5.1 A Mixed Method Research Strategy

Mixed method research - the combination of at least one qualitative and at least one quantitative component in a single research project or program has experienced a tremendous increase in popularity in the social, behavioral and related sciences. Even if not by name, by practice it has enjoyed greater popularity over the lifetime of social sciences than most mono method studies (Bergman, 2008).

Rather than simplistic application of this design, or vague inclusion of one method in a larger study carried out using other methods, what is needed is to take advantage of the benefits of using different methods and integrate approaches. Though by itself, mixed method design may not achieve the elusive goal of providing the final judgment on whether a constructivist approach is superior to a more positivist framework, or identify universal causal laws, one of the positive consequences of the increasing popularity of mixed method design is an increased attention of researchers or theorists to fundamental questions relating to research design and how it connects to research questions, data collection, data analysis and interpretation of findings. It has a positive effect on examining current technical and theoretical limits.
According to Tashakkori and Teddlie (2008, p.101), mixed method research has become the “third methodological movement in the social and behavioural sciences, joining the qualitative and quantitative research alternatives.” This conclusion can be drawn when one examines the multiplicity of texts that have been written in the last decade, on this area (e.g. Brewer and Hunter, 1989; 2006; Creswell, 2003; Creswell and Plano-Clark, 2007; Greene and Caracelli, 1997; Tashakkori and Teddlie, 1998; 2003a) and the concerted thrust to developing a distinct methodological orientation in this area.

They state that although there are countless number of ongoing debates about issues like basic definitions, research designs in mixed methods and inference drawing, surprisingly, the interest generated by this method, has led to the development of a Special Interest Group called the American Educational Research Association on Mixed Methods, and a new journal devoted to the field ‘Journal of Mixed Method Research’ by Sage Publications.

5.1.1 Benefits that Result From MMR

Bryman (2007) describes how epistemological and paradigmatic issues have been examined in trying to combine quantitative and qualitative research. A number of books and articles devoted to outlining components and approaches of mixed method research emerged in the 2000s like Creswell (2003) and Johnson and Onwuegbuzie, (2004). He speaks of the need to justify the use of mixed method research and how authors need to specifically describe how mixing, integrating, combining, meshing etc has taken place. Explaining the rationale and outcome of combining approaches is required to increase methodological clarity through which general principles regarding practice and prescription can be honed.

5.1.2 Reasons for Using Mixed Methods

Bryman (2008) has observed that Greene et al (1989) pursuing a context of evaluation research, isolated five justifications for the use of mixed method
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research. These were triangulation, complementarities, development, initiation and expansion. Bryman (2008) has extensively reviewed studies classified as ‘mixed method studies’. On review of the methodological writings and research articles employing the same, the following were given as the rationales for doing mixed method research

a) \textit{Triangulation}- to enable findings or greater validity- combining quantitative and qualitative findings for mutual corroboration.

b) \textit{Offset}- the strengths or weaknesses of each kind of data (qualitative or quantitative) means that combining them enables weaknesses to be offset.

c) \textit{Completeness}- the aim is to bring out a more comprehensive account of the area of enquiry by using more than one method.

d) \textit{Process}- an account of strictures in social life as well as process is described by use of two methods.

e) \textit{Different research questions}- this can be studied by the use of different research methods.

f) \textit{Unexpected results}- when one method generates surprising results, these can be explored by employing other methods.

g) \textit{Instrument development}- qualitative research is employed to develop questionnaire and scale items- which then are used to collect data in a second quantitative phase

5.1.3 Specific Outcomes of the Use of MMR

Tashakkori and Teddlie (2008) using a combination of sources described the purposes of mixed method research as falling under these broad objectives:
Table 5.1: Purposes for Mixed methods based on several sources

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementarity</td>
<td>Mixed methods are utilized in order to gain complementary views about the same phenomenon or relationship. Research questions for the two strands of the mixed study address related aspects of the same phenomenon.</td>
</tr>
<tr>
<td>Completeness</td>
<td>Mixed method designs are utilized in order to make sure a complete picture of the phenomenon is obtained. The full picture is more meaningful than each of the components.</td>
</tr>
<tr>
<td>Developmental</td>
<td>Questions for one strand emerge from the inferences of a previous one (sequential mixed methods), or one strand provides hypothesis to be tested in the next one.</td>
</tr>
<tr>
<td>Expansion</td>
<td>Mixed methods are used in order to expand or explain the understanding obtained in a previous strand of a study.</td>
</tr>
<tr>
<td>Corroboration/</td>
<td>Mixed methods are used in order to assess the credibility of inferences obtained from one approach (strand). There usually are exploratory and explanatory/confirmatory questions.</td>
</tr>
<tr>
<td>Confirmation</td>
<td></td>
</tr>
<tr>
<td>Compensation</td>
<td>Mixed methods enable the researcher to compensate for the weaknesses of one approach by utilizing the other. For example, errors in one type of data would be reduced by the other. (Johnson and Turner, 2003)</td>
</tr>
<tr>
<td>Diversity</td>
<td>Mixed methods are used with the hope of obtaining divergent pictures of the same phenomenon. These divergent findings would ideally be compared and contrasted.</td>
</tr>
</tbody>
</table>

Source: Table constructed on the basis of several sources including Greene et al. (1989), Patton (2002), Tashakkori and Teddlie (2003a), Creswell (2003) and Rossman and Wilson (1985) Taken from Tashakkori and Teddlie, ( 2008, p103)

5.2 Types of MMR Designs

Creswell and Plano Clark, (2007, ch.5) have discussed four major designs, two of which are conducted concurrently (Triangulation and Embedded) and three that are conducted sequentially (Explanatory, Exploratory and Embedded)
1. Triangulation Design

The triangulation design is a one phase design in which quantitative and qualitative data are collected and analyzed in parallel and merged together to develop a complete understanding or to compare different results. In embedded designs a secondary dataset is taken from another method. E.g. a qualitative component taken in an experimental study.

