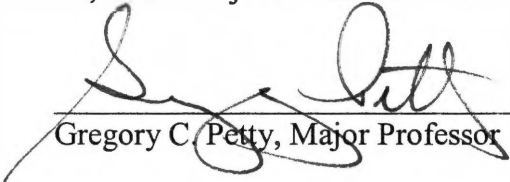


To the Graduate Council:

I am submitting herewith a thesis written by Johnny Fontan entitled "The Effect of Self-Directed Work Teams on Work Ethic." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Human Resource Development.



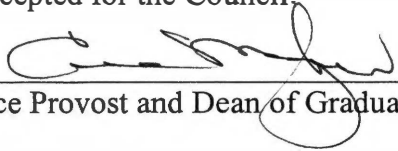
Gregory C. Petty, Major Professor

We have read this thesis
and recommend its acceptance:





Accepted for the Council:



Vice Provost and Dean of Graduate Studies

The Effect of Self-Directed Work Teams on Work Ethic

A Thesis

Presented for the

Master of

Science Degree

The University of Tennessee, Knoxville

Johnny Fontan

December 2002

Thesis
2002
. F66

DEDICATION

This research project is dedicated to my mother and father for their love, support, and encouragement. I also dedicate this to my many friends, teachers, and mentors for your patience, understanding and wisdom.

ACKNOWLEDGEMENTS

I would like to begin by thanking Dr. Gregory C. Petty for being my introduction to Human Resource Development and for providing me with the tools and direction to complete the HRD program. I would like to take the opportunity to thank my other two committee members Dr. Debbie L. Mackey and Dr. Doo Lim for their instruction and support. I have learned a great deal from each of you in class and I am honored you agreed to sit on my thesis committee.

I would also like to thank everyone at Kimberly-Clark for their support. I would personally like to thank Bill Rowe and Stephen King for allowing me to conduct my research at Kimberly-Clark Loudon Mill and Neenah Nonwovens. Mike Gibney, Velera Tomlinson, and Jeff Zulauf have been great mentors, supports, and sounding boards during this process. Mike Gibney provided me with my topic idea and built bridges for me to collect my data. Velera Tomlinson provided support and direction. Jeff Zulauf provided counsel and know-how. I am truly fortunate to have been apart of the HR team as an intern.

Finally, to my friends and family who have persevered with me through my educational and occupational journeys. Thank you for your unconditional love and support.

ABSTRACT

The purpose of this study was to compare work ethic between machine operators in a self-directed work team manufacturing facility and machine operators in a traditional work systems manufacturing facility based on four subscales (*dependable, cooperative, ambitious, considerate*). Secondly, the study investigated differences between machine operators in a self-directed work team manufacturing facility and machine operators in a traditional work systems manufacturing facility based on six demographic factors (age, gender, level of education, years of full-time work experience, years of experiences as a supervisor, work shift preference). The Occupational Work Ethic Inventory (OWEI) (Petty, 1991) was the sole instrument used for the study.

The machine operators of Kimberly-Clark, Loudon Mill and Kimberly-Clark, Neenah Nonwovens was used as participants in the study. A total number of 396 surveys were distributed to the machine operators. There were 252 surveys completed, which accounted for a 64% response rate.

Descriptive statistics including the mean, standard deviation, and frequencies were gathered for the demographic data to help interpret employees' work ethic scores. A uni-variate analysis of variance (UNIANOVA) and the Tukey post hoc tests were used to analyze the data from the OWEI. The UNIANOVA test divided the survey into four descriptors in order to measure the machine operators work ethic scores. Finally, descriptive statistics and the Tukey Honestly Significant Difference (HSD) post hoc test were used to analyze any differences that existed between the six demographic variables.

The major findings from the study implied (a) there are significant differences work ethic of machine operators in self-directed work team manufacturing facilities and traditional work systems manufacturing facilities. (b) there are significant differences on the *considerate* subscale of the OWEI based on age.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION.....	1
Statement of Problem.....	2
Purpose of Study.....	2
Research Objectives.....	3
Null Hypothesis	3
Rationale	4
Assumptions.....	4
Limitations	5
Delimitations.....	5
Definitions.....	5
II. REVIEW OF RELATED LITERATURE.....	9
The Rise of Industrialization and Scientific Management.....	9
Socio-Technical Systems	13
Self-Directed Work Teams	15
Characteristics of Self-Directed Work Teams.....	16
Self-Directed Work Team Research.....	18
Organizational Socialization/Assimilation and Concertive Control.....	23
Work Ethic Instruments	26
Occupational Work Ethic Inventory (OWEI).....	28
Demographic Variables and Work Related Measures	28
Summary of Review of Related Literature	29
III. METHODOLOGY.....	33
Introduction to Kimberly-Clark	33
Loudon Mill.....	33
Neenah Nonwovens Mill	35
Population	35
Instrumentation	35
Procedures.....	35
Data Analysis	36
IV. ANALYSIS OF DATA AND RESULTS	37
Demographic Characteristics	37
Instrumentation	45
Findings for Ho ₁	47
Findings for Ho ₂	48
Findings for Ho ₃	48

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	52
Introduction.....	52
Summary.....	52
Discussion.....	55
Conclusions.....	58
Recommendations.....	58
REFERENCES.....	60
APPENDIXES.....	71
Appendix A Letters of Permission.....	72
Appendix B Human Subjects Form A	75
Appendix C Occupational Work Ethic Inventory Instrument	78
Appendix D Occupational Work Ethic Inventory Subscales.....	83
VITA.....	86

