INDIAN TEXTILES AND APPAREL EXPORT ORGANIZATIONAL STRUCTURE, COMMUNICATION AND QUALITY CONTROL PRACTICES

By

SRINIVASA VIJAYA CHARI

Bachelor of Science
University of Madras
Madras, Tamilnadu
India
1989

Master of Science
University of Madras
Madras, Tamilnadu
India
1991

Submitted to the Faculty of the Graduate College of the
Oklahoma State University in partial fulfillment
of the requirements for the Degree of
MASTER OF SCIENCE
December, 1997

INDIAN TEXTILES AND APPAREL EXPORT ORGANIZATIONAL

STRUCTURE, COMMUNICATION AND

QUALITY CONTROL PRACTICES

Thesis Approved:

Cheryl A. Farr
Thesis Adviser

Donna H. Branson

Shiretta Ownbey

Wayne B. Powell
Dean of Graduate College

ACKNOWLEDGMENT

I would like to thank my major professor, Dr. Cheryl Ann Farr, for her strong support, time, motivation, guidance and personal assistance in conducting the interviews for the study in India. Many thanks also goes to Dr. Donna Branson for her encouragement and to Dr. Ownbey for her interest and for serving on my graduate committee.

My sincere respects and thanks to God for helping me and being with me all the time. My special respects and thanks to my parents T. K. Srinivasa Chari, and Veda Chari for strongly believing in me and supporting me throughout my graduate program. I wish to thank my sister and brother in-law Vaishnavi. P. Kumar and Pradheep Kumar for their support to complete my graduate program successfully. I would like to give special appreciation's to my brother Vasanth for sharing his computer with me during my data collection in India.

My sincere appreciation's to my friends Arati and Rajendra for introducing me to well established organizations that were sources for my interviews in India, and to Pavitra for her moral support. I thank all the Indian textile and apparel export organizations for their willingness to share information with me and make this study possible.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

Table Page

CHAPTER I

INTRODUCTION

India, with a population of 886,362,180, occupies a great part of the sub-continent of southern Asia (Exporters' Encyclopedia, 1992). In the past, agriculture was the main source of income for the nation. Today, there has been a shedding of the agrarian character and the industrial sectors have grown in prominence. Importation of textiles and apparel manufacturing machinery during the 1960s led to the development and expansion of the jute and cotton textiles industry. Mechanization of the cotton textiles sector gave rise to the production of textiles and apparel for the domestic market, as well as for the world market. By supplying Indian textiles and apparel to the world market, the Indian economy has earned valuable foreign exchange. Textile and apparel exports account for approximately $22 million of India's total $22 billion in exports. Out of this total $22 million in textiles and apparel exports, India exports approximately $7 million in textiles and apparel to the U.S. annually (The State Trading Corporation of India Ltd., 1989-1990). The volume of textiles and apparel products exported to the U.S. indicates that the U.S. is one of the major markets for Indian textiles and apparel.

With an abundance of raw materials and low labor costs, India should be able to increase annual textiles and apparel exports to the U.S. by more than $7 million annually. In order to increase its U.S. export market share to the U.S., India will have to face stiff competition from competing countries such as China, Korea and Taiwan. Successful competition for an increased share of the U.S. market may be achieved by producing quality products at competitive prices.

However, in the past, inconsistent quality has been a major factor that has impeded an increase in the quantity of Indian textiles and apparel products entering the U.S. market. According to Khan and Talha (1994), to overcome the quality problems and to increase the quantity of textiles and apparel products exported to the U.S., it becomes necessary for the Indian textiles and apparel manufacturers to adopt strict quality control programs.

Quality programs in India have lacked success because product standards have not been clearly communicated. There may be a communication breakdown between the U.S. importer and the Indian exporter, between the Indian exporter and their suppliers, or between the manufacturer and workers. The exchange of information plays a critical role in communicating the product standards and specifications in relation to the quality expectations of the U.S. importers rather than quality assumptions of the Indian textiles and apparel export manufacturer. Khan and Talha (1994), stated that quality control programs in Indian textiles and apparel industries may not be successful unless the organizational structure includes employee involvement.

Identification of Quality Problems Impeding Indian Export Growth

According to Chandra and Somaiya (1991), Indian textiles and apparel industries and other significant Indian industries such as the agricultural industry have typically catered to the domestic market. Historically, the Indian industry was not encouraged to develop international export markets and this decreased awareness of the quality standards that were developing and spreading globally. As the value of foreign exchange increased, the Indian government began encouraging the internationalization of textiles and apparel trade to improve the flow of foreign exchange into the country. The lack of awareness of quality standards established by other countries for their respective imports led the Indian industries to produce products that did not meet the quality standard expectations. In order to overcome the quality problems with other

countries, some Indian textiles and apparel organizations began to develop and adopt quality control programs. Although these quality control programs were adopted, they were difficult to implement due to lack of testing facilities and testing equipment or the proper communication procedures that could facilitate quality control programs in the Indian textiles and apparel industry. Part of the communication issue has been the failure to establish complete and correct specifications between the U.S. importers and the Indian exporters. Consequently, the quality standards of Indian textiles and apparel exporters do not match the quality standards and specifications of U.S. importers.

Enforcement of U.S. textiles and apparel regulations, such as the Flammable Fabrics Act (FFA), identified rayon garments from India as dangerously flammable (Holloway & Denton, 1994). The failure of these garments to meet the FFA standards indicates that the Indian textiles and apparel manufacturers are not adhering to the quality standards set by U.S. regulations. In an effort to check compliance with product standards and specifications, Indian textiles and apparel industries have developed an infrastructure for quality control programs by establishing independent laboratories or government laboratories to test products for compliance with U.S. regulations and importer specifications. The testing done by independent laboratories and government laboratories is called third party certification. The use of third party certification has not become an integral part of all the textiles and apparel export industries in India.

In order for the Indian textiles and apparel industry to develop and implement effective quality control programs, there are two important factors to be considered. First, U.S. importers must communicate the expected standards and specifications clearly to the Indian manufacturers. These standards and specifications should be feasible within the constraints of the Indian textiles and apparel industry. Second, the Indian manufacturers must communicate the product standards and specifications to the supervisors and workers within the organization. It is important for the U.S. importers and the Indian exporters to understand that clear communication is a key factor in achieving the expected quality standards .

In relation to the first criteria, communication has been identified by researchers (Rabolt, Bothwell, Forney, & Barry, 1988) as a barrier in achieving quality products. Communication becomes more complicated while doing business internationally because of differences in culture and language. Rabolt et al. (1988) identified communication between the exporting and the importing companies as one of the major problems in meeting the U.S. standards. Communication is a common problem in all organizations and may be compounded by a bureaucratic organization.

U.S. importers' understanding of the organizational structure of different Indian textiles and apparel export organizations and the communication practices within these organizations will improve communication. Establishment of communication practices with limited intermediary involvement could prevent breakdown in communication between U.S. importers and Indian exporters.

The second criterion is the communication of product standards and specifications within the organization and the development and implementation of quality control programs that facilitate compliance with the required standards and specifications. Understanding the existing quality control programs within the Indian textiles and apparel industries will help U.S. importers work with organizations to assess the effectiveness of these. Evaluation of the existing quality control programs will help in planning better quality control programs to comply with the standards and specifications of the U.S. buyers.

U.S. textiles and apparel importers are reaching out to developing countries to purchase textiles and apparel for domestic consumption because of high domestic labor costs. Although U.S. importers are looking for cheap labor in the developing countries they will not compromise on their quality. Therefore, if countries like India want to maintain a steady flow of foreign currency into India and develop international trade, it becomes important to communicate standards and adopt quality control programs that produce textiles and apparel appropriate for the U.S. market.

To be successful, internal communications and quality programs must be built on clear and accurate standards and specifications.

Justification

Although researchers have identified quality problems associated with Indian textiles and apparel export products, there has been little research identifying the reasons for quality problems associated with the industry. Rao (1985) discusses the critical importance of quality control procedures relative to inspection processes that are executed to meet the quality standards of the U.S. buyers. However, there is still not enough data to describe the impact of communication on the quality control process relative to U.S. importers' standards and specifications.

If U.S. importers are to receive quality products and conduct business successfully, it is necessary to understand the different types of Indian textiles and apparel export organizations. This understanding will aide U.S. importers in developing standards and specifications that are feasible in the Indian textiles and apparel export environment. Standard and specification development is not effective without good communication between the companies that are doing business. Since Indian export organizations function under different circumstances based on their type of organizational structure, systematic breakdown of communication between the U.S. importer and the Indian exporter becomes very critical. Quality control processes can be executed successfully only if there is proper communication at all levels.

This study will aid Indians in textiles and apparel companies to understand the impact of communication strategy and company organization in meeting U.S. importers' standards and specifications. U.S. importers will benefit from understanding what standards and specifications are feasible for the Indian textiles and apparel export companies.

Purpose of the Study

The purpose of this study was to understand the relationship between Indian textiles and apparel export organizational structure and product quality.

Objectives

1. To identify and describe the different types of Indian textiles and apparel producers who export to the U.S.
2. To identify and describe the methods used to communicate product standards and specifications:
    a. between U.S. importers and Indian exporters, and
    b. within Indian textiles and apparel export organizations.
3. To identify and describe the quality control practices used by different Indian textiles and apparel manufacturers.
4. To identify the extent to which the quality control practices of Indian export organizations meet the client's standards.

Research Questions

1. What are the characteristics of Indian textiles and apparel producers who export in terms of:
    a. ownership or non-ownership of production facilities,
    b. centralization or decentralization of organizational structure,
    c. production methods related technology,
    d. communication methods related technology,
    e. subsidiaries of the organization,
    f. number of years the organization has been in the textiles and apparel export business,
    g. number of full-time and part-time employees employed by the organization at the corporate office,
    h. number of full-time and part-time employees employed by the organization at the production center,

i. number of days per week that the corporate office of the organization works,

j. number of days per week that the production centers work, and

k. corporate structure of the organization to communicate product standards and specifications?

2. What are the methods used to communicate product standards and specifications to facilitate quality production:

a. between the U.S. importer and the Indian exporter, including:

(1) methods of oral communication,

(a) conversation by telephone,

(b) face-to-face conversation

(2) methods of written communication,

(a) communication through telex services,

(b) communication through facsimile service;

(3) types of information received through mail services to facilitate production,

(a) prototype of a particular style of garment and fabric swatches

(b) picture of a garment or pictures of fabrics,

(c) sketches of the style of garment or sketches of the design of the fabric,

(d) color yarns for exact color matching,

(e) color charts to identify colors by names when fabric color samples are not available,

(f) samples of care instructions to be used on the garment or fabric,

(g) samples of trim or accessories for production,

(h) required laboratory test reports;

b. within the Indian export organization in terms of:

(1) methods of oral communication

(a) conversation by telephone,

(b) conversation with one another face-to-face;

(2) methods of written communication,

(a) communication through telex services,

(b) face-to-face communication;

(3) types of information received through mail services to facilitate production,

(a) prototype of a particular style of garment and fabric swatches

(b) picture of a garment or pictures of fabrics,

(c) sketches of the style of garment or sketches of the design of the fabric,

(d) color yarns for exact color matching,

(e) color charts to identify colors by names when fabric color samples are not available,

(f) samples of care instructions to be used on the garment or fabric,

(g) samples of trim or accessories for production,

(h) required laboratory test reports?

3. What are the quality control methods used by Indian export organizations for inspection procedures in terms of:

a. identification of points of inspection occurrences before or after production:

(1) inspection of end product,

(2) inspection at various stages of production,

(3) inspection during the final stage of production;

b. identification of who is doing the inspection,

(1) in-house quality inspection process,

(2) inspection by government agencies,

(3) inspection by independent inspection agencies?

4. How do Indian export organization owners perceive their results in products that meet U.S. importers' standards and specifications as indicated by:
    a. products accepted or rejected,
    b. repeat order quantities increase or decrease,
    c. retention of importers as clients,
    d. other measures, such as delivery time and delivery schedule?

Definitions

Indian Export Organizations: defined as organizations with export licenses in India that have a manufacturing unit or that subcontract the manufacture of textiles and apparel products to be exported to the U.S.

Quality: defined as the "degree to which a specific product conforms to a design or specification" that is required by the consumer (Gilmore, H. L, 1994).

Standards: defined as a set of characteristics and procedures that provide a basis for resource and production decisions; industry or individual firm's guidelines for quality and performance; the quality level and quality characteristics that are important to a firm's target customers (Peters & Waterman, 1982).

Quality assurance: defined as bringing together all the activities and functions combined with the quality evaluation system in a manner that satisfies the stated or implied needs of the customer (Glock & Kunz, 1995).

Quality control: defined as the effort taken to ensure the end product meet the requirements and obtain customer satisfaction (Vendor-Vendee Technical Committee of American Society for Quality Control,1985).

Quality inspection: defined as the standard method of controlling production activities to meet the standard specified needs of the customers.

Third party certification: defined as a term used for quality testing by independent laboratories or government laboratories.

In order to enhance the quality of textiles and apparel, and as a guideline for textiles and apparel manufacturers, the American Apparel Manufacturers Association has established basic guidelines for an apparel quality control program that includes raw material inspection, product evaluation, analysis of the manufacturing process and finished garment evaluation (Apparel Quality Committee, 1985).

CHAPTER II

REVIEW OF LITERATURE

The review of literature encompasses topics related to the Indian textiles and apparel export organizational structure, management operations of the Indian textiles and apparel export organizations and the operation's effect on communication, and the quality of the textiles and apparel exported to the United States from India.

Indian Textiles and Apparel Export Organizational Structure

In order to develop standards and specifications for products produced by an Indian textiles and apparel export organization, it is important to understand the organization's structure. Understanding organizational structure will help with the development of standards and specifications that are suitable to the Indian textiles and apparel export organization. Setting suitable standards and specifications for the Indian organizational structure will lead to implementing quality control programs in order to effectively monitor products during and after production.

Solinger (1988) described different Indian textiles and apparel organizational structures. Although the descriptions are not specific, these descriptions provide some insight into the various structures of textiles and apparel export organizations in India. According to Solinger (1988), Indian apparel producers can be classified into one of six categories.

The classification is dependent upon the kind of job an individual exporter executes. The six categories include:

1. Fabric manufacturers are those who purchase yarns, weave fabric to specifications for the Indian export agents with an export license, who either sells the fabric or converts the fabric to apparel and then sell it to U.S. importers.
2. Sewing contractors obtain fabric from either fabric manufacturers or export agents and sew garments to specification. They also complete the trimming, pressing, and sometimes even the packing operations before sending the products back to the export agent.
3. Sub-contractors execute specialized production for sewing contractors, such as embroidering.
4. Manufacturer-distributors purchase fabric from weaving contractors and sew apparel according to specifications and then sell directly to the U.S. importer without using sewing contractors or subcontractors.
5. Vertical manufacturers purchase yarn, weave fabric, manufacture apparel, and sell directly to U.S. importers.
6. Vertical manufacturer-distributors manufacture yarns, weave fabric, sew garments according to specifications, sell directly to U.S. importers, and execute contracting jobs for other Indian export agents (Solinger, 1988).

Often, contractors may not be aware of the brand name of the garment that they produce for their exporters. In some cases, the contractor does the sewing and pressing operations alone while the export agents handle the labeling and ticketing process. The packaging is dependent on the instructions provided by the buyer. Often jobs such as pleating, embroidery, or pressing are sub-contracted. In India, the majority of the weaving jobs are subcontracted to weavers in Coimbatore, Salem, and Tirupur.

Operations of the Indian Textile and Apparel Export Organizations and Communication

Many Indian textiles and apparel organizations operate under a centralized system, one in which the organization is controlled and operated by one top management. This system fosters a strong bureaucratic policy. Often, simple transition of operations consume long periods of time because of the bureaucratic system (Bose, 1989). There must be employee involvement and encouragement at every step of growth in an organization in order to be competitive and successful. The best method for facilitating improved quality programs through employee involvement is decentralization. With the decentralized organization the control and responsibilities of the organization is distributed by dividing an organization into specialized departments. Decentralization will also facilitate the easy flow of communication.