2. Concurrent Embedded Design

Figure 5.1: Concurrent mixed methods Designs

3. Sequential Embedded Design

Figure 5.2: Sequential Mixed Method Designs
In sequential designs, the qualitative and quantitative data collection is implemented in different phases and is connected in some way. Explanatory designs start with quantitative methods then follow up with qualitative methods to offer better explanations into phenomena. In sequential exploratory designs, qualitative methods are used to explore the topic and in a second, quantitative phase the initial results are tested or generalized. In embedded designs that are sequential, qualitative data is collected before or after an intervention.

5.2.1 Specific Type of MMR Design Used in the Study

The study uses a *sequential exploratory design* as there were two distinct needs. The topic needed to be explored with the help of qualitative methods and a second quantitative phase was considered as crucial to corroborate the results and complement the study findings. The first phase that was carried out used a qualitative research method that has been well accepted in business and social research. The *case study research method* has been used extensively in social science research – including the traditional disciplines (psychology, sociology, political science, anthropology, history and economics) as well as in practice oriented fields such as urban planning, public administration, public policy, management science, social work and education. For understanding the Kannur home furnishing industry’s value chain linkages, it becomes necessary to observe how these linkages operate in reality, as firms trade internationally, and manufacture or source products and activities to meet the needs of developed country markets, and retailers. This need provided the justification to use a case research methodology, for the first qualitative phase or strand of mixed method research, and follow it with a second quantitative phase that was a *descriptive attitudinal survey*.

5.2.3 Benefits Sought From the Use of this Design

The reason for utilizing mixed methods is directly dependent on the purpose for which the mixing of approaches was deemed necessary for the study. In the study, the decision to use mixed methods was decided upon because the research
questions were more exploratory in nature. They were also rigorous. A peripheral understanding that may be obtained by the use of a superficial data collection method like a questionnaire based attitudinal survey alone would not be adequate to understand the constructs in its totality. Besides, the constructs of the value chain, according to the approach of the Value Chain Analysis Manual are best understood using interviews as an appropriate method of data collection.

Understanding the sources of rent, the intensity and sources of governance and the upgrading that occurs in manufacturing firms require a deliberate and detailed interaction with firms. Depth of discussion and exhaustive questioning calls for establishing a rapport with key decision makers or managers in firms and comprehensive interviews.

The researcher felt that this would be achievable through the use of the case study research method to ‘explore’ the research questions. This is in addition to the document analysis and use of reports and already existing printed information, would provide a multifaceted insight into the linkages of the export firms.

It was hoped that the results of a descriptive attitudinal survey of a sample of firms in the study area would help to corroborate the case study results and complement the research endeavor.

5.3 Sequential Design Issues and Strategies

According to Creswell et al (2008), methodological issues in sequential design that need consideration relate to selecting a sample, building results, implementing forms of data collection and resolving contradictions.

5.3.1 Sample Participant Issues

In sequential designs, an important concern is about whether the same or different participants need to be selected for two phases of the project (quantitative and qualitative). A second aspect is regarding the number of participants in each phase. An agreed upon guideline is that size of the two samples may be unequal-
this is deemed possible because of the objective of the quantitative research is to generalize to a population, while the qualitative phase is to provide an in-depth understanding of a small group of individuals (Creswell & Plano Clark, 2007). Since a direct comparison of samples is not conducted as in concurrent designs, equal sample sizes yields no particular benefit.

### 5.3.2 Criteria for Selection of Participants

With regard to the use of same or different participants, the intent of the sequential design is the deciding factor. In explanatory sequential designs, where the second phase is to help explain the first phase, then a subset of the participants from the first phase needs to be taken for the second qualitative follow up phase. This has been the strategy in a study of teacher’s preparation by Miller et al (1998) and by Way et al (1994) in the study of decision and substance abuse.

In exploratory designs, the individuals in the first stage of data collection are usually different from participants in the second phase. This is because the purpose of the second quantitative phase is to generalize results to a population. In this phase more and varied participants need to be sampled. This strategy has been used by Kulner et al (1999) in their study on information needs of terminally ill patients. Wietzman and Levkoff (2000) used the strategy as well.

A key factor of interest is determining how participants will be selected in second phase of sequential studies. The literature has revealed various options to do this with the key concern being a need to protect anonymity of participants.

In explanatory designs, samples for the second phase can be judged on the basis of significant quantitative results, unexpected non significant results, outliers, extreme cases strong predictor variables, distinguishable demographic characteristics or individuals from different comparison groups.
Way et al (1994) used first phase quantitative survey to select interview participants of the second phase. They belonged to the top ten percent of scores obtained in the first phase. Thorgersen, Ntonmani and Fox (2005) utilized multiple levels of selection, including cluster, self interest and demographic characteristics to enable maximal variation in sample. Baumann (1999) used to the strategy of voluntary participation to include members in the second phase of study.

5.3.3 Decision on Results to be used

An important aspect of multi method research is to determine which results from the qualitative first phase will be used in the second follow up quantitative phase. This is an important concern, if the first phase was to develop an instrument – a questionnaire or schedule to be tested or used as a large sample of a population.

The codes and categories developed as well as the formation of themes and development of an instrument using themes as scaled variables is done (Creswell and Plano Clark, 2007). In exploratory studies this can be used for parts (qualitative and quantitative) of the research.

