |
| 19. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 21. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 23. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 25. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 27. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 29. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 31. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 33. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 35. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 37. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
| 39. |   |   | | |   |   | | |   |   |   | | | | | | | | | | | | |
Please consider the PERFORMANCE of this JV by assessing its achievement of each of the following possible goals. (Please circle the appropriate number).

If a goal is not very important, or not applicable, and you feel that you have devoted sufficient effort to it, then circle (1) and so on depending upon the extent of your effort.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Not Very Successful</th>
<th>Moderately Successful</th>
<th>Very Successful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete on Time &amp; Within Budget</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earn Satisfactory Profit</td>
<td></td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Maximising Profit</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Return on Investment</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Quality of Work</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Build Partnership</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Technology Transfer</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Integrated Culture &amp; Practices</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Teamwork</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Effective Management</td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

How would you rate the overall Performance of this JV?

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are there other goals that you consider important for this JV? Please state:

__________________________________________________________

__________________________________________________________

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73. Questions addressing Task Demand and the teams:

Below are nine key areas of project task. Please rate the demand of the Task Skill between the partners.

The rating scale: 1 = Very Low, 2 = Generally Low, 3 = Moderately Low, 4 = Moderately High, 5 = Generally High, 6 = Very High.

<table>
<thead>
<tr>
<th>The Task Within JV Organisation:</th>
<th>Partner's Origin</th>
<th>Your Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Design</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. Project Planning</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. Financial Control</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. Material Control</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. Plant Control</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. Site Operation Control</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>(Site Supervision)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. General Administration</td>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

The Supporting Task from Outside JV Organisation: (Please state the proportion of their origins).

| 8. Sub-Contractors             |                  |             |
| 9. Material Suppliers          |                  |             |

Please explain the rationale for the selection of key Sub-Contractors and Material Suppliers:
The breakdown of the Executive and Supporting Staff in each task:

Please state the proportion of the executive and supporting staff from the partner’s origin and your origin for each task within the JV Organisation: (alternatively, you may write down the actual number of staff)

<table>
<thead>
<tr>
<th></th>
<th>Executive Staff</th>
<th>Supporting Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Partner's Origin</td>
<td>Your Origin</td>
</tr>
<tr>
<td>1. Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Project Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Financial Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Material Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Plant Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Site Operation Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(site supervision)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. General Administration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The appointment of Main Officials in each task:

Please state the proportion of the main official seconded from parent companies and those hired or contracted and their major origin (If mainly Your Origin state "UK", Partner's origin state "P" or state "O" for other origin).

<table>
<thead>
<tr>
<th>Seconded from Parent Companies</th>
<th>Majority Origin ( % )</th>
<th>Hired or Contracted</th>
<th>Majority Origin ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Project Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Financial Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Material Control</td>
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<td></td>
<td></td>
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<tr>
<td>5. Plant Control</td>
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<td></td>
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<tr>
<td></td>
<td>(Site Supervision)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. General Administration</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Skilled and Unskilled Workers on site:

Please state the proportion of skilled and unskilled workers on site according to their origins:

<table>
<thead>
<tr>
<th>Partner's Origin ( % )</th>
<th>Your Origin ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled Workers</td>
<td></td>
</tr>
<tr>
<td>Unskilled Workers</td>
<td></td>
</tr>
</tbody>
</table>
The Need of each task to the overall JV Success:
Please consider the actual justified needs of the tasks rather than the most ideal needs. Please use the rating scale below:

1=Very Light, 2=Generally Light, 3=Moderately Light, 4=Moderately Heavy, 5=Generally Heavy, 6=Very Heavy.

The task within JV organisation (1) Design (2) Project Planning (3) Financial Control (4) Material Control (5) Plant Control (6) Site Operation Control (7) General Administration

The Task within JV Organisation

In terms of: 1 2 3 4 5 6 7
(Please write the rating number on the lines below for each of these tasks)

1. Need for Expert. ________________________________
2. Need for expenditure control. ________________________________
3. Need for teamwork. ________________________________
4. Need for work progress control. ________________________________
5. Staff training programme. ________________________________
6. Managing risks and uncertainties. ________________________________
7. Need for Quality control. ________________________________
8. Managing conflict. ________________________________
9. Need for bilingual staff. ________________________________
10. Organisational Rules. ________________________________

Please arrange the tasks in order of importance to the overall success of the Joint Venture: (1-7) ________________________________
Please rate the characteristics of team members of each task:

The rating scale:
1=Strongly Disagree, 2=Generally Disagree, 3=Moderately Disagree, 4=Moderately Agree, 5=Generally Agree, 6=Strongly Agree

The task within JV organisation. (1) Design (2) Project Planning (3) Financial Control (4) Material Control (5) Plant Control (6) Site Operation Control (7) General Administration

<table>
<thead>
<tr>
<th>In terms of the outcomes in:</th>
<th>The Task within JV Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

(Please write the rating number on the lines below for each of these tasks)

1. Decision making
2. Division of Labour
3. Learning
4. Progress of work
5. Inter-group interaction
6. Evaluation of Work
7. Controlling Staff turnover
8. Response to change
9. Achieving Productivity
10. Interpersonal relationship
11. Relationship to other partner's culture
12. Communication Problem (withholding of information)
Please rate the **Key Changes occurred** in the task during the course of the work. Please consider the changes to the organisation of the task's group only.