According to Motwani (1993), most Indian organizations lack proper communication and employee involvement both within the organization as well as with their U.S. importers, which is a major factor in the production process of textiles and apparel that meet the standards and specifications of U.S. importers. Within an organization, purchasing, designing, marketing, and manufacturing departments should work together to achieve quality goals. According to Walton (1986), every employee of the organization must strive to reach quality goals set by the organization in order to be successful in meeting the standards and; therefore, it is necessary for Indian textiles and apparel export organizations to recruit employees:

1. With skills in the textiles and apparel area so that, specifications can be understood and followed accurately,
2. With good job knowledge because the individual is more likely to be consistent in the job, and
3. With adaptability to change because the individual is more likely to be a asset to the organization.

Top management is responsible for developing open communications within the organization and encouraging employee participation (Peters & Waterman, 1982). Effective

communication among employees, on all levels, is the backbone of a good business (Birkland, 1994). It is important for management to develop a face-to-face contact with the workers on a daily basis. Often textiles and apparel inspectors must travel to production sites to interact with employees. Additionally, a regular inspection system for product standards and specifications will decrease the number of major rejections of textiles or apparel (Rabolt et al, 1988). It is important that employees are efficient and have good work skills in order to produce quality products.

Quality of the product is also affected by large employee turnover. Factors that affect large employee turnover are low wages, personal preferences towards repositioning relatives or friends, and layoffs of skilled workers during lean periods. As a result, skilled employees turn to other occupations for survival while the Indian textiles and apparel export organizations suffer with unskilled labor during peak production periods. Thus, it becomes necessary to recruit and retain skilled employees to produce quality garments. Some of the problems in relation to unskilled labor, identified by Rabolt et al. (1988) are:

1. Lack of knowledge to sew buttonholes neatly and according to specifications (vertical or horizontal),
2. Lack of knowledge to sew facings correctly, due to lack of technical knowledge,
3 Lack of knowledge to sew evenly, either straight nor curved stitches, leading to puckering,
4. Extra stitching showing on welt pockets, and
5. Lack of pressing and packaging knowledge leading to misreading instructions and poor packaging.

In addition to job knowledge as an important factor in achieving quality product, Amsa (1986) also identified characteristics such as employees "dawdling" around in the middle of a project causing low productivity and quality issues. Also according to Rabolt et al. (1988), resource limitations in some areas of India may contribute quality problems. Water scarcity leads to the reuse of water for dying, which may affect the original color of the fabric or garment. Because of water scarcities, some weavers or garment manufacturers are forced to purchase

water tanks that cost them extra money in production. Therefore, in order to adjust the cost, some weavers or garment manufacturers do not purchase water for pre-shrinking and pre-washing of fabrics or garments. Based upon the standards of the U.S. importer, textiles and apparel not adhering to the set standards and specifications are considered to be poor quality merchandise.

Language is also an issue that may increase quality control problems. If supervisors and workers are unable to read or understand English language correctly, it is difficult for them to comprehend and communicate the instructions on labels and order sheets. This can either lead to sewing the labels upside down or misinterpreting symbols and words, the result being the production of an incorrect design.

Early literature (Motwani, 1993) elaborated on various communication problems that frequently impede the quality of textiles and apparel produced overseas. A lack of computers is a deficiency for Indian textiles and apparel export organizations (Terrence, 1988) which slows the communication process. McDonald (1994) identified necessary facilities as transportation, telecommunication, facsimile equipment and photocopy facilities. Lack of facilities impedes the communication process. The adoption of telecommunication services, facsimile machines, and photocopy facilities has been limited due to costs. The lack of these technical capabilities inhibits Indian textiles and apparel exporter's contact with U.S. importers, and impedes the Indian textiles and apparel exporters' ability to convey any unforeseen production changes to U.S. importers.

Lack of production equipment was identified as a production problem by Rabolt, et al (1988). Specifically, the lack of seam finishing equipment such as sergers results in production problems such as raw edges and the use of mock French seams (Ssae) regardless of the weight of the fabric.

Quality of Textiles and Apparel Exported to the United States

Quality management is an important factor to be considered in the Indian textiles and apparel export organization. According to Glock and Kunz (1995) an effective quality management system involves consistent support from the top management providing the equipment, supplies, personnel, and budget to execute the production as per specifications.

Khan and Talha (1994) posited that production of poor quality textiles and apparel by Indian export organizations has been the major factor impeding export growth. The Vendor-Vendee Technical Committee of the American Society for Quality Control (1985) has defined quality control as "efforts applied to ensure that end products/ services meet the intended requirements and achieve customers' satisfaction." In order to overcome the quality problems, some Indian organizations have adopted quality control programs that were developed by the Indian Ministry of Commerce for Textile and Apparel Export. Some Indian textiles and apparel export organizations operate under the concept of end product inspection, carried out by independent inspection agencies, while other organizations incorporate quality control at various stages rather than the final stage. The reason some Indian export organizations are able to adopt quality control programs only for certain jobs, like end product inspection, is either due to lack of manpower or the inability to financially implement quality programs at all stages of production.

Although quality control programs are complex to develop and implement for the Indian organizations, quality control programs are mandatory to avoid the risk of error created by distance and language barriers (McVey, 1993). Along with establishing quality control programs it is necessary to be consistent in implementing the application of quality standards and specification to all garments produced, because only consistency will provide uniform quality standards in production (Stamper, Sharp & Donell, 1986). Therefore, it becomes important for an

Indian textiles and apparel exporter to understand all standards and specifications provided by U.S. importers and to implement the application of standards and specification accurately. Rabolt et al. (1988) have reported that Indian exporters often have problems interpreting specifications, patterns, samples and designs due to language differences. Inadequately trained workers are another problem. U.S. importers need to recognize industry limitations when negotiating contracts (Amsa, 1986). An understanding of the qualifications and knowledge of the Indian workers and corporate office workers is important for the development and communication of standards and specifications prior to contract finalization. Clear communications between Indian manufacturers and U.S. importers might reduce the incidents of quality problems identified by Rabolt et al. (1988). The quality problems included construction, finishing material, and fit associated with apparel exported from India.

Summary

In conclusion, studies have indicated that textiles and apparel imported from India do not meet the standards and specifications given by the U.S. importer, resulting in quality problems. This nonconformance of standards and specifications of the Indian textiles and apparel could be due to Indian textiles and apparel organizational structure, communication, and quality control practices within the Indian textiles and apparel export industry. The goals of this study were to: a) determine the organization of different Indian textiles and apparel export companies; b) investigate the communication between Indian textiles and apparel export companies and U.S. importers; c) explore the communication within the Indian textiles and apparel export organization; and d) examine the quality control programs that have been implemented in different Indian textiles and apparel organizations. The quality of textiles and apparel produced by the Indian export organization is dictated by the type of organizational structure. An effective business relationship between exporters and importers may be developed by increasing communication skills and enhancing the understanding of the production expectations and limitations. Findings

from the study will help U.S. importers to better understand issues as they realistically exist within the Indian textiles and apparel export organizations. This understanding may help importers set standards and specifications considering the limitations of the Indian system. This will avoid rejections from the U.S. importer due to quality issues and the Indian textiles and apparel industry will be able to eliminate complaints of quality problems and financial loss due to rejections.

CHAPTER III

METHODS

Description of the Survey

An interview method was used to collect the data for identification and description of different types of Indian textiles and apparel export organizations. At least one member of each firm's top level management was interviewed for the data collection. Some of the organizations were also toured to collect data regarding specific types of technology adopted by the Indian textiles and apparel export organization. The communication processes between the U.S. importers and the Indian exporters, and the communication within the Indian organizations among the weavers, garment producers, supervisors, and the top management were studied. An analysis of quality control programs in relation to the inspection procedures and organizational structure was undertaken.

Interview

Twenty-nine questions, directed towards studying the different Indian textiles and apparel export organizations, were asked during the interviews. Thirty-six more questions were based on the communication between the U.S. importer and Indian exporter. Sixteen questions were based on the communication within the Indian textiles and apparel export organization. Twenty-four

questions were based on the quality of the product in meeting the standards of the U.S. importers, and sixteen questions was based on the quality control adopted by the Indian export organization for inspection procedures. A structured set of questions was developed to provide information for each of the research objectives and to obtain a common set of data from each interview (see appendix A). Both open-ended and closed-response questions were used to identify and discuss unanticipated responses.

Sample

Purposive sampling and snowball sampling were used to select participants for the study. The companies or organizations in the samples were selected from the southern region of India. The sample of thirty seven organizations were located in the state of Tamilnadu. The southern region of India was selected because it is a major textiles and apparel producing area for the Indian export sector (McDonald, 1994). A majority of cotton knit and woven products are manufactured in the southern region of India. The criteria established for company selection were: (1) each company had to be an Indian, textiles and apparel producer and exporter or a textiles and apparel exporter with a license to export to the U.S.; (2) each company had to be presently exporting to the U.S. at the time of the interview; and (3) each Indian textiles and apparel exporter had to be directly communicating with the U.S. importer without any intermediaries. The initial purposive sample was taken from the Apparel Export Promotion Council directory. The companies selected for the purposive sample were used to implement the snowball sampling technique in order to identify other companies that met the criteria. Company owners, general managers, or the managing directors of the company were interviewed, because individuals in these managerial positions were responsible for delegating the jobs within the organization. Thirty-five interviews out of thirty-seven were useable.

Procedure

The interview process began by calling individuals with a title such as general manager or the president of the selected textiles and apparel export organizations. The telephone call provided the opportunity to briefly explain the researcher's interest and the participant's role in the research. An interview date was set for each company. Twenty-seven of the 35 interviews involved one visit to the business for a single interview session which lasted approximately one and one-half hours. Four interviews lasted longer than two hours and included facility tours. Multiple sites were visited for four of the companies. In general, companies that did not provide visits to production sites were companies that had production in a distant location or companies that did not own production facilities. Thirty of the 37 interviews were recorded. Prior consent was obtained before the recordings were made. The researcher clarified questions or terms during the interview when necessary. The responses were noted for open-ended questions. At the end of each interview session a gift was presented to the exporters for sharing their valuable time and information for the study.

Statistical Analysis

Content analysis was used to identify key terms and information provided in response to the open-ended questions. Descriptive statistics was used to identify the frequency of specific practices in order to present the data in an efficient and meaningful summary form. Descriptive statistics were used to organize, summarize, identify, and describe the different types of organizational structure, the communication practices, and the quality control programs within the textiles and apparel export organizations.

Chapter IV

RESULTS

The purpose of the study was to understand the Indian textiles and apparel export organizations, their communications process, and their quality control practices. The study was undertaken to answer the research questions which were based on the objectives of the study. The findings were organized and are reported in relation to the research questions.

Research Question I

The first research question is concerned with identifying and describing the different types of Indian textiles and apparel export organizations. Thirty-five of the organizations interviewed had similar organizational structures except that the names of designations for specific positions or jobs varied. The functions of the designations were similar among all 35 organizations. The organizational structure of all firms was similar. Positions were similar in terms of job responsibilities and functions of the export organization. Most organizations had a managing director or the owner heading the organization and making the majority of the decisions. Typical decisions were related to receiving and delivering orders or samples and to the finance of the organization. The direct subordinates of the managing directors or owners were the general managers or the directors who were responsible for the execution of the orders and for any correspondence with the buyers during the managing director's or owner's absence. The general managers oversee all the functions within the organization including approval of

textiles and apparel at the sample stage or production stage in terms of approving colors, appointing and managing employees, delegating job responsibilities to the respective subordinates and controlling the finance for the organization. The merchandisers, coordinators and production managers report directly to the general manager regarding projects and the progress or problems of their respective projects. Merchandisers, also commonly referred to as coordinators, usually gather information for the general manager regarding quoting prices, material requirements, required time leads, and shipping information. Merchandisers, or coordinators, also communicate all information received from the U.S. buyers to the supervisors. The supervisors are responsible for separating information from the original specification sheet and distributing it to the fabric coordinator for fabric sampling or production and the production coordinator, or the master for garment production. The responsibilities of the master for garment production included supervision of sample making and all production activities. The fabric coordinators exchange information with the master for garment production regarding textiles design and quality specifications that could impact the garment production.

The fabric coordinators, further distribute the information from the specifications to:

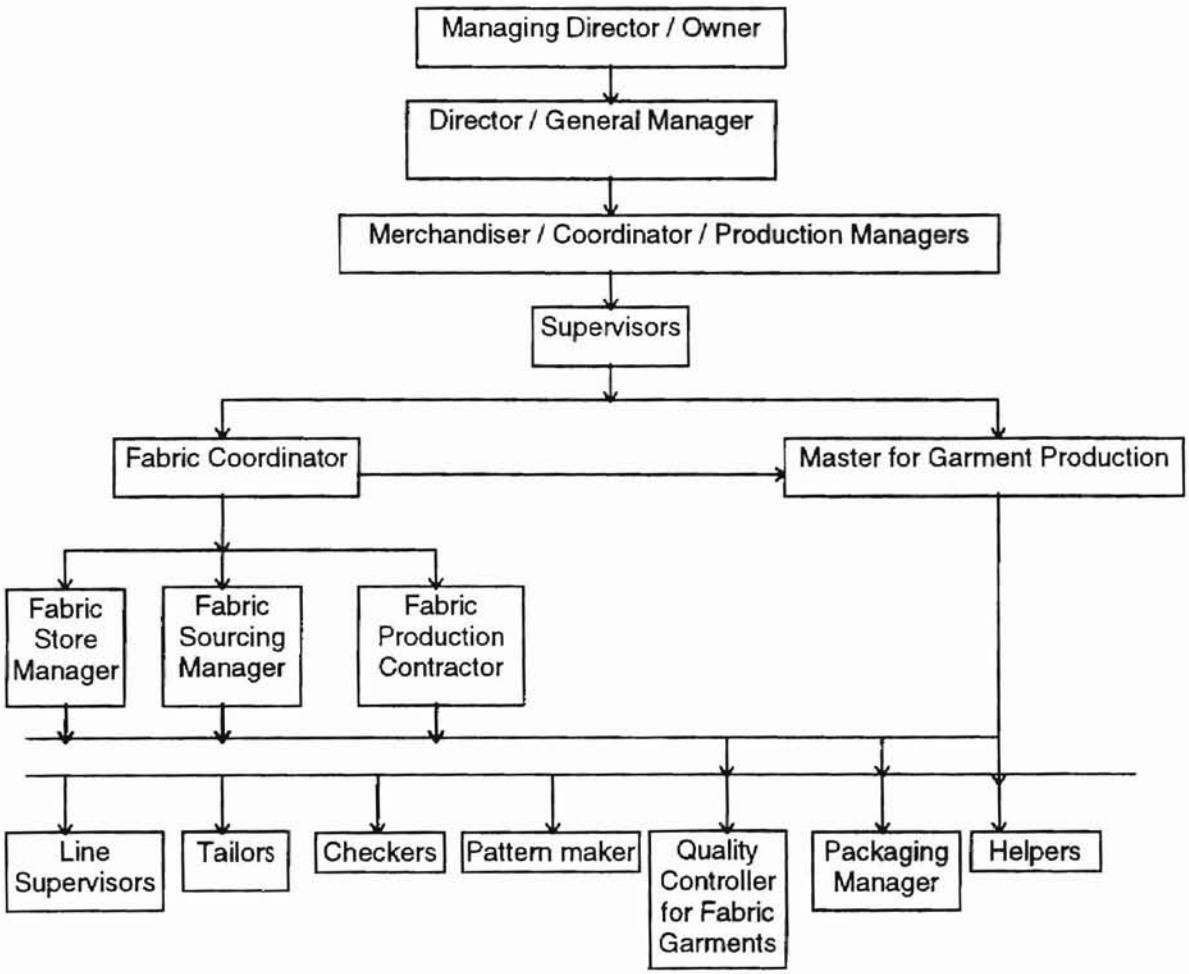
1. The fabric sourcing department, which either purchases the readily available fabrics from weavers outside the company or places an order with a weaver-contractor.
2. The fabric production centers, which manufacture the fabric according to design specifications.
3. The fabric store which receives the fabric from the weaver or from the fabric production center within the company.
4. The quality control department which inspects the final production.
5. The packaging manager who inspects the packaging.
6. Helpers for the final checking process.