5.3.4 Decision on When to Implement Qualitative Data Collection

In cases where a largely quantitative intervention design uses qualitative data or quantitative data, in a largely qualitative design, an important issue relates to when to carry out the qualitative data collection. A key directive is to consider purpose for which data is collected.

Donovan et al (2002) in a study of randomized control experimental study on prostrate cancer, carried out the qualitative interview before study began. Rogers et al (2003) in a study of anti psychotic medication- tested in a randomized control trial, as two interventions - did qualitative interviews of individuals after the experiment, to examine their perception about the effectiveness of the interventions.
5.3.5 Contradictory Findings

A key concern related to mixed method research is the occurrence of divergent findings between exploratory and explanatory designs. A strategy to deal with it is to identify and discuss divergent results. This may open up new avenues of research. A second strategy is to add an additional phase to the study to deal with discrepancies (Cresswell et al, 2008).

5.3.6 Other Design Issues

Issues like the skills to conduct mixed method research and the length of time to conduct studies are also relevant to the study. It requires that individual researchers have expertise in both quantitative and qualitative research. Shulha and Wilson (2003) describe importance of a team of collaborating researchers. Sequential designs especially require extensive time, as two phases occur one after the other. Creswell (2005) suggests treating two phases differently with an initial large survey being followed by a smaller qualitative phase (three to four interviews). This has been suggested for Masters and PhD students working within a limited time frame. Webb et al (2002) used open ended questionnaire to elicit qualitative responses.

5.4 Structure of the Sequential Exploratory Mixed Method Design

In sequential designs, the qualitative and quantitative data collection is implemented in different phases and is connected in some way. Explanatory designs start with quantitative methods then follow up with qualitative methods to offer better explanations into phenomena. In sequential exploratory designs, qualitative methods are used to explore the topic and in a second, quantitative phase the initial results are tested or generalized. In embedded designs that are sequential, qualitative data is collected before or after an intervention.

5.4.1 Strands of the Study

The reason for utilizing mixed methods is directly dependent on the purpose for which the mixing of approaches was deemed necessary. In the study, the
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decision to use mixed methods was decided upon because the research questions were more exploratory in nature. They were also rigorous. A peripheral understanding that may be obtained by the use of a superficial data collection method like a questionnaire based attitudinal survey alone would not be adequate enough to understand the constructs in its totality. The constructs of the value chain, are best understood using interviews as an appropriate method of data collection.

Understanding the sources of rent, the intensity and sources of governance and the upgrading that occurs in manufacturing firms require a deliberate and detailed interaction with firms. Depth of discussion and exhaustive questioning calls for establishing a rapport with key decision makers or managers in firms and comprehensive interviews.

The researcher felt that this would be achievable through the use of the case study research method to ‘explore’ the research questions. This is in addition to the document analysis and use of reports and already existing printed information, would provide a multifaceted insight into the linkages of the export firms.

It was hoped that the results of a descriptive attitudinal survey of a sample of firms in the study area would help to corroborate the case study results and complement the research endeavor.

5.4.1.1 Strand I: Multiple Holistic Case Study Research

The study uses a sequential exploratory design as there were two distinct needs. The topic needed to be explored with the help of qualitative methods and a second quantitative phase was considered as crucial to corroborate the results and complement the study findings. The first phase that was carried out used a qualitative research method that has been well accepted in business and social research – the case study research method. The case study method has been used extensively in social science research – including the traditional disciplines (psychology, sociology, political science, anthropology, history and economics) as
well as in practice oriented fields such as urban planning, public administration, public policy, management science, social work and education. To understand the Kannur home furnishing clusters’ value chain linkages, it becomes necessary to observe how these linkages operate in reality, as firms trade internationally, and produce goods for developed country markets and retailers. This also allowed for the rich description and information intensity that is characteristic of qualitative research. This need provided the justification to use a case research methodology, for the first qualitative phase or strand of mixed method research, and follow it with a second quantitative phase that was a descriptive attitudinal survey.

5.4.1.2 Steps Followed in Case Study Research

a. Use of the Case Study Protocol

Rich description of the phenomena under study was obtained by the development of a case study protocol to aid questioning. The interviews with individual case study firms were conducted with help of the protocol which had a format of questions for each value chain construct, like ‘sources of rents’, ‘governance’, ‘trust’, ‘upgrading’, etc. The interview notes were further developed by writing up the interview transcripts (descriptions of the interviews).

b. Isolation of the Codes

A development of case study databases from analysis of the detailed interview transcripts was done next. This was carried out through interpretation of the interview data by the use of qualitative data analysis (QDA) techniques. This included the processes like tagging or coding the data or relevant phrases or statements related to particular constructs. Aspects that may have an effect on these constructs are also coded. ‘Prior codes’ are those which are informed by the theoretical framework. ‘Emergent codes’ represent areas that contribute or have a significant effect on case study outcomes and represent areas that got distilled out of repeated readings of the interview data. Detailed write ups were prepared for each case which became the first part of the case study database.
c. **Categorization of the Codes**

The apriori codes and emergent codes were analyzed separately for each case study, drawing from the case study interview transcripts. This was called individual case analysis. Categorization of these codes into comprehensive headings or integration of codes into categories or broader areas was done next. This was done to pool together specific lines or phrases in the interview data that contributed to or referred to related areas. The specific interviews from which the information was obtained is also mentioned by the interview code. These related areas were put under common heads called categories. The apriori categories and emergent categories were isolated. Individual case study inferences were developed from examining these categories.