Please use the rating scale below:

1=Very Light, 2=Generally Light, 3=Moderately Light, 4=Moderately Heavy, 5=Generally Heavy, 6=Very Heavy.

<table>
<thead>
<tr>
<th>The Task</th>
<th>The Change</th>
<th>Main Reason for the change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Design</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>2. Project Planning</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>3. Financial Control</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>4. Materials Control</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>5. Plant Control</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>6. Site Operation Control (Site Supervision)</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>7. General Administration</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>8. Sub-Contractors</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>9. Material Suppliers</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
74. Questions addressing the PERSONALITY of the leaders of the teams:
   Please assess the personality of each team leader for each task.

   The rating scale:
   1=Strongly Disagree, 2=Generally Disagree, 3=Moderately Disagree,
   4=Moderately Agree, 5=Generally Agree, 6=Strongly Agree.

   The task within JV organisation:
   (1) Design  (2) Project Planning  (3) Financial Control  (4) Material Control
   (5) Plant Control  (6) Site Operation Control*  (7) General Administration
   * (Project Director/Project Manager/Site Manager)

   The Assessment Criteria:

   The Task Within JV Organisation

<p>| | | | | | | |</p>
<table>
<thead>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

   Please insert the leader's origin in the brackets below for each task.
   Please insert 'P' for partner's origin, and 'O' for own origin

   ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

   1. Strived to accomplish something difficult. ___ ___ ___ ___ ___ ___ ___
   2. Strived to master, manipulate or organise physical objects, people or ideas. ___ ___ ___ ___ ___ ___ ___
   3. Worked as rapidly and as independently as possible. ___ ___ ___ ___ ___ ___ ___
   4. Strived to overcome obstacles and attain high standard. ___ ___ ___ ___ ___ ___ ___
   5. Strived to excel in work. ___ ___ ___ ___ ___ ___ ___
   6. Strived to increase self-regard by successful exercise of talent. ___ ___ ___ ___ ___ ___ ___
   7. Responded to threat. ___ ___ ___ ___ ___ ___ ___
   8. Managed stress. ___ ___ ___ ___ ___ ___ ___
   9. Authoritative. ___ ___ ___ ___ ___ ___ ___
   10. Adherence to conventional values. ___ ___ ___ ___ ___ ___ ___
   11. Asserted strength and toughness. ___ ___ ___ ___ ___ ___ ___
   12. Optimistic. ___ ___ ___ ___ ___ ___ ___
   13. Friendly. ___ ___ ___ ___ ___ ___ ___
   14. Tendency to be on the lookout. ___ ___ ___ ___ ___ ___ ___

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15. Tendency to condemn, reject, punish people for violation of work values and ethics.

16. Open minded.

17. Sociable.


20. Easygoing.

21. Liked working in group.

22. Quiet.

23. Acted on the spur of the moment.

24. Carefree.

25. Reserved and distant except to intimate friends.

26. "Looks before he leaps".

27. Takes matters of everyday life with proper seriousness.

28. Craved excitement.

29. Kept feelings under tight control.

30. A reliable person.

31. Trust coworkers.

32. Risk taker.

33. Sharp thinking.

34. Quick learner.

35. Creative.

36. Did more than necessary.

37. Smiling face.

38. Adaptable to cultural differences.

39. Participative.

40. Good Communicator.

Note:
(Questions no. 15, 19, 20, 22, 23, 24, 25 and 28 were treated as negative statements (8 items), and the ratings were deducted from the sum of the ratings on the other questions, i.e. Sum of (40 items - 8 items) minus sum of 8 items = Leader's Personality total points scored.)
75. **FUTURE JV IN THE EC COUNTRIES:**

Based on the current economic and political situations of the EC Countries, and given a choice to undertake a JV project, please state your preference to the EC Countries below based on your personal strategic choice:

**The rating scale:**
- $1=$ **Strongly Not Preferred**
- $2=$ **Generally Not Preferred**
- $3=$ **Moderately Not Preferred**
- $4=$ **Moderately Preferred**
- $5=$ **Generally Preferred**
- $6=$ **Strongly Preferred**