The master tailor for garment production distributes all information related to sewing and the respective sewing specifications to the line supervisors, sewing tailors, pattern makers, packaging department, checkers, quality controllers and helpers. The following chart describes

the organizational structure of the Indian textiles and apparel export organizations. Certain job titles may be referred to differently in certain cases but the responsibilities are similar.

All organizations that were interviewed had the same organizational arrangement. Although the names of the designations vary in some cases, the flow of communication and responsibilities are the same. The terms used in the figure 1 to describe the Indian textiles and apparel export organizational structure are the terms used by the Indian organizations. These terms may or may not be the same terms that are generally used in an American organization. The terms are therefore defined as they are used in the Indian organizations.

Figure 1 **Indian Textile and Apparel Export Organizational Structure**



Managing Director refers to the head of the organization who may be the owner of the organization or may be authorized by the owner to head the organization. This person is in charge of all aspects of the organization.

Director refers to the person in charge of a particular division within the organization. This person is in charge of all aspects that would relate to his/her respective departments. For example, departments include finance or accounting department, fabric department, garment production department, and shipping and documentation department. This individual also administers the entire organization in the absence of the managing director or the owner.

General Manager refers to the person executing directives or policies of the director. This individual is also responsible for contacting different U.S. clients to get bulk order production for the organization as well as handle contracts and financial matters.

Merchandiser refers to the person in charge of communicating the order information from the clients to the supervisors and overseeing the execution of the production for each order. This person is also responsible for communicating and finalizing orders with clients and communicating production changes to the respective clients.

Coordinator is another name for merchandiser. The responsibilities are the same as those of the merchandiser.

Production Manager carries the same responsibilities as the merchandiser in addition to overseeing bulk production and clarifying any problems in production.

Supervisor refers to an individual responsible for splitting the information for distributing the to the respective departments based on job specialties. This individual is also responsible for planning schedules, solving problems related to each production department, overseeing quality checks, coordinating the movement of materials from the fabric department to the garment production unit, and updating the production manager/merchandiser/coordinator on the progress of the order.

Fabric Coordinator refers to an individual who receives the standards and specifications for the fabric production from the supervisor and either sources for the fabric or purchases the yarns and distributes standards and specifications for production. In cases where fabric production is

divided between contractors, the fabric coordinator is responsible for duplicating the standards and specifications for each contractor. This individual also communicates the necessary information to the fabric store manager as well as the fabric sourcing manager.

Fabric Store Manager refers to the individual who is responsible for maintaining the fabric inventory within the organization where the fabrics are stored before shipment or before the garment production begins.

Fabric Sourcing Manager refers to the individual who is responsible for purchasing fabrics from weavers outside the company. This person works for the fabric coordinator in identifying the different specialized weavers. This individual is usually stationed at the production center to monitor production and update the progress to the fabric coordinator.

Fabric Production Contractor refers to manufacturer and supplier of fabrics for the Indian textiles and apparel exporter.

Master for Garment Production refers to the individual who is responsible for executing the production of garment according to specifications. This individual is responsible for all stages of production from pattern making through assembly and finishing. This person makes a prototype garment for sample approval of the apparel on order according to the specifications and sends this prototype for production, with any corrections marked.

Line Supervisor refers to the individual who is responsible for a specific garment production unit in terms of following scheduling, maintaining employee records, solving problems, and ensuring quality of the product during production.

Packaging Manager refers to the individual who is responsible for packing the respective orders and ensuring that the packaging meets the standard requirements of the importing country. This person is responsible for purchasing the materials required for packaging.

Tailor refers to the individual who sews the garment.

Checker refers to the individual who inspects the garment for fabric defects, sewing defects, and packaging at every stage of production.

Quality Controller refers to the individual who inspects the garments for conformance to specifications and packaging instructions.

Helper refers to the individual who trims loose threads, removes stains, sews buttons and carries the garments to the required units. This person's job includes working as a packer or a checker when there is a need for additional labor in these areas.

Pattern Maker refers to the individual who makes graded patterns and markers to specifications for the production process.

Twenty (57%) of the thirty-five organizations reported having a centralized system. Fourteen organizations (40%) reported following a decentralized system, and one organization (3%) had a combination of both centralized and decentralized system (see Table I). In a centralized system, all information and decisions are screened by the managing director or the owner of the organization. There is no free flow of communication between the buyers and the other employees in the organization. This structure might have a negative impact in terms of explaining technical difficulties to the U.S. importers or any other suggestions to enhance production, especially if the managing directors or the owners are not technically qualified. As there are three to four intermediaries to communicate the standards and specifications before they reach the tailor or the weaver, there is possibility of either miscommunication or failure to communicate all information.

The decentralized system allows the merchandisers to communicate and correspond certain technical difficulties to the U.S. buyers directly and the employees are empowered to make certain decisions that are necessary for a smooth production operation. The employees can communicate directly with the buyers to ensure that the necessary standards and specifications for production are met. The decentralized system creates a feeling of individual responsibility and develops greater interest in the job. As a result each employee accomplishes and stands by his/her careful decisions. The decentralized system is very effective, especially when there is a short lead time. On-the-spot decisions can be made without waiting for approval from higher

authorities and it is the responsibility of employees to understand the importance of product standards and specifications in order to make the appropriate decisions.

In the combination of the centralized and the decentralized system, the managing director is usually the decision maker with respect to accepting orders and make financial decisions related to the cost of production. Once the orders are received, the information is distributed between the respective departments and from there all decisions are usually controlled by the department heads (Fabric Coordinator or the Master for Garment Production). In this system, the respective department heads make decisions regarding the sampling and production of the order; the managing director monitors and oversees the production schedule and provides directions as needed to ensure production as required by specifications.

Thirty-two (91%) Indian textiles and apparel export organizations were found to be private limited organizations. Two organizations (6%) were reported being public limited organizations and one organization (3%) was a government owned organization. Of the 91% of private limited organizations, 26 organizations (74%) were partnership organizations and six organizations (17%) were proprietorship organizations (see Table II). Because of the multiple investors, the partnership organizations have increased funds to invest in the latest equipment available. The largest partnership organizations are registered under different company names in order to avail maximum quotas from the Indian Government to export to the U.S. The practice of operating a partnership under different company names is necessary in order to avail of the quotas under the Manufacturer Exporter Entitlement (MEE) which qualifies each of the companies to receive certain number of quotas individually according to the Q.P. Circular No. 93/11, dated September 9, 1993. This allows partnership organizations to obtain additional export quotas without having to purchase quotas from other Indian exporter companies. By not having to purchase quotas to complete the order the partnership companies have the luxury to quote lower prices to their U.S. clients than companies with fewer quotas. Some exporters with fewer quotas tend to charge buyers exorbitant prices on their orders. These exorbitant prices include a quota price that must be purchased from other exporters in order to have the necessary documentation to ship products

to the U.S. By quoting lower prices the partnership companies are able to accept large bulk orders. Thus they are able to increase their profit margin, making the investment in technologies or equipment that will enhance meeting standards and specifications.

Table I

Types of systems followed within Indian textiles and apparel export organizations

Types of system	n	%
Centralized	20	57
Decentralized	14	40
Both centralized and decentralized	1	3

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that responded to the respective type of system.

%= Percentage of number of textiles and apparel export organizations with respect to the total number of sample.

Table II

Types of Indian textiles and apparel export organizations

Type of organizations	n	%
Private limited organizations		
Partnership organizations	26	74
Proprietorship organization	6	17
Public limited organizations	2	6
Government organizations	1	3

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that responded to the respective type of organization

%= Percentage of number of types of textiles and apparel export organizations with respect to the total number of sample.

Ten (28%) of the Indian textiles and apparel organizations had been in business 20 or more years. Five (14%) of the organizations had been in business between 15-19 years, while 26% have been in business for 10 and less than 15 year. Fourteen percent have been in business for five years and less than 10 years, and 17% less than five years. The longer the export organizations are in business, the better they understand the U.S. textile and apparel industry in terms of meeting the given standards and specification (see Table III).

Table III

Number of years the Indian textiles and apparel export organizations have been in business

Number of years	n	%
< 5	6	17
5 - 9	5	14
10 - 14	9	26
15 - 19	5	14
20 or more	10	28

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that responded to the respective number of years in business.

%= Percentage of number of years Indian textiles and apparel export organizations have been in business with respect to the total number of sample.

Thirty-two out of 35 Indian textiles and apparel exporters reported that they contracted jobs outside of their company. All of the 32 Indian textiles and apparel exporters contracting outside, contract more than one job function. Nineteen (54%) indicated they contract embroidery jobs and fabric production. Fourteen (40%) contract all apparel production operations, 11 (31%) Indian exporters contract both fabric and apparel production outside their organization, eight (23%) include other specific contract operations like button attachment jobs, five (14%) contract dyeing and printing and two (6%) of the Indian exporters contract operations such as finishing, washing, stone washing and acid washing (see Table IV).

Eighteen (52%) use contractors within the city limits of the cities where the corporate offices are located, twelve (34%) contract jobs both inside and outside the city limits, and five (14%) contract outside the city limits (see Table V).

Organizations that contract jobs outside the company usually encounter more human error in the communication of standards and specifications to the contractors than companies with internal production. Additionally, organizations using contractors have less control over the contractor's testing methods and quality control processes.

Thirty-five (100%) organizations reported owning facsimile machines, telephones and typewriters. Thirty-two (91%) organizations had photocopy machines, while 31 organizations (89%) indicated they own computers. Twenty-three (66%) organizations continued using telex services and eleven organizations have electronic mail systems in their organizations (see Table VI).

Table IV

Types of work for which Indian textiles and apparel export organizations use outside contracting

Types of work	n	%
Fabric and apparel production	11	31
Fabric production only	19	54
Apparel production only	14	40
Button attachment	8	23
Embroidery	19	54
Dyeing and printing	5	14
Washing	2	6
Other finishes	2	6

Note. N= 35 Indian textiles and apparel export organizations

n= number of organizations that responded to contracting certain jobs. Some of the exporters responded to contracting more than one job

%= calculations based on the total number of Indian textiles and apparel export organizations reporting a practice as a percentage of N (n/N X 100=%).

Table V

Locations of contracting agencies used for production jobs by the Indian textiles and apparel export organizations

Types of system	n	%
Contract agencies used for production jobs by the Indian textiles and apparel export organizations located within the city limits	18	52
Contract agencies used for production jobs by the Indian textiles and apparel export organizations located both inside and outside the city limits	12	34
Contract agencies used for production jobs by the Indian textiles and apparel export organizations located outside the city limits	5	14

Note. N= 35 Indian textiles and apparel export organizations

n= Number of organizations that responded to the respective type of system

%= percentage of number of textiles and apparel export organizations with the respect to the total number of sample.

Table VI

Types of communication services used by the Indian textiles and apparel export organization

Technologies	n	%
Typewriter	35	100
Facsimile machine	35	100
Telephone	35	100
Photocopy machine	32	91
Computer	31	89
Telex	23	66
Electronic mail	11	31

Note. N= 35 Indian textiles and apparel export organizations

n= number of organizations that responded to own the technologies

%= calculated as % of the total number of Indian textiles and apparel organizations.

Equipment Information

Indian textiles and apparel export organizations with internal production capabilities reported having a variety of different types of equipment including both weaving and knitting equipment. Apparel production equipment include the complete range of equipment needed for apparel design, patternmaking, and other preproduction operations through final finishing and packaging operations.

Textiles production

Organizations owned some types of textiles production equipment. All looms used for internal textiles production were power looms. Hand looms were used only on contract. Six

owns airjet looms (shuttless loom). Six organizations (17%) owned circular knitting machines for single knit fabrics, one organization (3%) owned circular knitting machines for double knit fabrics, while five organizations (14%) owned flat bed knitting machines to produce single knit jersey.

Apparel production

Thirty-four organizations owned some type of apparel production equipment. The one organization that did not own apparel production equipment was a large volume textiles producer.

Preassembly operation

Four (11%) companies owned computerized marker making equipment. Of the 35 organizations interviewed, two (6%) owned computerized cutting equipment and four (11%) owned manual cutting equipment.

Assembly operations

Twenty-nine organizations (83%) indicated they own semi-automatic machines (for example, pocket setting) and eight organizations (23%) owned treadle sewing machines. Sixteen organizations (45%) owned cylinder bed sewing machines to sew sleeves and other curved areas using lockstitch, while fifteen organizations (43%) owned flat bed single needle lock stitch sewing machines. Ten organizations (29%) possess flat bed double needle overedge stitch sewing machines primarily used for blind hemming (100 class stiches) and serging (500 class stitches).

Attachment

Some of the organizations also indicated they own sewing machine attachments that perform various functions. Two organizations (6%) indicated they own shirring attachments and automatic trimmers. Three (9%) of the organizations owned placket attachments while six organizations (17%) own elastic attachments.

Specialty operations

Of the 35 organizations in the study, a total of 17 owned some type of specialty equipment. Fourteen organizations (40%) owned embroidery machines and five (14%) organizations owned decorative sewing machines used for picotting and for other decorative stitches. Block or die pressing equipment is owned by eleven organizations (31%). One (3%)

organization claimed to own automatic snap setters and loop attaching machines. Seventeen organizations (49%) of the organizations owned button sewers.

Finishing Equipment

Finishing equipment owned by the organizations includes steamers for iron pressing, vacuum boilers for drying, and washing and shrinkage control equipment. Twenty-seven organizations (77%) owned steamers for pressers, four organizations (11%) own hand held steam irons, five (14%) owned washing and shrinkage control equipment. Eight organizations (22%) owned vacuum boilers for drying (Table VIII).

Only 30 out of 35 organizations responded to the question concerning the number of persons employed at the corporate level of an organization,. Twenty-two organizations (66%) employed between one and 40 employees. Nine organizations (26%) employed between 41 and 80 employees, one (3%) organization employed between 81and 120employees, one organization (3%) employed between 121 and 170 employees, one organization employed between 171 and 210employees, and one (3%) organization employed more than 211 employees (Table IX).

Table VII

Types of textiles and apparel production technology owned by Indian Textiles and Apparel export organization

Equipment	n	%
Textiles production		
Looms with shuttle	6	17
Airjet looms (shuttless looms)	1	3
Circular knitting machines, single knit	6	17
Circular knitting machines, double knit	1	3
Flat bed knitting machines	5	14
Apparel production		
Preassembly operations		
Computerized marker making	4	11
Computerized cutting machine	2	6
Manual cutting equipment	4	11
Assembly operations		
Semi-automatic sewing machines (example: pocket setting)	29	83
Flat bed single needle lock stitch machine (301 stitches)	15	43
Flat bed double needle overedge stitch machine (503 stitche)	10	29
Cylinder bed sewing machines, lock stitch (for sleeves and curved areas)	16	45
Manual sewing machine, with treadle (301 lock-stitch)	8	23

Attachments		
Shirring attachment	2	6
Placket attachment	3	9
Automatic thread trimmer	2	6
Elastic attachment	6	17
Specialty operations		
Block or die pressing (for pocket creasing, fusing, cuff and collar turning)	11	31
Embroidery	14	40
Decorative sewing, picotting	5	14
Automatic snap setters	1	3
Loop attaching machines	1	3
Button attaching machines	17	49

Note. N=35 Indian textiles and apparel export organizations.

n= Indian organizations that reported owning certain production technologies. Some of the organizations have reported owning more than one technology.