d. **Cross Case Analysis**

The next step was the analysis of the three cases in tandem through a cross case analysis. Individual case analysis of the three manufacturing export firms was followed by a cross case analysis. The cross case analysis was done to supplement the findings from individual case analysis and to increase reliability of the study, as suggested by Yin (2003a) and Eisenhardt (1989). The data generated under each category for each of the cases was evaluated in the form of a data array to examine the similarities or the differences between cases by highlighting particular aspects. The aim of the cross case analysis was to enable a literal replication, the true objective of case study research. In the absence of similar or complementary evidence a theoretical replication was called for.

e. **Inferences From Cross Case Analysis**

The cross case analysis was again strengthened by inference building. Inputs from literature were used to provide plausible explanations for specific case outcomes, and the findings were strengthened when all these cases showed similar case outcomes. Cross case inferences were important to strengthen the researcher’s claims, and to increase credibility of the case
study findings. Divergent aspects where there was little similarity were further examined to understand why, and to enable theoretical replication.

5.4.1.3 Descriptive Attitudinal Survey as Strand II

The second strand of the research was the descriptive attitudinal survey of manufacturing export firms. In response to the questions about the reason behind the use of mixed methods, the explanation is: to corroborate research findings, to increase completeness by highlighting different aspects, so that the whole is greater than the sum of its parts. It was also done to complement the case study research findings.

This was especially important as in an Indian context; the mixed method research is still in its infancy and is still in the process of gaining acceptance among social scientists. The use of familiar or more established data collection tools, and the research method it entails, seemed necessary to provide a more complete understanding or picture of the phenomenon under study.

5.4.1.4 Benefits From the Use of the Survey

The main reason for the use of a survey was to enable a complete picture. The full picture would be more meaningful than each of the components. It was also used for the purpose of corroboration or confirmation. This meant that the results or inferences from one strand must be used to assess the credibility of the inferences from the other strand (Tashakkori and Teddlie, 2008: p 105). They call this aspect ‘utilization quality’ or ‘pragmatic quality’ of inferences. This means that inferences made at the end of a study are good only if they address the intended purpose of the study.

To increase the acceptability of the survey findings, parametric tests like the t test for small samples means was used. Non parametric tests were further used because of the population of firms itself was small, and the sample, though representing close to sixty five percent of the registered manufacturing firms in the cluster (registered in the Association of the Manufacturer Exporters of Home
furnishings, examined in 2010), consisted of thirty four firms. Since many statistical tests mandate a minimum sample size of thirty, the alternative was to use non-parametric tests. The sign test, Wilcoxon’s sign rank test, Friedman’s ANOVA and Cochran’s Q were used to assess different survey results.

5.5 Strand I: Case Study Research Method

According to Yin, (1981a, 1981b) cited in Yin (2003: p13) the definition is given thus:

A case study is an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident.

The case study is one method of doing social science research. Other ways that are suggested include experiments, surveys, histories and archival analysis. What methods can be used depends on

a) The type of research question

b) Control an investigator has over actual behavioral events

c) Focus on contemporary as opposed to historical phenomena.

(Yin 2003, p5)

5.5.1 Why Case Studies?

Using case study for research is a challenging endeavor. Among social sciences, it has been used to contribute to knowledge about individual, group, organizational, social political and related phenomena. It has been a common research strategy in psychology, sociology, political science, social work, business and community planning. It has even been used in economics in which structure of a given industry or economy of a city or region may be investigated. (Yin, 2003, p3). Complex social phenomena, personal interactions, contemporary events and day to day work settings retain a holistic and real life context that are characterized by individual life cycles, organizational and managerial processes, changes in life stages and cycles, maturation of industry or international relations,
among others. These require to be understood as a whole, because of the different levels and depths of interactions that occur. This calls for the use of case studies as a research strategy.

5.5.2 When to Use Case Study Designs

It is important to understand what would be required if a case study needed to be done. Can an experiment be done instead, or a survey, a historiography? What decides the method? Yin, (2003, p. 5) states that though the broad objectives of exploration, description or explanation can be ascribed to most methods, there may be overlap. It is important to know why a method should be chosen, and this is best described by the presence or absence of three preconditions as described in the table below.

Table 5.2: Relevant Situations for Different Research strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of Research Question</th>
<th>Requires control of Behavioural events?</th>
<th>Focuses on Contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes/ No</td>
</tr>
<tr>
<td>History</td>
<td>How, why?</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case Study</td>
<td>How, why?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Yin, 2003 p 8

The three aspects that need to be considered in deciding the research strategy are:

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questions which is more explanatory, point to the use of case studies as research strategy. This is because an emphasis is on the operational links that needs to be traced over time, rather than recording just frequencies or incidence.

b) *Extent of control* over behavioral events

c) *Degree of focus* on contemporary as opposed to historical events.

Contemporary events which cannot be manipulated need to be studied by this method. Direct observation of events and interviews of persons involved in events are crucial as a means of obtaining information about phenomena. Case studies need to examine a full variety of evidence - documents artifacts, interviews and observations as the researcher has no control over the phenomena under study. Another aspect highlighted is regarding the nature of the case study enquiry. He emphasizes that because of the multiple variables of interest that exist in a case based enquiry, the study must rely on multiple sources of evidence, with data needing to converge in a triangulating fashion. He also emphasis that a prior development of theoretic propositions is a must to guide data collection and into analysis (Yin, 2003, p 8, 9).