<table>
<thead>
<tr>
<th>The EC Countries:</th>
<th>(Please Circle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Belgium</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. France</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. Spain</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. Portugal</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. Germany</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. Holland</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>7. Italy</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>8. Denmark</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>9. Luxembourg</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. Greece</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>11. Rep.of Ireland</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>12. United Kingdom</td>
<td>1 2 3 4 5 6</td>
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APPENDIX 4

JV ORGANISATION CHARTS
OF THE EIGHT CASES STUDIED
(EXCEPT CASE NO. 6, NOT PROVIDED BY PARTICIPANT)
JV ORGANISATION CHART
FOR CASE No: 1

JV BOARD

CHAIRMEN
(1 UK & 1 P)

UK
(3 Representatives)

P
(3 Representatives)

DIRECTORS
ONE FROM EACH PARTNER.

PROJECT MANAGER
(UK)

PLANNER
(UK)

SITE MANAGER
(P)

QS
(UK)

SECRETARY
(P)

SUPERVISOR
(P)

SUPERVISOR
(P)

SAFETY
(P)

KEY:

UK = UK PARTNER
P = EC PARTNER

416
JV ORGANISATION CHART
FOR CASE NO: 2

MANAGING DIRECTOR
(UK)

PROJECT MANAGER
(UK)

FINANCE MANAGER
(UK)

ENGINEERING MANAGER
(UK)

QUALITY/SAFETY
INSPECTORATE
(UK)

PLANT/TRANSPORT
(UK)

SITE STAFF
(UK & P)

PURCHASING
(UK)

SUBCONTRACTOR
(P)

KEY:
UK = UK PARTNER
P = EC PARTNER - A Specialist Contractor

Note: All JV projects had 50-50 equity share.
JV ORGANISATION CHART
FOR CASE No: 3

JV BOARD
(2 UK & 2 P)

PROJECT MANAGER
(UK)

AGENT
(UK)
MARINE
WORKS
(SUBSTRUCTURE)

AGENT
(P)
SUPERSTRUCTURE
WORKS

CHIEF
ENGINEER
(UK)
ENGINEERING
& PLANNING
(UK & P)

OFFICE MANAGER
(UK)
ADMINISTRATION
(P)

KEY:
UK = UK PARTNER
P = EC PARTNER
JV ORGANISATION CHART
FOR CASE No:4

UK PARTNER
(UK)

EC PARTNER
(P)

JV BOARD
(2 MEMBERS FROM EACH PARTNER)

PROJECT MANAGER
(P)

CONSTRUCTION
(UK)

Q.S.
(UK)

ADMINISTRATION
(EQUAL REPS.)

KEY:
UK = UK PARTNER
P = EC PARTNER
EQUAL REPS. = EQUAL REPRESENTATIVE
JV ORGANISATION CHART
FOR CASE NO: 5

EXECUTIVE BOARD
(1 UK & 1 P)

MANAGEMENT BOARD
(2 UK & 2 P)

PROJECT DIRECTOR
(UK)

DEPUTY PROJECT DIRECTOR
(P)

DEPUTY PROJECT DIRECTOR
(UK)

COMMERCIAL
(UK)

ENGINEERING DESIGN
(P)

CONSTRUCTION
(UK)

KEY:
UK = UK PARTNER
P = EC PARTNER
JV ORGANISATION CHART
FOR CASE No: 7

MAIN BOARDS
(EQUAL REPS.)

JV EXECUTIVE COMMITTEE
(EQUAL REPS.)

OFF-SITE CONTRACT MANAGEMENT
(EQUAL REPS.)

SITE MANAGEMENT
(EQUAL REPS.)

TECHNICAL AND RESOURCES INPUT
(MIXED MEMBERS)

ADMINISTRATION AND RESOURCES INPUT
(MIXED MEMBERS)

KEY:
EQUAL REPS. = EQUAL REPRESENTATIVES

Note: The other European partner was a specialist contractor.
JV ORGANISATION CHART
FOR CASE No: 8

JV BOARD
(2 MEMBERS FROM EACH PARTNER)

PROJECT MANAGER
(UK)

DEPUTY PROJECT MANAGER
(P)

MANAGER SECTION A
(UK)

MANAGER SECTION B
(UK)

COMMERCIAL MANAGER
(P)

MANAGER SECTION C
(P)

MANAGER SECTION D
(P)

ADMINISTRATION
(UK & P)

ACCOUNTS
(UK & P)

COST CONTROL
(UK & P)

KEY:
UK = UK PARTNER
P = EC PARTNER