%= Calculation of % based on the total number of Indian textiles and apparel organizations.

Table VIII

Textile and apparel finishing equipment owned by Indian textiles and apparel export organizations

Finishing equipment	n	%
Steam pressing	27	77
Hand held steam irons	4	11
Washing and shrinkage control equipment	5	14
Vacuum boiler for drying	8	22

Note. N= 35 Indian textiles and apparel export organizations.

n= Indian organizations that reported owning finishing equipment. Some of the organizations have reported owning more than one finishing equipment.

%= Calculations based on the total number of organizations that responded to the questions.

Table IX

Number of employees only at the corporate office of the Indian textiles and apparel export organizations

Number of corporate employees	n	%
1-40	22	62
41-80	9	26
81-120	1	3
121-170	1	3
171-210	1	3
211 and above	1	3

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that reported employing the respective number of employees at their corporate office.

%= percentage of number of employees employed at the corporate office of the Indian textiles and apparel export organizations in relation to the total number of sample.

A summary of the responses to the number of persons employed in production were as follows: Thirty of 35 organizations responded to this question. Ten organizations (26%) employed between 1-100 employees; three (9%) of the organizations employed 101-200; four (11%) employed 201-300; one organization (3%) employed 301-400, two organizations (6%) employed 401-500; one (3%) organization employed 501-600; while one another organization (3%) employed 601-700; one organization (3%) employed 701-800 and seven organizations (20%) employed more than 900 employees. Export organizations that executed all jobs within the

company employed a large work force and these companies owned their own production units for all kinds of jobs (Table X).

Thirty-one (89%) of the corporate offices operated six days a week. Two organizations (6%) worked seven days a week while one organization (3%) worked five days or five and a half days a week. The number of days organizations operated corporate offices and production facilities were found to be different for different organizations. In general, corporate offices operated fewer days per week than did production facilities (Table XI). Organizations whose production center employees worked six days a week accounted for 26 (74%) while six organizations (17%) worked seven days a week, and three organizations (9%) worked five days a week (Table XII). Organizations that had their own production units worked six days a week in order to keep up with lead time and stay in business.

Since information in the Indian export companies is handled by more than one individual and one department, it becomes critical to correspond, interpret and respond to communications in a timely manner. When changes in style or other areas occur, it is crucial for the U.S. importer to communicate the changes to all departments of the export business or to particular individuals handling the orders. This communication is critical in order to receive products that adhere to their respective standards and specifications. If one department is in communication while the others are unaware of desired changes, this communication breakdown could cause serious problems during production, especially in the areas of the raw materials, supplies, or packaging.

company employed a large work force and these companies owned their own production units for all kinds of jobs (Table X).

Thirty-one (89%) of the corporate offices operated six days a week. Two organizations (6%) worked seven days a week while one organization (3%) worked five days or five and a half days a week. The number of days organizations operated corporate offices and production facilities were found to be different for different organizations. In general, corporate offices operated fewer days per week than did production facilities (Table XI). Organizations whose production center employees worked six days a week accounted for 26 (74%) while six organizations (17%) worked seven days a week, and three organizations (9%) worked five days a week (Table XII). Organizations that had their own production units worked six days a week in order to keep up with lead time and stay in business.

Since information in the Indian export companies is handled by more than one individual and one department, it becomes critical to correspond, interpret and respond to communications in a timely manner. When changes in style or other areas occur, it is crucial for the U.S. importer to communicate the changes to all departments of the export business or to particular individuals handling the orders. This communication is critical in order to receive products that adhere to their respective standards and specifications. If one department is in communication while the others are unaware of desired changes, this communication breakdown could cause serious problems during production, especially in the areas of the raw materials, supplies, or packaging.

Table XI

Number of corporate working days in a week in the Indian textiles and apparel export organizations

Number of corporate working days	n	%
Six days a week	31	89
Seven days a week	2	5
Five and a half days a week	1	3
Five days a week	1	3

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that reported the respective number of corporate working days in a week.

%= Percentage of number of corporate working days in a week of the Indian textiles and apparel export organizations in relation to the total number of sample.

Table XII

Number of production working days in a week in the Indian textiles and apparel export organization

Number of production working days	n	%
Six days a week	26	74
Seven days a week	6	17
Five days a week	3	9

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that reported the respective number of production center working days in a week.

%= Percentage of number of production center working days in a week of the Indian textiles and apparel export organizations in relation to the total number of sample.

Laboratory testing is reported on testing procedures performed in internal or external laboratories and in relation to organizational structure. All Indian companies were found to be performing some laboratory testing procedures. Twenty-five organizations (71%) were executing laboratory test procedures externally using outside laboratories, six organizations (17%) were executing laboratory tests internally using their own company laboratories, and four organizations (11%) were executing laboratory tests both within the organizations as well as with outside testing laboratories (Table XIII). Additional information regarding the type of tests performed is reported in the section summarizing Research Question III.

Table XIII

Lab testing procedures conducted at different centers by Indian textiles and apparel export organization testing procedures

Lab testing centers	n	%
Lab testing agencies outside the organization	25	71
Lab testing within the company	6	17
Lab testing done both at the agency as well as within the organization	4	12

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations that reported the respective place for executing laboratory test procedures.

%= Percentage in relation to the total number of sample of Indian textiles and apparel export organizations that execute laboratory testing procedures at respective centers.

Twelve organizations (34%) recruited corporate office employees who have a bachelor's degree and experience in textiles and apparel. Seven organizations (20%) recruited employees with a bachelor's degree only; four (11%) organizations recruited individuals with experience in textiles and apparel only; two (6%) organizations recruited on the basis of qualifications in textiles and apparel operations, a bachelor's degree and diploma (from a short term trade school) in textiles and apparel, experience in textiles and apparel operations and having loyalty to past employer; and one organization (3%) recruited employees having a bachelor's degree and loyalty to past employer, experience in textiles and apparel operations, good communication ability, good aptitude for textiles and apparel operations, an optimistic attitude, willingness to work hard, flexibility, and good recommendations (Table XIV).

Table XIV

Qualifications of corporate employees for Indian textiles and apparel export organizations

Qualifications	n	%
Highly qualified in textiles and apparel operations	2	6
Bachelor's degree and experience in textile and apparel operations	12	34
Bachelor's degree and diploma in textiles and apparel (short term trade school)	2	6
Bachelor's degree and company loyalty	1	3
Bachelor's degree only	7	20
Experience in textiles and apparel only	4	11
Experience in textiles and apparel and company loyalty	2	6
Experience in textiles and apparel and good communicating ability	1	3
Textile and apparel aptitude with knowledge and strong involvement in work	1	3
Optimistic attitude, good ethics and willingness to work hard	1	3
Common sense and flexibility for change (easy adaptation capability)	1	3
Has good recommendations	1	3

N= 35 Indian textiles and apparel export organizations.

About 22 organizations (53%) had employees who were highly trained in textiles and apparel production operations, four organizations (11%) of the total sample had employees with no job experience who were recruited based on the assessment of the employee's loyalty to the company, while three organizations (9%) were found to recruit employees for production operations based on applicants job knowledge and a high school education (Table XV).

Table XV

Qualifications of production employees in Indian textiles and apparel export organizations

Qualification	n	%
Highly trained in textiles and apparel operations	22	53
Highly trained in textiles and apparel operations and loyalty to past employer	4	11
Highly trained in textiles and apparel operations and holding a diploma (from a short term trade school)	1	3
Highly trained in textiles and apparel operations with high school education	3	9
Minimal experience but willingness to be trained	4	11
Untrained in textiles and apparel operations	1	3

N= 35 Indian textiles and apparel export organizations.

Research Question II

The following summary identifies and describes the methods used to communicate product standards and specifications between the U.S. clients and the Indian exporters and within the Indian textiles and apparel export organizations. Most organizations received written orders; 57% received them by facsimile; 23% received orders orally by telephone and by facsimile; 11% received orders through facsimile as well as through courier services; 6% received orders orally by telephone, facsimile, and courier services; and only 3% of the organizations received orders through courier service. The majority of the organizations received orders though facsimile to save time as well as to get a hard copy of the order for better understanding as well as proof of orders.

The problems usually encountered due to oral telephone communication include: Nine Indian exporters were found to encounter problems in different areas while receiving orders from U.S. clients via telephone. Three (33%) of the Indian export organizations reported encountering problems related to interpreting terms, three organizations (33%) failed to hear some words, and one organization (11%) encountered problems that were unique in each case, such as being unable to hear clearly, being unable to understand due to the caller's accent, and misinterpreting packing instructions (Table XVI). Most problems due to miscommunication were encountered while receiving orders by telephone either due to misinterpretation of information or hearing words incorrectly.

Table XVI

Problems encountered by Indian textiles and apparel export organizations while receiving orders from their U.S. importers by telephone

Problems encountered	n	%
Misinterpretation of words/accent	3	33
Mishearing of some words	3	33
Incorrectly hearing	1	11
Cannot understand the problem	1	11
Misinterpretation of packing instructions	1	11

Note. N= 9 Indian textiles and apparel export organizations that responded to the question.
n= Number of organizations that responded to the respective problem encountered while receiving orders by telephone from their U.S. importers.
%= Percentage of Indian textiles and apparel export organizations that responded to respective problems. Percentage calculated in relation to the total number of sample that responded to the question. Percent total does not equal 100% due to rounding off.

Eight out of the 35 Indian textiles and apparel export organizations reported that U.S. importers visit their organization to place orders personally. Out of the Indian textiles and apparel exporters receiving orders personally, two organizations (25 %) reported that their clients visit them twice a year, while one organization (12.5 %) reported visit three times a year, four times a year, only for the first few orders, for all the orders, once in three months, and once in two months (Table XVII).

Table XVII

Number of times U.S. importers visit the Indian textiles and apparel export organizations to do business

Number of times	n	%
Twice a year	2	25.0
Three times a year	1	12.5
Four times a year	1	12.5
For all the orders	1	12.5
Once in three months	1	12.5
Once in two months	1	12.5
Only for the first order	1	12.5

Note. N= 8 Indian textiles and apparel export organizations that responded to the question. n= Number of organizations that received a visit from their U.S. importer at different times. %= percentage of Indian textiles and apparel export organizations that reported respective number of times the U.S. importers visited them. The percentage is calculated in relation to the total number of sample that responded to the question.

Thirty-four Indian textiles and apparel organizations reported that they receive specification information by facsimile to execute production orders. All the organizations reported receiving more than one specific piece of information as indicated in table XVII. Combinations of units of information received by the Indian textiles and apparel organizations is explained in Appendix B. Thirty-one (91%)Indian textiles and apparel organizations reported receiving a sketch of the design, 30 organizations (88%) reported receiving graded specification sheets by facsimile, 29 organizations (85%) received sewing details by facsimile, 27 Indian textiles and

apparel export organizations (79%) reported that color standards are given from standard color charts, 26 organizations (77%) received trim instructions, and 21 (62%) were received pattern descriptions by facsimile (Table XVIII).

Table XVIII

Kinds of production information sent by U.S. importers to Indian textiles and apparel export organizations by facsimile

Information	n	%
Graded specification sheet	30	88
Sketch of the design	31	91
Sewing details	29	85
Pattern description	21	62
Trim instructions	26	77
Naming color standards from the book	27	79

Note. N= 34 Indian textiles and apparel export manufacturers.

n= Indian organizations that reported that they received certain information from U.S. importers by facsimile. All the organizations that responded to this question reported receiving a various kinds of information.

%= Calculations based on the total number of Indian textiles and apparel export organizations that reported that they received information from U.S. importers by facsimile.

A summary of the reported information from Indian textiles and apparel export organizations regarding specifications and sample information received for production from U.S. importers through courier services is discussed. The Indian organization that responded to the

question reported receiving more than one specific piece of information indicated in the table. Combinations of units of information received by the Indian textiles and apparel organizations is indicated in Appendix C. Thirty-four Indian textiles and apparel export organizations (97%) reported receiving fabric samples with repeats; 32 (91%) received sketches of the design; 31 (89%) of the organizations received yarn color standards; 29 (83%) of the export organizations received photos, garment samples and samples of wash care instructions; 80% reported that they received color charts, 27 (77%) export organizations received samples of trims; 23 Indian textiles and apparel export organizations (66%) reported that they received instructions on the testing methods to be adopted; 21 (60%) of the organizations received paper patterns from their U.S. clients; and ten (28%) of the Indian textiles and apparel export organizations received packing instructions and polybags to be used for packaging (Table XIX).

Table XIX

Kind of production information sent by U.S. importers to the Indian textiles and apparel export organization by courier service

Information	n	%
Fabric samples with a repeat	34	97
Sketches of the design	32	91
Yarn color standards	31	89
Photos	29	83
Garment samples	29	83
Sample of wash care instructions	29	83
Color charts	24	80
Sample of trims	27	77
Testing methods to be adopted	23	66
Paper patterns	21	60
Packing instructions and polybag to be used for packing	10	28

Note. N= 35 Indian textiles and apparel export manufacturers.

n= Indian organizations that reported that they receive certain information from U.S. importers through courier service.

%= Calculations based on total number that received information from U.S. importers by facsimile.

Each of the six organizations reported receiving specifications by telephone. Three (50%) organizations reported communicating the garment assembly process and the design description of the garment by telephone, four (66%) of the organizations communicated sewing details over the telephone, and five (83%) of the organizations communicated trim instructions and specification measurements by telephone (Table XX).

Table XX

Kinds of production information conveyed by Indian textiles and apparel exporters to their production centers by telephone

Information	n	%
Design of the garment	3	50
Assembly process	3	50
Sewing details	4	66
Trim instructions	5	83
Specification measurements	5	83

Note. N=6 Indian textiles and apparel export organizations.

Only six organizations responded to this question with different specification combinations. The table indicates the number of organizations that responded to that specific specification.

n= Indian organizations that reported that they convey certain information to their production center by telephone.

%= Calculation based on the total number of Indian textiles and apparel export organizations.

Company representatives were asked to describe problems related to misinterpreting information received by telephone. Six organizations that responded to the question reported encountering problems interpreting specifications by telephone. All six (100%) of the respondents reported problems in understanding sewing details, five (83%) organizations reported encountering problems understanding the garment assembly process and the specification measurements, three (50%) of the Indian organizations reported difficulties in understanding the trim instructions, while two (33%) of the organizations reported a failure to understand specification measurements (Table XXI).

Data were obtained on the kinds of information sent to production centers through courier or personal services. Thirty-one of thirty-five organizations reported sending production information through courier or personal services. All Indian textile and apparel organizations that responded to the questionnaire reported receiving more than one specific piece of information listed in Table XXI. Combinations of units of information received by the Indian textiles and apparel organizations are indicated in Appendix D. Thirty organizations (86%) reported providing fabric samples with a repeat for production; 31 (83%) of the Indian textiles and apparel export organizations would send garment samples and photos by courier services or deliver them personally to the production centers; 28 (80%) of the organizations sent sketches of designs and samples of care instructions to the production centers; 26 (74%) of the Indian textiles and apparel organizations reported sending a sample of care instructions to the production centers only at specific times depending on the kind of trims and fabrics used, 25 (71%) of the Indian textiles and apparel organizations reported sending instructions regarding testing methods to be adopted, 23 (66%) of the organizations reported providing paper patterns (if received from U.S. clients) to the production centers, while only five (14%) of the organizations reported communicating packing instructions to the production centers through the mail or courier services (Table XXII).

Regarding interpretation of detailed specifications and instructions to the local language for better understanding of local production workers, 80% of respondents indicated they translate English to the local language. Sixty percent reported adding more information on the swatch card

Each of the six organizations reported receiving specifications by telephone. Three (50%) organizations reported communicating the garment assembly process and the design description of the garment by telephone, four (66%) of the organizations communicated sewing details over the telephone, and five (83%) of the organizations communicated trim instructions and specification measurements by telephone (Table XX).