5.5.2.1 Types of Case Study Designs

Yin (2003) discusses the possibility of four designs based on a 2x2 matrix. The four options available for case studies are single case (holistic) designs (Type I), single case (embedded) designs (type 2), multiple case (holistic) designs (type 3) and multiple case (embedded) designs (Type 4):

a) *Single Case Design*: This is useful when the single case represents the critical case in testing a well formulated theory. If a theory has a specified and clear set of propositions and circumstances within which propositions are believed to be true. A single case study can be used to examine whether this holds well or whether an alternate set of explanations may be more relevant.
b) *Holistic versus embedded case studies*: the same study may involve more than one unit of analyses. This means that though the case study may be about a single organization, within it sub units may be studied, like departments, projects, services, or staff records. These would be embedded units in the case study.

**HOLISTIC (Single unit of analysis)**

- **Single case designs**
- **CONTEXT**
- **Multiple case designs**
- **EMBEDDED (multiple units of analysis)**

H

Multiple holistic case designs - each case treated as a whole.

C) *Holistic design*: If the case was examined in totality, it is called a holistic design. Holistic designs are useful when no logical subunits can be identified or relevant theory being studied is itself of a holistic nature. The entire case study may be conducted at an abstract level lacking any clear measures or data.

D) *Multiple case designs*: Disciplines of anthropology and political science have developed single and comparative or multiple case studies as separate methodologies (Eckstein, 1975). However, in the
framework developed by Yin, they are considered as variations of the same methodological framework. Here, more than one case is studied here, for its obvious benefits. The evidence from multiple case studies is considered more compelling and this increases the robustness of the study (Herriot and Firestone, 1983, cited in Yin 2003). It may take extensive time and resources. The logic for studying many cases as opposed to one case is to follow ‘replication’ logic. Multiple cases are considered as multiple experiments. Each case is chosen so that it

- Predicts similar results (a literal replication)
- Predicts contrasting results but for predictable reasons (a theoretical replication)

A sampling logic where more cases would mean extending the findings to the population is not achievable here. What is possible is to examine whether the theoretical framework on the basis of which the case study is done, was observed in all cases chosen. This means that the same theory can be generalized to new cases. This is called a literal replication. If during the course of study the theory appears to need modification as it is not observed in its totality in other cases then a theoretical replication is achieved. A modification needs to be made to the theory.

5.5.2.2 Type of Case Study Design in the Study

A holistic multiple case design is used in the study, where each case represents a single unit of analysis. The manufacturing export firm of home textiles situated in Kannur district is the unit of analysis. Three manufacturing export firms have been chosen as three separate units of analysis. According to Yin (2003) each individual case study consists of a “whole” study, in which convergent evidence is sought regarding facts and conclusions of the case. For each case study, individual case reports and multiple case results must be reported. A complete picture is obtained if each case individually demonstrates an agreement (or disagreement) with theoretical propositions. What was the prediction about each case and the contrasting results if any?
The research design is described as the logic that links the data to be collected and the conclusions to be drawn, to the initial questions of a study. As in other research methods, case studies also need to be logically placed in the sequence of actions required to fulfill research objectives. Though a complete codification of possible design options for cases have not yet been tackled by many authors, Yin (2003) has suggested that for case studies, five components of a research design are especially important.

a) A study’s questions.

b) Its propositions if any. Propositions must reflect an important theoretical issue, or gives indications about where to look for evidence.

c) Its unit of analyses. The logic linking the data to the propositions.

d) The criteria for interpreting the findings.

5.5.2.3 Other Design Issues

In multiple case designs a key issue is how many cases are necessary or sufficient for the study. According to Yin (2003, p. 32) it is “a matter of discretionary, judgmental choice. It can vary from two to three literal replications to five, six or more replications when one wishes to have a high degree of certainty”.

5.6 Case Analysis: Use of Qualitative Data Analysis Techniques
5.6.1 Research Considerations When Using QDA

Seidel (1998) describes the Qualitative data analysis (QDA) process as having the following characteristics

- **Iterative and progressive**- this is because the cycle keeps repeating. When thinking about things you notice new things in the data. This is then collected and thinks about these things. The process appears as an infinite spiral.

- **Recursive**- it is a recursive process because one part can call you back to a previous part. While collecting information you may simultaneously become aware of new things to collect.
Holographic. The process is holographic in that each step in the
process contains the entire process. Mentally collecting and thinking
about things occurs when you first notice things.

Baptiste (2001) argues that all QDA (regardless of methodological or
disciplinary orientation) comprise four interrelated phases: defining the analysis,
classifying data, making connections between data and conveying the message(s).
These phases do not occur as discrete sequential hierarchical steps, they are
iterative, interactive and non-linear.

He stresses that three sets of considerations need to be taken into
consideration during the QDA process. They are a) philosophical b) contextual
and c) design.

According to Baptiste (2001), philosophical considerations refer to the
analysts’ systems of values and beliefs concerning the research in general. This
also includes the analysts’ interests, ideological stance and the theoretical
positions regarding the particular issue or issued under investigation. These
beliefs, values and interests are fairly stable over time and place, and they form the
outer limits of what the particular analyst considers theoretically possible. This
also has an effect on how the analysis is conducted by the researcher and how he
defines and establishes quantity and credibility in his/her research.

Design considerations refer to specific requirements imposed upon the
analytical process by the very nature of the research questions themselves. These
are dependent on purpose of research. A combination of methods may also be
needed. At a conceptual level purpose of research may be divided into broad heads
like descriptive, explanatory, exploratory, predictive, participatory, etc. Merton
(1967) has opined that at the broadest conceptual level the research is conducted to
generate hypothesis or to test them. Different purpose dictates a different method
or combination of methods. If the goal of the analysis is to explore and understand
a phenomenon in its totality, he needs to use a different combination of methods,
strategies and tactics than if he was primarily concerned with explanations or predictions. Based on the combination of design considerations, philosophical and contextual variations there have evolved a large variety of qualitative research methods. These range from phenomenology, ethnography or grounded theory approaches to hermeneutical analysis, semiotics and narrative analysis.

Contextual considerations refer to the situation in which one conducts the research. A limit of time and financial resource could result in a very different analysis than if one had sufficient time, or was not constrained by funding, or academic strictures.

Baptist (2001) has opined that one of the most crucial aspects of QDA analysis is to define the analysis. This deals with how analysts capture record, interpret and convey information. They make decisions on what counts as appropriate and sufficient information and how best to capture record, interpret and convey that information. These decisions begin at the initial conception of the study and proceed through data gathering, reduction and write up. What influences the methods that the researchers use for QDA the most is the ideological and philosophical orientation of the researcher.

5.6.2 Research Paradigms Discussed

The research paradigm refers to the specific cluster of ideological and philosophical assumptions along with accompanying practices (Kuhn, 1970: Lincoln and Guba, 1985, p 15). Paradigms are otherwise called world views – ways of seeing, being and acting in the world.

According to Baptiste (2001) three popular paradigms in qualitative research literature are positivism, interpretivism and constructivism (Denzin and Lincoln, 2000; Lincoln & Guba, 1985; Merriam, 1991, Polkinghorne, 1983). This aspect of the research process is also referred to as considerations of ‘researcher identity’ or role (Crockett, 1973, Lincoln & Guba, 1985, Quigley, 1997; Stake, 1995; cited in Baptiste, 2001). Researchers are guided
by a paradigm (s) and being clear at the outset about one’s philosophical or ideological stance improves the quality of one’s research. He goes so far to say that in defining our roles as analysts, the entire analysis is defined. To define the analysis, four domains need to be examines: ontology, epistemology, axiology and notions of causality.

5.6.3 Philosophical Orientations

5.6.3.1 Ontology

This deal with the question: What does the researcher consider as real? This may be defined in terms of tangibility of the phenomenon, its objectivity or accessibility. It may be expressed in terms of clarity of definition or usability or/and object or phenomenon. Researchers need to be wary about how their notions of reality shape what they do as researchers. In the study an interpreted reflexivity is adopted. This means the sources of rent, governance and upgrading are interpreted from the detailed discussions with research participants. Since the theoretical meanings of these words may be difficult for lay persons to understand, the physical features, representations or circumstances that conveyed the presence or absence of these constructs were enquired about. These questions were prepared in the case study protocol. Researcher reflexivity needed to be employed to some extent, especially in the development of code words, the emergent codes and expression of the evidence.

5.6.3.2 Epistemology

This considers the nature, sources and processes of knowledge and knowing. The nature of knowledge is best understood when the researcher makes clear what terms best denote what he seeks to find out or produce. Is it to be classified as knowledge, meaning, truth, information, data etc? Is the researcher’s goal to discover the single correct answer? Or is it to produce defensible perspectives?
Regarding the sources of knowledge the important questions would be

a) What are appropriate sources of knowledge? Are they behaviors that originate from the senses, or are they beliefs, perceptions, intentions, revelations, etc of people?

b) Is the researcher’s own behavior to be considered? Must the study consider the modes and mechanisms of observation and for capturing and storing data?

Regarding processes of knowing the important questions are

a) Is the researcher’s identity completely separate from the research project?

b) How can the researcher become a pure observer?

c) If pure observation is not desired how can alternatives be reached ethically.

In the epistemology of this study what is attempted to be studied is knowledge about value chain constructs, viewed through research participants’ own interpretations of the same, described as their experiences and their information, conveyed as a truth or reality that the research participants believe in. The researcher identifies specific value chain relationships of each case study as unique and individual to each firm. They are conveyed, however, by interpretations of the research respondents of what they believe to be true expressions of the same, and the researcher identity is separate from the research project, taking only the evidence as conveyed by respondent statements and interview transcripts and attempting to classify it using the typology of the value chain framework used by Kaplinksy and Morris (2001).

5.6.3.3 Axiology

This deals with values and ethics of research. Three issues that need to be considered are

a) Place and role of researcher’s values in research.

b) Role of research subjects.

c) How to use research products.
The Design of the Study

Values of the researcher may influence the process of doing QDA. He needs to examine whether his own personal values influence his analysis, willfully or otherwise. If he does not wish to keep values from influencing analysis, how will he do so?

A second aspect is regarding the role of research subjects. The important considerations are

a) Are research subjects informants or participants? Are they objects to be studied or subjects, having an active decision making role in the study.

b) How involved are the research subjects in the research process?

c) Since participation of research subjects may be risky, how is their confidentiality answered?

The researcher’s identity is kept separate from the study. This is evident on examining the individual case databases. The participation of research subjects was risky since they were involved in disseminating competition intensive information that could be misused. The case study firm identities have been kept confidential by the use of capital letters representing each firm. Individuals within the firm have not been highlighted except for quotes or vignettes. By and large each firm is considered as a whole, as a single unit of analysis, as is characteristic of holistic case studies.

Finally the use of the outcomes or products of research is an important issue. The key issues here are will the findings be generalizable to people who were not part of the study? How can readers make sense of the outcomes of the researched products and what are the most important indicators of research quality that are being pursued? Is it meaningfulness, usability (how beneficial), generalizability, objectivity, reliability, prestige etc?

The outcome of this research hopes to claim generalizability to other firms in the cluster, to the region and to similar export oriented industries through the adoption of a data triangulation (interviews and documents and literature), method
triangulation (case study and survey research) and theory triangulation (value chain approach vs. the cluster approach). Such intensive triangulation besides increasing the reliability of the claims, improves the validity of the results. The outcome can be used to systematically examine the chain structures of other agglomerations or manufacturing export industry in India, and adjudge their growth paths as evidenced by their sources of rent, types of governance and sources and effects of upgrading.