Table XX

Kinds of production information conveyed by Indian textiles and apparel exporters to their production centers by telephone

Information	n	%
Design of the garment	3	50
Assembly process	3	50
Sewing details	4	66
Trim instructions	5	83
Specification measurements	5	83

Note. N=6 Indian textiles and apparel export organizations.

Only six organizations responded to this question with different specification combinations. The table indicates the number of organizations that responded to that specific specification.

n= Indian organizations that reported that they convey certain information to their production center by telephone.

%= Calculation based on the total number of Indian textiles and apparel export organizations.

Table XXII

Kinds of information related to production sent by the Indian textiles and apparel export organizations to the production centers by mail / courier service

Information	n	%
Fabric samples with a repeat	30	86
Yarn color standards	31	89
Color charts	24	69
Paper pattern	23	66
Sketches	28	80
Garment samples	29	83
Photos	29	83
Sample of trim	26	74
Sample of wash care instructions	28	80
Testing methods to be adopted	25	71
Packing instructions	5	14

Note. N= 35 Indian textiles and apparel export organizations.

n= Number of organizations reporting that they send certain information by mail / courier / personal delivery to their production centers.

%= Calculation of Indian textiles and apparel export organizations reporting that they send certain information by mail / courier / personal deliver to their production centers based on the total number of textiles and apparel export organizations.

Research Question III

The quality control practices of the Indian textiles and apparel organizations is discussed in this section. These findings allow U.S. importers to understand the limitations and the extent to which the Indian textiles and apparel export organizations actually adhere to U.S. quality standards. Based on the responses, it is clear that there are three types of laboratories used by the Indian textiles and apparel export companies for testing: 1) government testing labs, namely the South India Textiles Research Association Laboratory located at Coimbatore; 2) private testing laboratories, namely Fabric Technical Laboratory, Beardsell Laboratory, and Tex & Lab located in Salem; 3) laboratories operated by organizations, namely laboratories owned by Arati Exports where the products from their production unit is tested within their premises. Even if the export company own the laboratory, it is mandatory that the Indian government certify the laboratory to conduct testing procedures. The testing procedures and the required standards are usually decided by the U.S. importer. Different Indian export organizations conduct different tests based on the requests made by their U.S. buyers. From the survey, it was obvious that the Indian export organizations conducted specific testing procedures at specific stages only if it was requested by the U.S. buyers.

Twenty-three (96%) of the Indian textiles and apparel export organizations conduct color fastness tests at the sample stage, 20 (83%) of the Indian textiles and apparel export organizations conduct tests for crocking, 22 (92%) of the organizations test for shrinkage, 19 (79%) test for care instructions that is indicated on the label and only 63% test for durability. The total number of export organizations that were found to be conducting laboratory testing methods at the sample stage was 24 out of the 35 organizations (Table XXIII).

Twenty-seven export organizations executed laboratory testing procedures at the production stage. Organizations that conduct laboratory testing procedures at the production stage account for about 77% of the total sample. Twenty-seven (100%) of the organizations that conduct laboratory testing procedures at the production stage test for colorfastness, while twenty

six (96%) test for shrinkage, 21 (78%) organizations test for crocking, 19 (70%) organizations test for care instructions, and only 17 (63%) of the Indian textiles and apparel export organizations test for durability. Indian textiles and apparel export organizations that conducted laboratory testing at the sample stage conducted the same laboratory tests at the production stage as requested by their respective U.S. buyers (Table XXIV).

Thirty-five organizations were found to conduct preproduction inspection and production inspection for textiles and apparel export organizations. Organizations that conducted preproduction inspections followed the instructions provided by the U.S. importer. Sixteen organizations (46%) followed specifications with tolerances given by their U.S. importer. Ten (29%) of the Indian textiles and apparel export organizations followed the American Association of Textile Chemist and Colorist standards (AATCC) for preproduction testing. Five (14%) were found to use standards set forth by the American Standard Testing Method (ASTM), which is usually preferred by their respective U.S. importers and two (6%) of the exporters were found to adhere either to the standard laboratory testing methods of the Indian testing laboratories or to a combination of ASTM and AATCC standards.

Table XXIII

Laboratory testing procedures that are undertaken at the sample stage by the Indian textile and apparel export organizations

Test	n	%
Durability	15	63
Colorfastness	23	96
Crocking	20	83
Care	19	79
Shrinkage	22	92

Note. N= 24 Indian textiles and apparel manufacturers. Although 35 Indian textiles and apparel organizations responded conducting laboratory tests at the sample stage, production stage or at the preproduction stage, only 24 organizations reported testing at the sample stage.

n= Number of organizations that reported conducting certain types of laboratory tests. Certain Indian organizations may have reported that they employ more than one test method.

%= Calculations based on the number of Indian textiles and apparel organizations that reported that they conduct laboratory testing procedures at the sample stage.

Table XXIV

Lab testing procedures undertaken at the production stage by Indian textiles and apparel export organizations

Test	n	%
Durability	17	63
Colorfastness	27	100
Crocking test	21	78
Care	19	70
Shrinkage	26	96

Note. N= 27 Indian textiles and apparel export organizations. Total number of organizations that conducted testing procedures at the production stage was 27. Some organizations conduct more than one test. A combination of testing methods adopted by different organizations is indicated in tables in Appendix E.

n= Number of organizations that employ certain laboratory testing procedures. Some of the organizations employ more than one test method.

%= Calculations based on the total number of Indian textiles and apparel export organizations Reporting they conduct laboratory testing procedures at the production stage (Table XXV).

Table XXV

Types of standards and specifications Indian textiles and apparel export organizations follow for preproduction inspection or production inspection

Types of standards and specifications	n	%
General specifications given by		
U.S. importers	16	46
AATCC only	10	29
ASTM only	5	14
ASTM and AATCC	2	6
Standards approved by Indian laboratory testing agency	2	6

Note. N= 35 Indian textiles and apparel export organizations that responded to the question. n= Number of organizations that conducted the specific standards and specifications. As the Indian textiles and apparel organizations conduct specific laboratory tests based on their respective buyer's request, the Indian organizations have to follow the specific standards given by their buyers. Different buyers may follow different standards for testing textiles and apparel. %= Percentage of Indian textiles and apparel export organizations that reported that they used respective standards and specifications. Percentage calculated in relation to the total number of responses.

The Indian textiles and apparel export organizational structure and their communication process within the organization as well as with their U.S. buyers has a profound impact on the quality of the fabrics or the garments exported. Due to the nature of the Indian organizational structure, in terms of division of departments, as, for example, the fabric department, the garment

department, or contracting jobs outside, it is very important that information regarding the manufacturing centers are clearly indicated to the U.S. importers. By establishing efficient operational procedures with their U.S. buyers, the Indian exporters will receive the necessary communications regarding the orders in time and clearly without any confusion. If the U.S. buyers are not aware of the organizational structure and the operational procedures with their counterpart in India, the buyers will not be able to provide sufficient details for the individual departments or job centers. Sending samples ensure standards and specifications are met by Indian exporters (corporate office). This would provide the opportunity to make duplicates rather than having samples divided between production units. The cut samples result in the duplication of incomplete or partial specifications that could result in being difficult to interpret by the manufacturing department. If the standards and specifications are not properly communicated to the necessary departments, by the corporate office of the Indian exporter or if individuals in the department tend to be unaware of the standards and specifications, this could lead to defective mass production. Thirty-three out of 35 (94%) organizations experienced fabric complaints, 29 organizations (83%) experienced late delivery complaints, 27 (77%) of the Indian textiles and apparel export organizations experienced poor garment construction defect complaints, and 20 (57%) of the Indian textiles and apparel export organizations experienced poor appearance complaints (Table XXVI).

In order to avoid exporting defective garments or fabrics, it has become necessary to detect the problem by inspecting the goods during different stages of production. Although the majority of Indian textiles and apparel organizations supervise and detect problems at various stages of production (100%), only 27 (77%) of the Indian textiles and apparel export organizations check every piece of the fabric or garment, four (12%) conduct a random checking of the fabric or the garment piece, while four (11%) check every piece and as well do a final random check of the fabric or the garment just before shipment. The majority of the Indian export organizations (88%) consider it beneficial to check every piece of the fabric or garment in order to avoid the risk of rejection, while 9% of the Indian textiles and apparel export organizations consider it beneficial to

do a random checking procedure to avoid labor costs, while only 3% of the Indian textiles and apparel export organization feel it to be beneficial to execute both a random checking procedure as well as checking every piece (Table XXVII).

The majority 29 (86%) Indian textiles and apparel export organizations recorded the quality inspection results. Of the 29 that recorded the quality inspection results, only 83% analyzed the results, while 3% did not analyze the results.

Out of the 29 organizations that recorded the quality inspection results and analyzed them, 27 (93%) of them had their own organization analysts analyze the results. Two (7%) were found to have analysts within the organization to analyze the results as well as have their importers agents analyze the result (Table XXVIII). The analysis of the inspection records was executed to improve quality standards.

The majority of 24 Indian textiles and apparel organizations (69%) were found to analyze the results after every consignment, while five organizations (14%) were found to analyze at the end of every season, and one Indian textiles and apparel export organization (3%) for each of once a year, at every stage of shipment, only during a crisis, every week, once in a quarter (Table XXIX).

Table XXVI

Types of defect complaints that Indian textiles and apparel export organizations usually receive from the U.S. importer about the product

Types of defects	n	%
Fabric defects	33	94
Late deliveries	29	83
Poor construction	27	77
Poor appearance	20	57

Note. N= 35 Indian textiles and apparel export organizations encountering different defects in the fabric or garment. Some organizations may encounter more than one defect.

n= Number of organizations that received complaints from their buyers regarding the defects.

%= Percentage of Indian textiles and apparel export organizations that received complaints regarding the defects. Percentage calculated in relation to the total number of the sample that responded to the question.

Table XXVII

Types of inspection processes that Indian textiles and apparel export organizations adopt

Types of inspection process	n	%
Check every piece	27	77
Random checking	4	11
Check every piece and random checking	4	12

Note. N= 35 number of Indian textiles and apparel export organizations conducting inspection at different stages.

n= Number of organizations that adopted the respective type of checking process.

%= Percentage of Indian textiles and apparel export organizations that adopted the respective type of checking process. Percentage calculated in relation to the total number of respondents that answered the question.

Table XXVIII

Maintenance and analysis of inspection records by Indian textiles and apparel export organizations

Analysis of inspection records	n	%
Analysts within the organization	27	93
Both analysts within the organization as well as buyer's representatives	2	7

Note. N= 29 Indian textiles and apparel export organizations that analyzed inspection records in order to develop better standards.

n= Number of organizations that engaged the respective analysts to inspect the inspection records.

%= Percentage of Indian textiles and apparel export organizations that engaged the respective analysts to inspect the inspection records. Percentage calculated in relation to the total number of organizations that responded to the question.

Table XXIX

Time of analysis of the inspection records by Indian textiles and apparel export organizations

Time of analysis of the inspection records	n	%
After the completion of every consignment	24	69
End of every season	5	14
Once a year	1	3
At every stage of shipment	1	3
Only during a crisis	1	3
Every week	1	3
Every quarter of a year	1	3

Note. N= 29 number of Indian textiles and apparel export organizations analyzing their inspection records.

n= Number of organizations engaged in analyzing records at the respective period of time.

%= Percentage of Indian textiles and apparel export organizations engaged in inspecting records at the respective period of time. Percentage calculated in relation to the total number of organizations that responded to the question. Percent total does not equal 100% due to rounding off.

Research Question IV

Research question IV involves the acceptance or rejection of goods by U.S. buyers, quantities increased or decreased, and retention or loss of clients as perceived by the Indian exporters.

The majority of 30 (86%) organizations were found to be successful in satisfying U.S. importers instructions with all orders all of the time, while three (8%) were not successful in satisfying the needs of U.S. buyers, but the remaining organizations were successful in satisfying the needs of the U.S. buyers most of the time and sometimes (3% each). The majority of organizations n= 30, (86%) satisfied the needs of their U.S. buyers and received repeat orders consistently (Table XXX).

The Indian textiles and apparel export organizations encountered complaints from their U.S. buyers regarding unclean products, finishing process, and late deliveries. Other complaints included sewing problems, using the wrong trims and labels, and incorrect packaging. Complaints about color fastness, fabric flaws, fabric substitutions without approval, wrong pattern marker, price and after service sales were also identified. The major issue related to complaints from clients as perceived by the Indian exporters were late deliveries, followed by the sewing problems regarding the establishment of proper communication and understanding the required standards and specifications.

Table XXX

Indian textiles and apparel export organizations perception of satisfying U.S. clients

Number of Indian textiles and apparel organizations who perceive their U.S. clients as satisfied or not satisfied with the Indian goods	n	%
Always successful in satisfying the needs of the U.S. importer	30	86
Most of the time successful in satisfying the needs of the U.S. importer	1	3
Sometimes successful in satisfying the needs of the U.S. importer	1	3
Always not successful in satisfying the needs of the U.S. importer	3	8

Note. N= 35 number of Indian textiles and apparel export organizations indicating the number of times their U.S. clients were satisfied.

n= Number of organizations that felt they satisfied the U.S. buyers

%= Percentage of Indian textiles and apparel export organizations who that felt they satisfied the U.S. buyers. Percentage calculated in relation to the total number of organizations that responded to the question.

Chapter V

DISCUSSION OF FINDINGS

Indian textiles and apparel export sectors are developing at a tremendous pace. The U.S., being one of India's major importing countries, will benefit from India's export development by obtaining quality and unique textiles and apparel products and in meeting the current trends and fashions at low cost. Establishing and selling Indian textiles and apparel in the U.S. can also bring valuable U.S. foreign exchange to India. At the same time, Indian textiles and apparel goods have to meet the required standards and specifications and have to be quality conscious to sell to the U.S. Quality is a matter of understanding and communicating the standards and specifications clearly. To communicate standards and specifications based on the Indian environment, U.S. importers have to understand the practices of the Indian textiles and apparel export organizations. Understanding Indian textiles and apparel export organizations will enhance business activities with India more efficiently.

The purpose of this study was to identify and describe: (a) the different types of Indian textiles and apparel export organizations, (b) the methods used to communicate product standard and specifications between the U.S. importer and the exporter as well as within the Indian textiles and apparel organization, and (c) the extent to which quality control practices of Indian textiles and apparel export organization meet the quality expectations of their U.S. clients. The required criteria were: (a) Indian exporters should have an export license to export textiles and apparel to the U.S. and (b) Indian exporters should be directly communicating with the U.S.

importers without any intermediaries. The 35 exporters were based in the southern region of India and were spread over Coimbatore, Madras, Salem and Tirupur all in the state of Tamilnadu. Data was collected through a personal interview process. The subjects were first contacted by telephone with a brief introduction of the study indicating the researcher's interest and then a time and date were fixed for the personal interview. All interviews lasted approximately two hours. A common set of questions was asked of all Indian textiles and apparel export organizations. Two out of the thirty-seven exporters had not yet shipped goods to the U.S. but were establishing their product line and organization in expectation of exporting to the U.S. market. Therefore only 35 organizations met the required criteria.

Types of Indian Textile and Apparel Export Organization

A majority (91%) of the Indian textiles and apparel export organizations are privately owned companies: Seventy-four percent are partnership organizations, 17% are proprietorship organizations, 6% are public limited organizations (companies with public share holders), and 3% represented a government-owned organization. Partnership companies are largely recommended to do business with due to the high monetary investments by the two or more partners. Large monetary investments are necessary for the Indian textiles and apparel export organizations to establish production units with the latest production equipment. Exporters owning the latest production equipment can better maintain quality standards and adhere to specifications more closely. Due to India's technological and production equipment limitations, Indian exporters have to depend on importing technologies that will help achieve global quality standards, and this inturn requires large investments for the exporters which is more feasible in a partnership organization. By obtaining the necessary technology to maintain U.S. required standards, Indian exporters would be able to adhere more closely to the quality standards and specifications of the U.S. importers. Also by adhering to correct quality standards and specifications, Indian exporters can be more confident that they will receive increased order quantities that will benefit the exporter

and in turn, the Indian government, by earning foreign exchange. An additional benefit could be a long lasting trade relationship between the two countries.