5.6.3.4 Causality

This is an integral part of any research paradigm. The purpose of a research effort is often to examine association between ideas, people and /or events. They may be expressed as causes, influences, determination, contributions, and effects and so on, it is important for the researcher to consider the following.

a) What crucial associations or relationships do I observe?

b) How are they described- cause, influence, contribution, shaping.

c) How is causality defined, and how is demonstrated?

The causality in the study may be difficult to establish considering that three case studies alone does not ensure replicability of the findings, and the survey evidence is based on small sample sizes. The constructs can contribute to an influencing or a shaping of the value chain relationship, though establishing relationships in terms of dependent, independent and intervening variables may be difficult given the abstract nature of these constructs.

5.7 Strand II: Descriptive Attitudinal Survey Research

The study followed sequential exploratory mixed method research design, with an initial qualitative phase and a later, quantitative phase that attempted to corroborate or strengthen the initial study findings.

5.7.1 Sampling Frame Used for the Study

The second strand of the study was a descriptive attitudinal survey carried out among the manufacturer exporters of the region. The firms which were part of
the case study were excluded. The sampling frame that was referred to was the list of the Kannur Textile Exporters Association (KTEO) which had a list of 34 firms in its purview. 31 firms were considered as the population for the survey, leaving out the case study firms and out of this a sample size of 20 firms was considered as appropriate considering the initial low number of firms.

5.7.2 Development of the Research Instrument

A schedule of closed ended questions was prepared initially in consultation with the industry experts and the various interviewees the researcher had access to. This was to ensure that it contained significant aspects of the trade in home textiles as well as coverage of the regional and within cluster issues that may have been significant. The value chain framework of sample firms was sought to be examined for the survey firms by including questions about the key success factors, the important product categories, the segments that they were targeting, the countries or destinations that the products were sent to and potential growth plans. It sought to examine the nature of the relationship that the firms had with their buyers by including questions about the upgrading that they undertook, whether in product, process or function, the governance exerted on these firms by controlling firms and their sources as well as the trust between firms expressed as a measure of activities they undertook, the communication methods, the terms of trade and length of relationship. Ultimately, the sample firm was taken through the process of examining the nature of the value chain that existed with its key buyers, by using McCormick’s (2001) key identifiers, described in the “Manual for value chain Research on Homeworkers in the Garment Industry”.

5.7.3 Sampling Procedure

Data collection was by personal interview using the schedule of questions and obtaining their answers or choices during the interview itself. A duplicate copy of the questions and alternatives was first given to the respondent so that the purpose of the study could be made clear and their approval for partaking in the study ensured. No respondent expressed an unwillingness or disapproval to participate, though they
were curious to know from where their address was identified. The researcher made it clear that case studies were being conducted at three firms within the region. Most of the survey participants felt that these firms were significant in terms of the information they could provide about the nature and problems of the industry and were uncertain about whether their answers could add any more value.

5.7.4 Use of the Attitudinal Survey

The second strand of the research was the descriptive attitudinal survey of manufacturing export firms.

In response to the questions about the reason behind the use of mixed methods, the explanation is: to corroborate research findings, to increase completeness by highlighting different aspects, so that the whole is greater than the sum of its parts. It was also done to complement the case study research findings.

This was especially important as in an Indian context; the mixed method research is still in its infancy and is still in the process of gaining acceptance among social scientists. The use of familiar or more established data collection tools, and the research method it entails, seemed necessary to provide a more complete understanding or picture of the phenomenon under study. The full picture would be more meaningful than each of the components. It was also used for the purpose of corroboration or confirmation. This meant that the results or inferences from one strand must be used to assess the credibility of the inferences from the other strand (Tashakkori and Teddlie; 2008, p102). They call this aspect ‘utilization quality’ or ‘pragmatic quality’- of inferences. This means that inferences made at the end of a study are good only if they address the intended purpose of the study.

5.7.5 Study areas covered in the Survey

The descriptive survey was done by using an interview schedule.

An initial set of frequency tables and importance rating scales were obtained from analysis of the questionnaire data. The firm related data was
generated for twenty sample firms and specific questions that would complement case study evidence were asked. These related to the following aspects:

a) An analysis of initial factors affecting firm success grouped under the heads of firm, buyer, product and government. The aim was to understand the areas that were important in the initiation of export. What drove exports from the region? Was the role of government support significant? The role of private associations like exporter’s association- the buyer’s own standards or whether firm’s owners or their predecessors directly accessed markets.

b) An importance rating of present factors affecting firm success that was beneficial for exports. This was to observe the differences in the nature of factors in the initial period and at present. Was there a shift in the importance of factors from the presence of a physical infrastructure or facility to the organization of production process? Were there changes in technology or in importance of product categories? The purpose of this was to relate it to the sources of rent.

c) The initial and present product categories were contrasted to examine whether additional or value added product categories were taken up and to what extent. This would provide additional evidence about upgrading of products. The sources of upgrading and the sources of rents or firm capabilities that made this possible were examined. This was supplemented with evidence about the importance of product categories to firm revenues at the time of the survey (2010).

d) The sources and effects of governance expressed in the form of product and/or process standards, the methods by which these were enforced and how firms met these standards were examined. The aim was to observe whether survey evidence would corroborate case study evidence.
e) The origin or source of upgrading, whether within export firms themselves or as a result of their interaction with other value chain firms needed to be known. The upgrading in respect of product, process, and function was examined. The importance of upgrading related activities was assessed to observe whether this was supported by case study evidence.