Size of the organization

Considering the responses on the number of employees, they were categorized into small, medium and large companies. Organizations were grouped as small, based on their low total number of employees. Medium organizations employed about 201-300 employees and large organizations employed over 300 employees. All organizations have employees who work on a full time basis. The majority of the organizations were small companies employing less than 200 employees. Small export organizations contract majority of the production operation. While a medium organization contracts a partial operations and the rest is completed within the organization. But large export organizations complete production operations within their own units but sometimes due to high volume they may contract few production operations outside. Contracting jobs with outside contractors limits Indian exporter in controlling the mass production in case of color differences in bulk fabric production or design variations in garment production. Having less control over production, could lead to product not meeting the required standards and specifications. It also becomes very critical to establish clear communication and requires constant monitoring of the Indian exporters by the U.S. importers to ensure that the specifications are promptly communicated to different contractors. Larger the number of contractors involved, it becomes necessary for the U.S. importers to send larger specification samples to the Indian exporter to distribute enough of the sample for each contractor to study the details of the design for production. With fewer contracting and more control over production is usually more inclined to meet the required standards and specifications and meet the delivery time.

Centralized or Decentralized

A majority (57%) of the Indian textiles and apparel organizations follow a centralized system in which only the head of the organization has the authority to communicate with the U.S. clients and make any major decisions regarding production or any other company matters. All decisions have to be approved by the head of the export organizations. In the centralized systems communication regarding production concerns passes through supervisors, head of production and then to the head of the organization who in turn contacts the buyers or makes decisions based on their past experience. By following the centralized method, export organizations expect to avoid making decisions independently that may not be acceptable for the U.S. importers and thereby the head of the organization solves problems and thus believe in reduced risk of rejection of textiles and apparel goods by the U.S. client. All but five companies reported being the parent companies in which a centralized system is more common. In the case of decentralized systems each department is responsible for communicating and making production decisions related to changes with the clients directly through the merchandisers. In the centralized system it is assumed to take longer time in making decisions that may affect the delivery period. The long chain of communication to pass information through different sources to reach the U.S. importer for the confirmation of change, could escalate the problem dealing with difference in the time between the two countries and thereby holding production for another day or two and thus leading to late delivery time. This could pose a problem for the U.S. importers from receiving the order in time for distribution to the retailers within the U.S. whereas with a decentralized system experienced personnel in different departments are authorized to make decisions if necessary concerning any production problems that may not have a major change in the specification and also keep the delivery time in line. In a centralized system not only are the head of the organizations involved in the decision making process but also receive the specifications from U.S. clients directly and is soley responsible for distributing the information to the individual departments. Sometimes in an unforeseen absence of the head of the organization, the specifications may not reach the individual departments in time to start the production as a

result this could lead to late deliveries or rushed production leading to delivery of defective fabrics or garments. With the decentralized system individual departments receive the information directly. Production could begin immediately on receipt of the production information.

Owning production technology and process of contracting

Seventeen percent of the organizations reported owning looms or knitting machines while the majority of the organizations interviewed possessed sewing machines for apparel manufacturing. This indicates that the majority of fabric construction was contracted. Some of the organizations with large self owned established manufacturing units indicated to have more advanced equipments for accurate production like computerized marker making, and computerized cutting machine. Different organizations seemed to own equipments for specialized operations based on their general manufacturing requirements.

A majority (52%) of the Indian textiles and apparel export organizations reported to contract fabric production. Some export organizations have looms to weave woven fabrics and knits. Export organizations that possess looms also do contracting jobs for other exporters when their factories are out of orders. One of the reasons for this is to retain the work force and keep the business going during slow periods. In the case of apparel manufacturing, exporters usually receive orders that exceed their factory capacity and therefore need to turn to other exporters or agencies to contract the job out to successfully complete the orders.

Once Indian exporters receive the orders, they immediately calculate the fabric requirements, lead time, write out the necessary fabric production information and place the order with their fabric contractors who could be another exporter or contracting agency with a lesser volume of business. This is only in cases where the exporter receives an apparel production order and does not own looms to weave fabrics. When the fabric production is contracted, exporters usually have a supervisor to monitor the production and to make sure orders reach the exporters in time to manufacture the garment. Usually the apparel exporters have little or no

control over the fabric contractor's process of production. The contractors are generally not aware of the market or the client for whom the fabric is produced. All payments to the contractors are made by the Indian exporter in Indian currency. The contractors also face less risk of rejections or defects than the exporters themselves. The fabric contractor's responsibility ranges from buying yarns for material to the completion of fabric production. The same responsibilities apply to garment contractors, but with slight modifications in terms of receiving fabric from fabric contractors and manufacturing the apparel. For example, the garment manufacturer may receive the fabric from the exporter and manufacture the garment according to the specifications. The payment process for garment contracting is similar to fabric contracting. Owning production technologies would increase the chance of producing the complete order within the organization and thereby enable to control the production at different stages and inspect at any stage of production if necessary.

Methods used to communicate between the U.S. importer and the Indian exporter.

All export organizations have typewriters, facsimile machines, and telephone services. The majority (89%) of the export organizations also own computers. Although telex is outdated due to its inability to effectively transmit drawings and to communicate the design, a few exporters still use this service to communicate lengthy transmissions. Improved communication technology helps exporters communicate quickly and clearly with their U.S. importers as well as with their factories. Most export organizations agree that a facsimile is a good documented proof of exchanged information between two parties.

All Indian textiles and apparel exporters receive product standards and specifications through facsimile or courier services. Basic details of the garment are received first by facsimile confirming the order quantity. In some cases the graded specification sheet or the design of the fabric is followed by the complete set of sample fabrics, garments, color standards, trim instructions, yarn color standards, packing instructions, sometimes paper patterns and wash care

instructions. Documents pertaining to the shipping is also sent by private courier or postal services. Some exporters receive approvals, changes, and other required information from the U.S. importers through facsimile services. The telephone is used at times when a problem related to production needs to be solved immediately. Some U.S. clients do not object to being disturbed during early or late operating hours due to the time difference between the two countries. Sometimes even if the exporter has all communication facilities to communicate to the U.S. client due to large volume of power failure in different parts of India it becomes difficult for the Indian exporters to communicate with the U.S. buyers. Majority of the exporters reported that their clients visit them at least once a year, during which time detailed instructions are shared regarding the orders for the seasons and thus do not soley depend on communication technology to place orders. Samples are exhibited for buyer's approval during this time. In most cases, the clients just hand-deliver the sample with the necessary changes on a swatch card unless there is some major change required from the sample swatch or sample garment. By personally visiting the Indian exporter will help determine if the exporter is going to execute the order within the organization or contract. By determining how the production is going to be executed can help in delivering adequate sample standards and specifications that may be distributed to different contractors. In cases where contractors may sub-contract it becomes necessary to receive a large portion of the sample specifications so that the contractors and the sub contractors receive a share of the sample with complete design. In order to determine the quantity of the sample to be sent it becomes necessary for the U.S. client to be aware of the production operation Indian exporter.

Communication within the Indian textiles and apparel export organizations

The majority of the organizations reported using telephone, face to face contact, and courier services to communicate information to production centers. Courier service is used whenever orders are contracted outside the exporter's city limits and take 24 hours to reach the production center. Parcels will be delivered personally to the factories within the city limits and will

only take one hour to reach the production centers from the corporate office. Where orders are contracted outside the city limits, the exporter's employee is stationed at the city of production to distribute the orders to the right contracting center and to supervise the production quality and time schedule. This supervisor at the production center is also responsible for coordinating the production status with the corporate office daily, and weekly when facsimile, computers, and telephones expedite the communication process. Indian exporters use telephone services only to communicate basic information and changes that may not be too confusing to the production centers. Face-to-face communication generally takes place on a daily basis when the merchandisers and production supervisor visit the factory to solve production related problems and explain difficult designs. By contracting outside the city limits the exporter has very little control over production especially in the absence of an exporter's representative to constantly monitor the production. Proper communication of production problems between the contractor and the exporter becomes difficult even if either of them do not have proper communication technology. While contracting within the city limits gives the Indian exporter the advantage of visiting the production center more frequently. Face-to-face communication has more impact in communicating the necessary specifications to the production unit and gives an opportunity to explain in detail.

When the exporter receives the production package from the U.S. importer, the information for the fabric production department and apparel production department is separated, placed on the exporter's swatch card, and if necessary, the message is translated into the local language for the weaver's or tailor's better understanding. The weavers or tailors are given the sample swatch, which is cut into two halves, for fabric production. One half is retained by the exporter as a reference, while the other half will be sent to the exporter's representative at the fabric production centers. The exporter's representative then retains a portion of the one half for his or her own reference and distributes the other part to the production centers depending on the number of centers. Sometimes, if the swatch is too small, the production centers may not receive a complete design. This could lead to problems with design during production.

In the case of apparel production, the information is written on the exporter's swatch card with the necessary details included according to the specification and then sent to the production center along with the samples. Information often distributed to the production centers through personal service or courier services consists of a sample of the garment, sketch of the design, design description, trim instructions, and other required sewing details.

One other finding from this study indicated that certain fabrics were manufactured only in particular parts of the state. Therefore, one would often find knit fabric and garment production in Tirupur, woven fabric productions at Salem and Coimbatore, and woven garment manufacturers at Madras.

Methods of quality control used by Indian export organizations for inspection procedure.

Some (77%) of the Indian textiles and apparel export organizations responded to doing laboratory testing at the sample stage as well as at the production stage while 68% responded to conducting laboratory testing procedures only at the sample stage. A majority of the Indian textiles and apparel export organizations do laboratory testing with outside laboratory testing agencies. These agencies are aware of the quality standards of the clients and in most cases, are even recommended by the U.S. importers. Different U.S. importers require that the necessary testing procedures be conducted at different times during production. The majority of the exporters usually conduct a visual inspection and detect problems during various stages of production and check every yard of fabric or every piece of garment for defects. The study indicated that 91% of the organizations maintain records of the inspection and try to improve the respective standards. Inspection records are analyzed by the organization's quality controllers usually after every consignment. Analyzing the quality constantly will help the exporter in identifying the issue and to develop a plan accordingly. Large organizations consistently analyze the quality at different stages.

In conclusion, the Indian textiles and apparel export organizations are set up in a similar fashion. In most cases, the decisions are made by the head of the organizations. Indian textiles and apparel export organizations are moving towards using some of the latest technologies for manufacture of woven and knit textile. Indian exporters have also started investing in some of the finishing equipment that finish textiles to meet the standards and specifications required by the U.S. importers. Obtaining the necessary technology will solve a few problems, such as preferring to contract fabric production to independent weavers, avoiding expensive maintenance of manual looms to weave woven and knits, and avoiding labor problems which result from the inability to employ enough weavers. Weavers usually work at home since they receive orders sporadically. They are therefore reluctant to work in industries. This poses problems in terms of the exporter's control over production. In most cases, the majority of the specialized functions such as embroidery, button attachment, and the finishing process is contracted outside. It is important that U.S. importers understand the current organizational structure and the process involved in the Indian unorganized power loom sector. Another important aspect for the U.S. buyers to understand is the restriction of quotas by the U.S. government on the Indian government. The Indian government allocates the given quotas among the Indian exporters based on criteria such as the past performance, etc. In cases where some exporters do not receive sufficient quotas or have insufficient quotas, the exporter usually, instead of declining the order, buys the quotas from other exporters at a certain price, and then charges the clients for this added expense. This quota price is usually included in garment costing by the Indian exporter. Otherwise, the Indian exporters tend to compensate for a lower quality material than the specified quality. It is important for the U.S. clients to be aware of the quota availabilities before an order is being placed. Communication becomes a critical factor in exchanging the necessary information. It is also significant that the majority of the Indian textiles and apparel export organizations recruit corporate employees with a bachelors degree in Education or Science from the U.S. so that there will be less of a problem in communicating, interpreting and translating the information received in English from the U.S. to the local weavers or garment production employees.

All exporters confirm orders and communicate the necessary production information through facsimiles. The facsimile confirmation will be followed by a production package delivered by private courier service or by postal service. The production package will contain all necessary detailed production information. To communicate order details to the production centers, the exporter either sends the information by courier services or arranges to deliver the package personally, depending on the location. In the majority of cases, there are supervisors to check production quality while on production. Any change to the production is directed only through the head of the organization, who in turn conveys the message to the merchandisers. This information is sent to the respective production heads or supervisors of the department. All exporters execute laboratory testing procedures. Different exporters conduct different laboratory testing or visual checking at different stages of production based on the instructions from their clients.

Understanding the Indian textiles and apparel export organizational structure, the communication practices, and the quality control practices of Indian textiles and apparel export organizations will help the U.S. importer develop standards and specifications that are appropriate for the Indian export organization. Understanding and knowing textiles and apparel production capabilities will help U.S. importers in giving standards and specifications that are practical in the Indian textiles and apparel export environment.

Recommendations

The following recommendations for the future are made:

1. The textile export sector can be divided into the power loom sector and the mill made sector. The power loom sector uses yarns sourced from spinning companies and uses older power looms including fly shuttle, rapier and airjet. The mill made sector is vertically integrated for quality control related to yarn production, fabric production and finishing. Equipment is automatic and

computerized. By studying the power loom sector and the mill made sector individually, the advantages and the disadvantages of either sector can also be evaluated.

2. The operational practices of the weavers of Southern India can be studied as part of a cottage industry and entrepreneurial study. Studying the Indian cottage industry would be beneficial to new developments. It would also be interesting to compare it with other cottage industries from other countries. Evaluations based on the amount of support that cottage industries receive from the government can be evaluated.

3. In order to study the U.S. importer's perspective on Indian textiles and apparel export products, a study could be conducted using U.S. importers dealing with Indian textiles and apparel directly as samples. This study could generate information to the Indian textiles and apparel export sector in terms of standards and specification expectations from U.S. clients.

4. A study on quota restrictions and its consequences for the Indian textiles and apparel exporter would be beneficial in understanding the political restrictions on importing from India.

The future research recommendations would provide insight into some of the important aspects that have to be understood regarding the Indian textiles and apparel export organizations. This research would not only help Indian textiles and apparel organizations in conducting problem free business with the U.S. but would also help students in understanding the international aspects of doing business with India.

References

Amsa, P. (1986, May). Organizational culture and work group behavior: An empirical study. Journal of Management Studies, 23(3), 347-362.

Apparel Quality Committee. (1985). Elements of an apparel quality control program, 1-46, Arlington, VA: American Apparel Manufacturers Association. The Apparel Quality Association.

Bearden, O. W., Netemeyer, G. R., & Mobley, M. F. (1993). Handbook of marketing scales: Multi-item measures for marketing and consumer behavior. Newbury Park, CA: Sage.

Birkland, C. (1994). Effective communication. Fleet Equipment, 20(2), 34-38.

Bose, M. (1989, April). Stars of India. Business London, pp. 96-100

Casse, P. (1981). Training for the cross-cultural mind: A handbook for cross-cultural trainers and consultants. Washington, DC: Society for Intercultural Education, Training and Research.

Chandra, D., & Somaiya, D. K. (1991). Just-in-time in India. Production and Inventory Management, 11(7), 30-32.

Exporters' Encyclopedia. (1992). Indian Exporters, pp.268-272. India: Government of India.

Gilmore, H. L. (1994). Product conformance test: Quality progress. New York, NY: Macmillan Publishing Company.

Glock, R. E., & Kunz, G. I. (1995). Apparel manufacturing: Sewn product analysis. Englewood Cliffs,.NJ: Merrill.

Greeno, J. L. (1994). Corporate environmental excellence and stewardship: Five critical tasks of top management. Total Quality Environmental Management, 3(4), 479-499.

Holloway, N., & Denton, D. (1994). All the rage. Far Eastern Economic Review, 157(38), 82.

Indo -American Chamber of Commerce. (1987, May). Business opportunities. India

Iyer, S.C. (1991). Problems of management development in the Indian subcontinent. Journal of Management Development, 10(7), 14-21.

Joshi, K., & Sauter, V.L. (1991). The opportunities and constraints affecting an informatics policy: The India experience. Information and Management, 20(5), 313-322.

Khan, A.Q., & Talha, M. (1994). Should India go for technology transfer. Journal of International Marketing and Marketing Research, 19(1), 13-16.

Kotler, P. (1984). Marketing Management: analysis, planning, and control. Englewood Cliffs, NJ: Prentice-Hall

McDonald, H. (1994, March 17). Made to order. Far Eastern Economic Review, pp.50-52.

McVey, D. (1993). Getting a grip on quality control program. Apparel Industry Magazine, pp. 1-46.

McCoullough, S.J., & Morris, A. M. (1980). Development of a model for quality grading of textiles products. Home Economics Research Journal, 9(2), 118-123.

Motwani, J. G., Mahmoud, E., & Rice, G. (1994). Quality practices of Indian organizations: An empirical analysis. International Journal of Quality and Reliability Management, 11 (1), 38-52.

Motwani, J. G. (1993). Quality practices of a developing country: The case of India. International Journal of Management, 10(4), 452-463.

Peters, J., & Waterman, H. R. (1982). In search of excellence: Lessons from America's best run companies. New York, NY: Harper and Row.

Plachy, J. R., & Plachy, J. S. (1988). Performance Management: Getting results from your performance planning and appraisal system. New York, NY Publishers: American Management Association.

Rabolt, J. N., Bothwell, K., Forney, J. C., & Barry, M. (1988). Quality control in overseas apparel manufacturing. Journal of Consumer Studies and Home Economics, 12, 389-397.

Rao, V.T. (1985, June). Total Quality: Commitment to excellence. Bobbin, 40-51.

Sharma, S., Neteymer, R. G., & and Mahajan, V. (1990). In Search of excellence revisited: An empirical evaluation of Peters and Waterman's attributes of excellence. In W. O. Bearden & A. Parasuraman (Eds.). (pp. 322-328). Chicago IL: American Marketing Association.

Solinger, J. (1988). Analysis, principles and practices. Apparel manufacturing handbook (2nd ed.). Columbia, S.C: Bobbin Media Corp.

Stamper, A. A., Sharp, S. H., & Donell, L. B. (1986). Evaluating apparel quality. New York, NY: Fairchild.

Terrence, S. C. (1988). Quick response keeps home products domestic. Bobbin, 30(3), 52-56.

The State Trading Corporation of India Ltd. (1989-1990). Annual Report. New Delhi, India.

Touliatos, J., & Compton, N. (1988). Research methods in human ecology/home economics (1st ed.). Ames, Iowa: Iowa State University Press.

Tribus, M. P. E. (1992). Quality First: Selected papers on quality and productivity improvement. Virginia : National Institute of Engineering.

Vendor-Vendee Technical Committee of the American Society for Quality Control. (1985).

How to establish effective quality control for the small supplier. Milwaukee, WI: The Society

Walton, M. (1986). The Deming management method. New York, NY: Putnam.

APPENDIXES

APPENDIX A

DATA COLLECTION QUESTIONNAIRE FOR THE INDIAN TEXTILE AND APPAREL EXPORT ORGANIZATIONS

FACE TO FACE INTERVIEW QUESTIONS

I. Types of Indian textiles and apparel export organizations

1. **Describe the company ownership**

   1) sole proprietorship

   2) partnership

   3) others (please specify)_____

2. **What kind of system does your organization follow? (in terms of)**

   1) centralized

   2) decentralized

   3) other (please specify)_____

3. **How many years has your organization been in the textiles and apparel export business?**

   1) less than five years

   2) between five years and 10 years

   3) between 10 years and 15 years

   4) between 15 years and 20 years

   5) more than 20 years

4. **What was your background for starting this business?**

   1) education

   2) previous work experience

   3) family

   4) others(please specify)_____

5. **Does your organization have subsidiaries?**

1) Yes

2) No

6. **Do you use outside contractors to manufacture your orders?**

1) Yes (if yes please answer questions 7-12)

2) No (skip questions 7-12)

7. **For what type of work do you use outside contractors?**

1) embroidery

2) button attachment

3) complete apparel production only

4) fabric production only

5) fabrics and apparel production

6) others(please specify)_____

8. **How often do you contract outside?**

1) 100 percent of the time

2) 75 percent of the time

3) 50 percent of the time

4) 25 percent of the time

5) others percentage of times_____

9. **Where are the majority of your contractors located?**

1) Within the city where your corporate office is situated

2) outside the city where your corporate office is situated

10. **Do you prefer to contract outside your town or within the same town? Please give reasons**

_____

5. **Does your organization have subsidiaries?**

1) Yes

2) No

6. **Do you use outside contractors to manufacture your orders?**

1) Yes (if yes please answer questions 7-12)

2) No (skip questions 7-12)

7. **For what type of work do you use outside contractors?**

1) embroidery

2) button attachment

3) complete apparel production only

4) fabric production only

5) fabrics and apparel production

6) others(please specify)_____

8. **How often do you contract outside?**

1) 100 percent of the time

2) 75 percent of the time

3) 50 percent of the time

4) 25 percent of the time

5) others percentage of times_____

9. **Where are the majority of your contractors located?**

1) Within the city where your corporate office is situated

2) outside the city where your corporate office is situated

10. **Do you prefer to contract outside your town or within the same town? Please give reasons**

_____

11. Do you know if your contractors sub contract ?

1) Yes (please answer question 12)

2) No (skip question 12)

12. Do you know if your contractors subcontract your orders?

1) Yes

2) No

13. a. What are the different communication technologies that your organization maintains?
b. Does your communication technology break down?
c. How frequently does your communication technology breakdown?

Technologies			Break	Down	Frequently
	Yes	No	Yes	No	
Typewriter					
Facsimile machine					
Computers					
Telephone					
Xerox machine					

14. a. **What are the different production technologies that your organization maintains?**

b. **Does your production technology breakdown?**

c. **How frequently does your production technologies break down?**

Technologies			Break	Down	Frequently
	Yes	No	Yes	No	
Textiles					
power looms to weave woven fabrics					
hand loom to weave woven fabrics					
power looms for knit fabrics					
Apparel					
sewing machines(power generated					
embroidery machines					
computerized cutters					
computerized markers					
treadle sewing machines					

15. **Does your company posses the necessary finishing equipment?**

1) Yes(please specify the equipment's)_____

2) No

16. **How many employees are employed? (based on)**

1) Full time corporate employees_____

2) Part-time corporate employees_____

3) Full time production employees_____

4) Part time production employees_____

17. **Do you own any of the following?**

1) dyeing unit

2) sewing unit

3) production unit

(if yes for all of the above skip question-18)

18. **If you do not own dyeing, sewing or weaving units, how do you handle these jobs from your clients?**

1) contract those jobs outside

2) do not accept those orders

19. **Apart from textiles and apparel do you export any other product?**

1) Yes (please answer question 20)

2) No (skip 20)

20. **What are the other products that you export?**

1) leather apparel

2) belts

3) hats

4) laces

5) artificial flowers

6) buttons

7) jewelry

8) other (please specify) _____

21. **Is your manufacturing unit located away from your corporate office?**

1) Yes

2) No

22. **What is the number of corporate working days in a week?**

1) five days a week

2) five and a half days a week

3) six days a week

4) seven days a week

23. **What are the number of days in a week do your production employees work?**

1) five days a week

2) five and a half days a week

3) six days a week

4) seven days a week

24. **Do you feel the time difference between India and U.S. creates communication lag?**

1) Yes

2) No

25. **Do you do laboratory testing procedures?**

1) Yes (please answer question 26)

2) No

26. **Where do you conduct all the laboratory testing procedures?**

1) in your company

2) in outside testing labs

3) others_____

27. **Describe your corporate structure in relation to production standards and specifications.**

28. **What are the criteria used to hire corporate employees?**

29. **What are the criteria used to hire production employees?**

II. Following questions refers to the communication process involved in communicating the standards and specifications.

II-A. Communication between U.S. importer and Indian exporter

30. **Which is the most common form of communication that your client uses to place orders with you?**

    1) oral (please answer question 31)

    2) written (please answer questions 38)

    3) others such as samples (please answer questions from 46 to 51)

31. **How does your client communicate order descriptions orally?**

    1) telephone (please answer questions 32 to 35)

    2) face to face (please answer questions from 36 to 37)

32. **How does your client describe the designs to you?**

1) in reference with an earlier design

2) referring to certain names like jumpers, style numbers from catalogs

3) referring to designs from other exporters

4) others please specify_____

33. **Please specify problems encountered by you while your clients place orders through telephone?**

1) misinterpreting jargons

2) miss hearing some words

3) unable to hear clearly

4) cannot understand the accent

5) very expensive to correspond through telephone (from India)

34 **Are you restricted from calling your clients due to the difference in time?**

1) Yes

2) No

35. **Have you encountered situations where you were unable to create a clear image of your problem with the orders, to your client through telephone?**

_____

36. **How often does your client from U.S. visit your organization for placing orders?**

1) only for first few orders

2) for all the orders

3) during complicated orders

4) during large volume orders

5) during small volume orders

6).others (please specify) _____

37. **How does your client describe the design in a face to face type of communication?**

1) explains with the parts of the garment

2) explains the detailed sewing instructions with a sample of the stitches

3) others_____

38. **Please describe the types of written communication used by your clients to communicate the orders to you.**

1) through faxes (please answer questions-39 to 43)

2) through telexes (please answer question from 44)

3) others please specify_____

39. **Does your facsimile messages print clear and readable format?**

1) Yes

2) No

40. **Do you often encounter problems with the facsimile machines?**

1) Yes (please answer question-41)

2) No

41. **What kind of problems do you encounter with the facsimile machines?**

1) sharing the same number for the telephone and the facsimile (busy line)

2) sometimes information's are not clear

3) very expensive to send replies to the clients (from India).

4) others please specify_____

42. **What kind of information related to production do you receive from your clients through facsimile?**

1) graded specification sheet

2) sketch of the design with a repeat

3) sewing details

4) pattern description

5) trim instructions

6) naming color standards

43. **Do your clients facsimile a pictorial presentation of the design with details of weaving and sewing described by symbol?.**

---

44. **What are the kinds of information's that you receive through telexes?**

1) graded specification sheet

2) sewing details

3) pattern description

5) trim instructions

6) naming color standards

45. **Which kind of communication technology do you think is faster?**

1) telex

2) facsimile

46. **How do you receive your orders by mailing services?**

1) governmental postal services

2) large international courier services such as federal express

3) small international courier services

47. **What are the kinds and forms of instructions presented to you by your clients through mail?**

1) garment samples

2) fabric samples with a repeat

3) sketches

4) photos

5) yarn color standards

6) color charts

7) sample of wash care instructions

8) paper patterns

9) testing methods to be adopted

10) sample of trims

11) others please specify_____

48 **On a scale of 1 to 10, what do you perceive to be the best form of communication?**

1) oral ____

2) written ____

3) other ____

49. **What problems do you encounter due to difference in terminology between U.S. English and Indian English?**

_____

II-B. Communication within the Indian textiles and apparel export organization

The following questions refer to the methods of communication used in production within the organization, including communications with contractors for production. Please answer these questions based on how you would communicate the production standards and specifications to the production employees.

50. **When the orders are distributed to the production centers what method of communication do you follow?**

1) oral (please answer questions 51 & 56)

2) written (please answer questions from 57)

3) others such as samples (please answer questions from 59 to 62)

51. **What form of communication do you follow to communicate orally?**

1) telephone (please answer question 52 to 54)

2) face to face (please answer question 55)

52. **What kinds of descriptions do your corporate employees communicate to the production centers by telephone?**

1) assembly process

2) design of the garment

3) sewing details

4) trims instructions

5) specification measurements

6) others, please specify_____

53. **Have there been problems in productions due to misinterpretations of the instructions by the production employees while trying to communicate through telephone?**

1) Yes (please answer questions 54)

2) No (skip question 54)

54 **What are the problems in production that have been encountered by your organization due to misinterpretation through telephone?**

1) assembly process

2) design of the garment

3) sewing details

4) trims instructions

5) specification measurements

6) others, please specify_____

55. **In a face to face contact with the production employees how does your corporate employee communicate the instructions?**

1) demonstrating the sample

2) describing the assembly process

3) describing the parts with a sample piece

4) describing the sewing details with the samples

5) by sketching the design

6) others, please specify _____

56. Which form of oral communication do you feel is beneficial to the organization resulting in the production of quality products?

1) telephone

2) face to face

57. How do your corporate employees communicate production instructions to the production employees in a written form?

1) through faxes (please answer question 58)

2) through telexes (skip question 58, please answer question 59)

3) others, please specify_____

58. What are the kinds of instructions that your corporate employees send through facsimile services?

1) graded specification sheet

2) sketch of the design with a repeat

3) sewing details

4) pattern description

5) trim instructions

6) naming color standards

59. What are the kinds of instructions that are sent through telex services?

1) graded specification sheet

2) sewing details

3) pattern description

4) trim instructions

5) naming color standards

60. **Do your corporate employees interpret and write English to a local language for better understanding of the production employees?**

1) Yes (please answer questions-61)

2) No (skip question 61)

61. **What are the problems that you face while trying to communicate the instructions in the local language?**

1) terminology

2) style names

3) sewing names

4) wash care instructions

5) color standards

6) others, please specify_____

62. **How often does your organization send instructions through mail to the production centers?**

1) 100 percent of the time

2) 75 percent of the time

3) 50 percent of the time

4) 25 percent of the time

63. **What are the kinds of instructions you send to the production center through mail service?**

1) garment samples

2) fabric samples with a repeat

3) sketches

4) photos

5) yarn color standards

6) color charts

7) sample of wash care instructions

8) paper patterns

9) testing methods to be adopted

10) sample of trims

11) others, please specify----------

64. **How do your corporate employees present instructions to your production employees through mail services?**

1) handing over the complete package sent by the client.

2) adding employees add more details to the swatch cards

3) placing the instructions on the company swatch cards before mailing

4) others, please specify_____

65. **How long does it take for the packages to reach your production center?**

III. The following questions refer to the quality control procedures adopted by the Indian export organizations for inspection.

III-A. At what stages does the inspection process take place

66. **What are the different kinds of laboratory testing done at the sample stage?**

1) durability

2) color fastness

3) crocking test

4) wash care

5) shrinkage

67. **What are the different kinds of laboratory testing done at production stage?.**

1) durability

2) color fastness

3) crocking test

4) wash care

5) shrinkage

68. **Do you do pre production inspection and production inspection for textiles and apparel?**

1) Yes (if yes please answer question 68a)

2) No

a) Please specify the laboratory testing standards done for production?

1) ASTM standards

2) AATCC standards

3) others

69. **Have you encountered any of the following defects?**

1) fabric defects

2) poor construction

3) poor appearance

4) late deliveries

70. **Will your contractors accept the materials if supplied by you?**

1) Yes

2) No

71. **Do your production employees want corporate employees to be present during production for clarification?**

1) Yes

2) No (if no, why not)

72. **At what stage do your supervisors detect and rectify the problem?**

1) at various stages of production

2) final stage of production

3) after the completion.