f) The sources of fabric manufacturing were examined to know whether the multiple manufacturing strategies seen among the case study firms, using a variety of sources, and varied methods of production were being followed among survey firms as well.

g) The preferred buyer segments that were ranked in order of their contribution to firm revenues, was examined. These ranged on the continuum from value based or mass market retailers to individual boutiques.

h) The key countries or regions of export were also assessed for survey firms.

i) The nature of the relationship with their most valuable customer group (in revenue terms) was assessed by providing the distinguishing characteristics of each type of relationship. The guidelines for this were taken from McCormick’s (2001) manual for home workers. Survey firms could understand what the nature of their relationship was by examining the distinguishing aspects and evaluating what the relationship type was. This exercise was done in consideration of their most important customer group, in revenue terms. Sometimes two options were checked.

j) In obtaining answers for the interview schedule the respondents were first handed over duplicates of the schedule but ticking or crossing off of the options was done by researcher to enable immediate collection
and to reduce their tedium. Any clarifications asked by respondents about the questions were cleared by researcher. The schedule was also supplemented by face to face discussions, experience sharing of insights of the exporters and making comparisons of their earlier business scenarios with the present.

5.7.6 Ensuring Reliability of the Research Design

Yin suggests that specific tactics can be used to increase reliability of the case study. The construct validity can be increased by using multiple sources of evidence and by having key informants review drafts of the case study report. This was carried out. The external validity can be improved by using a theoretical framework for case analysis and use replication logic, in multiple case studies. Reliability is improved by the use of a case study protocol and by developing the case study database.

5.7.7 Statistical Techniques Used in the Study

Inferential statistics deal with drawing conclusions and inferences about the population based on the sample data collected from that population. The benefit of inferential statistics is that it is inductive in approach and it helps in making conclusions about the entire group or population (Israel, 2009).

In keeping with the exploratory nature of the research questions in the study making associations or relating different variables that were isolated from the survey questions was a short sighted tactic. Though value chain studies have established linkages between upgrading in firms and governance type as well as between type of chain and the nature of governance exerted by lead firms in such firms, to be able to examine whether such associations exist from sample data seemed too ambitious. This association was revealed from the individual case study analysis, the cross case research and the inference building exercise but to establish such association between variables relate to upgrading, rent or CSFs (critical success factors) in the survey was not done.
The main reasons were:

a) The small sample size: A sample of twenty firms was selected by snowball sampling method from thirty one firms in the surveyed district of Kannur. Twenty firms were surveyed for sources of rent, governance and upgrading as well as key success factors, major markets, targeted segments and certain other demographic and value chain related aspects.

b) Non standardized tools of data collection were used for conducting the survey as there were few studies of value chains that had used survey tools. Most value chain studies have been done through the use of interview data or production figures at firm level or cluster level to understand the change in value.

5.7.7.1 Choice of Statistical Tests

Use of t Test for Small Samples

The t test for small sample means was a parametric test that was used to examine certain aspects of the survey data especially related to the initial and present factors instrumental in firm success. This is a test that can be used for sample sizes less than 30. Since the sample of firms had a size of 20 it was possible to use this test to examine the significance of certain hypotheses.

Two approaches to data analysis are the parametric and the non parametric approaches. Techniques involving the use of parametric tests make assumptions about the population from which sample data is obtained. The assumptions involve random selection of the sample from the population, symmetrical distribution of scores, having a sample size greater than 30 and variables measured on an interval/ratio scale.

In the case of data that does not meet the assumptions about the population – normal distribution and randomness, parametric testing cannot be done. This is
also true when the level of data being measured is qualitative or when the sample size is small.

In such cases Israel (2008) suggests the use of statistical tools for which rigid assumptions need not be harboured. These are called non-parametric or distribution free techniques. This is useful in small sample testing because they do not have any assumptions about the population from which the samples are drawn.

These are called distribution free statistics because they can be sued regardless of the shape of the population distribution. Another advantage is that a number of nonparametric tests can be used with nominal or ordinal data too. Nominal data scaling refers to the method that just categorizes cases or objects into different groups. The numbering system is just labels denoting different groups.

In the case of ordinal scale of measurement there is an arrangement in a hierarchical order, or having some ranking with regard to level of importance, level of intensity or level of use.

In short, advantages of non parametric statistics are the following:

a) There is no parametric alternative in the use of non parametric statistics like measuring association between two nominal scaled variables or ordinal scale variables.

b) The computations of non parametric statistics are usually less complicated than those for parametric statistics particularly for small samples.

c) The significance of many nonparametric statistics can be tested as they have theoretical distributions of their own, hence inferences can be made.

Use of Non Parametric Tests

The relevance of process or product upgrading as well as data about the governance- legislative, executive and judicial, could be strengthened by the use
of non parametric tests that examines the scores given by the sample to different variables. These variables may relate to different sources or types of upgrading, the different sources of governances or the importance of success factors related to performance of the firm.

Why was non parametric statistical testing of results considered necessary? The main aim was to alleviate the researcher bias which may have been expressed during case study research and to increase reliability of results obtained from survey research. The justification for the findings of the mixed method study will be increased by the use of statistical testing. Non parametric tests lend themselves to qualitative research ideally because many qualitative research variables are measured on nominal or ordinal scales.

This premise was used in the selection of two related sample tests of non parametric nature to examine the significance of scores given to aspects of upgrading, governance or success factors. The tests used in this regard were

a) Sign Test For Matched Pairs  
b) Wilcoxon’s Sign Test For Matched Pairs  
c) Friedman’s Two Way ANOVA  
d) Cochran’s Q