73. **What kind of checking process do you follow?**

1) random checking process

2) check every piece

74. **Which process to you feel is most beneficial?**

75. **Are your quality inspectors aware of the different standards of your different clients?**

III-B. Inspection records

76. Have you been maintaining a record of the rejections or defects in the goods?

1) Yes (please answer question-77)

2) No

77. Do you analyze these problems?

1) Yes (please answer 85 & 86)

2) No

78. Who analyzes the problem?

1) outside agencies

2) analyst within the organization

3) students

4) others, please specify_____

79. How often do you do the analysis?

1) once a year

2) every six months

3) others_____

III-C. Who does the inspection

80. Who does the inspection of the product?

1) have skilled quality checkers

2) employ outside independent inspection

3) employ Export Inspection Council for production inspection

81. **When employing outside an agency for inspection how do you communicate your client's standards.?**

_____

IV. Quality of the product in meeting the standards of The U.S. importers

82. **Have you been successful in satisfying your buyers instructions with all your orders/production so far?**

1) Yes

2) No

3) Other, please specify _____

83. **Have you received any repeat orders?**

1) Yes

2) No

84. **Do all your clients have a respective quality standards for all their products ordered from you?**

1) Yes

2) No

85. **What are the quality improvements that your clients often recommend while placing orders with you?**

1) fabric substitutions

2) time delays

3) sewing problems

4) wrong trims

5) unclean product

6) not satisfied with the finishing process

7) others, please specify _____

86. Are your clients convinced about the product standards and specifications with your sample goods?.

1) Yes (please answer question 87)

2) No (skip question 87)

3) Other _____

87. Do your sample standards match your production standards?

1) Yes

2) No

3) Other, please specify ____

88. Are you able to execute orders in time as requested by your client?

1) 100 percent of the time

2) 75 percent of the time

3) 50 percent of the time

4) 25 percent of the time

5) others, times please specify----------

89. Whenever you contract outside are your clients able to distinguish the difference between the quality manufactured by your unit and the quality of product produced by your contractors?

1) Yes

2) No

90. Has certain change in trims created any serious difference in the garment structure?

1) Yes

2) No

91. Do your clients place orders based on how well you execute the sample?

1) Yes

2) No

92. If the samples are rejected do your clients still place production orders with you?

1) Yes

2) No

93. At any time have your samples been accepted but the production goods rejected by your clients?

1) Yes (please answer question 94)

2) No

94. Can you give the quantity rejected

_____

95. Has the time factor ever affected the quality of your product?

1) Yes

2) No

96. What kind of quality problems do you face due to shortage of time?

_____

97. Have your goods ever reached the United States and then been rejected by your clients?

1).Yes (please specify the quantity) _____

2).No

98. Have the quantity of orders increased over years?

1) Yes

2) No

99. Were you able to retain the number of clients from the start of the business to present?.

1) Yes

2) No

100. Have your old clients from the start of the business?

1) increased ordering goods from you?

2) decreased ordering goods -please give reasons?

101. Do your new clients order

1) small quantity?

2) large quantity?

102. How long have you had your new clients?

1) less than six months

2) six months

3) for one year

4) for more than a year (please specify the number of years)_____

103. How many clients totally do you have now?

_____

104. If there has been a decrease in the number of clients please give reasons?

1) problems with durability of the product

2) problems with color fastness

3) poor sewing

4) misinterpretation of design

5) lack of technology and equipment

6) late deliveries

7) cost

8) time schedules

9) others, please specify_____

105. **Would you like to share any other information that will help American importers understand Indian production problems or concerns?**

APPENDIX B

KIND OF INFORMATION RELATED TO PRODUCTION SENT BY U.S. IMPORTER TO THE INDIAN TEXTILE AND APPAREL EXPORT ORGANIZATION BY FACSIMILE

Appendix B

Kind of information related to production sent by U.S. importer to the Indian textiles and apparel export organization by facsimile

Information	n	%
Sketch of the design	1	3
Graded specification sheet, sketch of the design with a repeat, sewing details, pattern description, trim instructions, and naming color standards from a book	11	32
Graded specification sheet, sketch of the design with a repeat, sewing details, pattern description, naming color standards from a book	2	6
Graded specification sheet, sketch of the design, sewing details, trim instructions, naming color standards from a book	5	15
Graded specification sheet, sketch of the design with a repeat, sewing details, trim instructions	3	9
Graded specification sheet sketch of the design with a repeat sewing detail, naming color standards from a book	1	3
Graded specification sheet, sketch of the design with a repeat, pattern description, naming color standards from a book	1	3
Graded specification sheet, sketch of the design with a repeat, sewing details, pattern description, trim instructions, and naming color standards from a book, fit approvals, changes	2	6
Graded specification sheet, sketch of the design, sewing details, trim instructions, naming color standards from a book, testing methods, L/C copies	1	3
Graded specification sheet, sketch of the design with a repeat, sewing details, pattern description, trim instructions Price, delivery, design reference, design description	1	3
Graded specification sheet, sketch of the design with a repeat, sewing details, pattern description, trim instructions, and naming color standards from a book, delivery, price, categories, order quantity, payments, packing instructions	2	6

Appendix B (continued)

Kind of information related to production sent by U.S. importer to the Indian textiles and apparel export organization by facsimile

Information	n	%
Graded specification sheet, sewing details, pattern description, trim instructions, and naming color standards from a book, packing instructions	1	3
Graded specification sheet	1	3

N= 35 Indian textiles and apparel export organizations

APPENDIX C

PRODUCTION INFORMATION SENT BY U.S.

IMPORTER TO THE INDIAN TEXTILE AND APPAREL

EXPORT ORGANIZATION BY MAIL / COURIER SERVICE

Appendix C (continued)

Production information sent by U.S. importer to the Indian textiles and apparel export organizations by mail / courier service

Information	n	%
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions paper patterns, testing methods to be adopted, sample of trims	11	31
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions paper patterns, testing methods to be adopted, sample of trims, packing instructions	4	11
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions sample of trims, packing instructions	3	9
Garment samples, fabric sample with a repeat, sketches, sample of wash care instructions, paper patterns, testing methods to be adopted, sample of trims	1	3
Garment samples, sketches, yarn color standards, color shirts, sample of wash care instructions, paper pattern, sample of trims	1	3
Garment samples, fabric sample with a repeat, photos, yarn color standards ,color charts, sample of wash care instructions, paper patterns, sample of trims fit approvals with comments	1	3
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts	1	3
Garment samples, sketches	1	3
Fabric samples with a repeat, photos, yarn color standards, color chart, weave specification	1	3
Garment samples, fabric sample with a repeat, sketches, yarn color standards, sample of wash care instructions, testing methods to be adopted	1	3
Garment samples, fabric sample with a repeat, sketches, yarn color standards, sample of wash care instructions, paper patterns, packing instructions	1	3

Appendix C (continued)

Production information sent by U.S. importer to the Indian textiles and apparel export organization by mail / courier service

Information	n	%
Fabric sample with a repeat	1	3
Fabric sample with a repeat, sketches, photos, yarn color standards, color chart, testing methods to be adopted	1	3
Garment samples, fabric sample with a repeat, sketches, yarn color standards, sample of wash care instructions, paper pattern, testing methods to be adopted, sample of trims, packing instructions	1	3
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions, testing methods to be adopted, sample of trims	1	3
Fabric sample with a repeat, photos	1	3
Garment samples, fabric sample with a repeat, sketches, photos	1	3
Garment samples, fabric sample with a repeat, sketches yarn color standards, color charts, sample of wash care instructions, testing methods to be adopted, sample of trims	1	3
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, color charts, sample of trims	1	3
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, sample of wash care instructions, paper pattern, sample of trims, labels, packing instructions	1	3
Garment samples, fabric sample with a repeat, sketches, photos, yarn color standards, sample of wash care instructions, testing methods to be adopted, sample of trims	1	3

N= 35 Indian textiles and apparel export organizations

APPENDIX D

PRODUCTION INFORMATION SENT BY INDIAN ORGANIZATIONS TO THE PRODUCTION CENTER THROUGH MAIL OR COURIER

Appendix D

Production information sent by Indian organizations to the production center through mail / courier services

Information	n	%
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample wash care instructions, paper patterns, testing methods to be adopted, sample of trims	11	32
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample wash care instructions, paper patterns, testing methods to be adopted, sample of trims, specification measurement	4	12
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample wash care instructions, paper patterns, testing methods to be adopted	1	3
Garment samples, fabric samples with a repeat, yarn color standards, paper patterns, sample of trims, specification measurement	1	3
Garment samples, fabric samples with a repeat, sample of wash care instructions, testing methods to be adopted, sample of trims	1	3
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions, paper patterns, sample of trims	1	3
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, paper patterns	1	3
Fabric samples with a repeat sketches, photos, yarn color standards, color charts	1	3
Fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample of wash care instructions, testing methods to be adopted	1	3
Fabric samples with a repeat, photos, yarn color standards, specification, tolerance test	1	3
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample wash care instructions, paper patterns, sample of trims	2	6

Appendix D (continued)

Production information sent by Indian organizations to the production center through mail / courier services

Information	n	%
Garment samples, fabric samples with a repeat, sketches, photos, yarn color standards, color charts, sample wash care instructions testing methods to be adopted, sample of trims	1	3
Garment samples, fabric samples with a repeat, photos, yarn color standards, sample of wash care instructions, testing methods to be adopted, sample of trims	1	3
Garment samples, fabric samples with a repeat, sketches, yarn color standards, color charts, sample wash care instructions testing methods to be adopted	1	3

N= 35 Indian textiles and apparel export organizations

APPENDIX E

PRODUCTION STAGE LABORATORY TESTING PROCEDURES USED BY THE INDIAN TEXTILE AND APPAREL EXPORT ORGANIZATIONS

Appendix E

Production stage laboratory testing procedures used by the Indian textiles and apparel export organizations

Testing	n	%
Durability, color fastness, crocking test wash care, shrinkage	11	41
Color fastness, shrinkage	1	4
Color fastness, crocking test wash care, shrinkage, grams per square meter, azo dye test	1	4
Color fastness	1	4
Durability, color fastness, crocking test wash care, shrinkage, strength, density	3	11
Durability, color fastness, crocking, shrinkage	2	7
Color fastness, shrinkage, yarn count	1	14
Color fastness, shrinkage, count and construction	1	4
Color fastness, crocking test, wash care, shrinkage	1	4
Durability, color fastness, crocking test, wash care, shrinkage, count/twist, specification, weight of the fabric, dimensional stability, pilling, tolerance test.	1	4
Color fastness, wash care, shrinkage, specification tolerance test2	7	
Color fastness, crocking test, wash care, shrinkage, grams per square meter	1	4

N= 27 Indian textiles and apparel organizations. Some organizations used more than one test

APPENDIX F

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD

HUMAN SUBJECTS REVIEW

IRB # HE-95-031

By

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH
(PURSUANT TO 45 CFR 46)
OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

Title of project: Analysing India's textiles and apparel export organizations and their impact on quality of product produced for U.S.
Please attach copy of project proposal.

I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

PRINCIPAL INVESTIGATOR: Dr. Cheryl Farr (Cheryl Farr)
Typed Name / **Signature**

Design, Housing & Merchandising — Human Environmental Sciences
Department — **College**

431 Human Environmental Sciences — 744-5035
Campus Address — **Telephone**

TYPE OF REVIEW REQUESTED: (Choices are Exempt, Expedited or Full Board)
EXEMPT

1. **Briefly describe the background and purpose of the research.**

India has great potentials for export of textiles and apparel to the united states. In order to conduct business in India it becomes necessary for the U.S. to understand the Indian textile and apparel organizational set up , communication process and the effect of these criteria's on the quality of the product. This will help the U.S. buyers in their quality expectations from India. The purpose of this research is to understand the different types of Indian textiles and apparel export organizations, the communication process between the Indian exporter and the U.S. importer, within the Indian textiles and export organization, and their influence on the quality of the product in meeting the standards of the U.S. importer.

2. **Who will be the subjects in this study? How will they be solicited or contacted? Subjects must be informed about the nature of what is involved as a participant, including particularly a description of anything they might consider to be unpleasant or a risk. Please provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of the written solicitation and/or an outline of the oral solicitation.**

The subjects will be from southern Indian textiles and apparel production centers (Coimbatore, Madras, Salem, Tirupur). All subjects will be exporters authorized by the Indian Export Promotion council. After arriving in India telephone contact will be made with the subjects briefly informing them of the research and the interview process. An appointment will be arranged for the interview. A purposive sample will be used to select at least thirty-five exporters. Each exporter will be informed that participation is voluntary. A letter informing subjects of their voluntary participation and security for information will be given to each subject at the beginning of the interview A copy is appended.

3. **Briefly describe each condition or manipulation to be included within the study.**

No manipulation will be done in the interview.

4. **What measures or observations will be taken in the study? Include a copy of any questionnaires, tests, or other written instruments that will be used.**

The following information from the Indian textiles and apparel export organization will be gathered through interview process. A copy of the interview questions is appended

1. Demographics
2. Product lines
3. Indian organizational set up
4. Contracting and subcontracting practices
5. Inspection practices
6. Communication practices within the Indian export organization
7. Communication practices between the U.S. importer and the Indian exporters
8. Quality of the product meeting the U.S. importers expectations

2. **Who will be the subjects in this study? How will they be solicited or contacted? Subjects must be informed about the nature of what is involved as a participant, including particularly a description of anything they might consider to be unpleasant or a risk. Please provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of the written solicitation and/or an outline of the oral solicitation.**

The subjects will be from southern Indian textiles and apparel production centers (Coimbatore, Madras, Salem, Tirupur). All subjects will be exporters authorized by the Indian Export Promotion council. After arriving in India telephone contact will be made with the subjects briefly informing them of the research and the interview process. An appointment will be arranged for the interview. A purposive sample will be used to select at least thirty-five exporters. Each exporter will be informed that participation is voluntary. A letter informing subjects of their voluntary participation and security for information will be given to each subject at the beginning of the interview A copy is appended.

3. **Briefly describe each condition or manipulation to be included within the study.**

No manipulation will be done in the interview.

4. **What measures or observations will be taken in the study? Include a copy of any questionnaires, tests, or other written instruments that will be used.**

The following information from the Indian textiles and apparel export organization will be gathered through interview process. A copy of the interview questions is appended

1. Demographics
2. Product lines
3. Indian organizational set up
4. Contracting and subcontracting practices
5. Inspection practices
6. Communication practices within the Indian export organization
7. Communication practices between the U.S. importer and the Indian exporters
8. Quality of the product meeting the U.S. importers expectations

VITA

Srinivasa Vijaya Chari

Candidate for the Degree

of Master of Science

Thesis: INDIAN TEXTILES AND APPAREL EXPORT ORGANIZATIONAL STRUCTURE, COMMUNICATION AND QUALITY CONTROL PRACTICES.

Major Field: Design, Housing, and Merchandising

Biographical information:

Personal Data: Born in Madras, India, September 5, 1969, the daughter of Tirupathi Komandur Srinivasa Chari and Vedavalli Chari.

Education: Completed High-school at Padma Seshadri Bala Bhavan Junior College, Madras, India, in May 1986; received a Bachelor's degree of Home Science in Interior Design and Environment from the University of Madras in 1989; received Master's degree of Home Science in Textiles and Clothing from the University of Madras in 1991; completed the requirements for the Master of Science degree in Design, Housing, and Merchandising at Oklahoma State University, Stillwater, Oklahoma, in December 1997.

Professional Experience: Designer and coordinator for Starr Capricorn Export Organization, Madras, India, April 1991 to December 1991; Quality controller for TT industries limited (export division), Madras, India, March 1992 to November 1992; Quality Controller for Beebas Creations Inc., Madras, India, December 1992 to May 1993; Research Assistant, Department Of Design Housing and Merchandising, Oklahoma State University, August 1993 to May 1995; Merchandise team leader for Target Stores, August 1995 to September 1996; Executive Team Leader Guest Service for Target Stores, September 1996-present.