LIST OF TABLES

TABLE	PAGE
1. Summary of Studies Examining Self-Directed Work Teams.....	32
2. Mean Scores and Standard Deviation Scores for Loudon and Neenah	46
3. Cronbach's Alpha for Items in Subscales	46
4. UNIANOVA Significant Differences of Work Ethic Between Machine Operators ...	49
5. Findings for Item Subscales.....	49
6. Considerate Based on Age	51

LIST OF FIGURES

FIGURE	PAGE
1. Histogram of the gender demographic data	38
2. Histogram of the age demographic data	40
3. Histogram of the level of education demographic data	41
4. Histogram of the years of full-time experience demographic data.....	42
5. Histogram of the years of experience as a supervisor demographic data	43
6. Histogram of the shift preference demographic data	44

Chapter I

Introduction

The first recorded study of self-directed work teams took place in 1951 at a British coalmine (Trist & Bamforth, 1951). This study led to the self-directed work teams concept to become central in the socio-technical systems approach to job design (Herbst, 1962; Susman, 1976; Trist 1981). In recent years, the movement towards self-directed work teams has spread to a wide variety of businesses and industries. Cotton cited a study of “476 Fortune 1000 firms found that although only 7% of the work force is organized into self-directed work teams, management at half of the companies say they will be relying on them more in the years ahead” (1993, p. 173). Self-directed work teams have been implemented within major corporations including Proctor & Gamble, TRW, General Motors, Ford Motor Company, General Mills, Federal Express, Digital Equipment, Xerox, and Volvo. Some of these companies have been so successful implementing self-directed work teams that they do not allow outside research at their facilities in fear of losing a competitive advantage (Zuboff, 1983).

There has been a great deal of research about the subject involving measures of job satisfaction (Kemp, Wall, Clegg, and Cordery, 1983), absenteeism (Trist, 1981), autonomy (Cordery, Mueller, and Smith, 1991), safety (Pasmore, Francis, and Haldeman), 1982), trust in management (Cordery, Mueller, and Smith, 1991), productivity (Pasmore, 1978), and perceptions of control (Denison, 1982). By and large, self-directed work teams have fared very well in these studies.

Characteristics of self-directed work teams include multi-functional work roles, shared responsibility, autonomous decision making and problem solving, a team focus, plentiful resources, and self-determined leadership (Orsburn, J.D., Moran, L., Musselwhite, E., Zenger, J., and Perrin, C., 1990). “The team involves all of the employees in a specific area of those working on a specific product or process” (Cummings, 1978). The self-directed work team concept allows individual employees to have more input into the production process and strives to create more ownership for each worker.

Statement of Problem

The majority of research about organizations that have implemented self-directed work teams has reported higher levels of profitability, productivity, job satisfaction, and commitment than organizations with more traditional work systems. However, there has not been a study that utilized the Occupational Work Ethic Inventory (OWEI) to compare the work ethic of machine operators in a self-directed work team plant to the work ethic of machine operators in traditional work systems plant.

Purpose of Study

The purpose of this study is to investigate the effect of self-directed work teams on the work ethic of employees in a manufacturing environment in Loudon County, TN. This study will utilize the Occupational Work Ethic Inventory (OWEI) to measure work ethic. Data will be collected at a work site that employs only self-directed work teams in the production process as well as at a work site that only makes use of conventional work

groups. The data will then be analyzed to determine if there were significant differences in level of work ethic of employees between the two production methods.

Research Objectives

For the purpose of this study, the following research objectives were developed:

1. To measure the work ethic of machine operators in a self-directed work team manufacturing facility.
2. To measure the work ethic of machine operators in a conventional work groups manufacturing facility.
3. To determine if the work ethic scores of workers in a self-directed work team manufacturing facility compare favorably to the work ethic of workers in a conventional work groups manufacturing facility.

Null Hypothesis

The following null hypothesis was developed for the purpose of this study:

Ho₁: There are no significant differences in work ethic between machine operators in the self-directed work team manufacturing facility and machine operators in the manufacturing facility that utilizes conventional work groups.

Ho₂: There are no significant differences in work ethic between all machine operators based on the demographic variables age, gender, years of full-time work experience, and level of education.

Ho₃: There is no significant interaction of work ethic between machine operators from the self-directed work team manufacturing facility and the traditional manufacturing facility by demographic variables.

Rationale

Self-directed work teams have been utilized by manufacturing companies for decades. They have become a staple for employer's who want increased employee participation and ownership of the process and lowered supervisory costs (Cotton, 1993). A number of researchers have studied the effects of how self-directed work teams effect employee work attitudes. These studies focused on such concepts as autonomy (Cordery, Mueller, and Smith, 1991), organizational commitment (Cordery, Mueller, and Smith, 1991), job satisfaction (Kemp, Wall, Clegg, and Cordery, 1983), and perceived control (Denison, 1982). Each of those studies added value to the self-directed work team concept in a manufacturing environment by focusing on different types of measurable outcomes. Managers and organizational specialists rely on such research in order to recognize the value of concepts so that they can be recognized and utilized as valid and worthwhile organizational strategies. This study of work ethic will add to that body of research in order to explore another measurable outcome of self-directed work teams in a manufacturing environment.

Assumptions

For the purposed of the study, the following assumptions were made:

1. Participants only completed the OWEI one time.
2. Participants answered the OWEI openly and honesty.
3. Participation in self-directed work teams influenced work ethic constructs as measured by the Occupational work Ethic Inventory (OWEI).

Limitations

The following limitations should be considered regarding the results of this study:

1. The characteristics of the work ethic examined in this study were limited to those included in the OWEI.
2. The results of this study were limited by the respondents' understanding of the items on the OWEI and their responses to those items.
3. The dimensions of the work ethic for this study were limited to those measured by the four OWEI subscales (*dependable, considerate, ambitious, cooperative*).
4. The results of this study are only applicable to workers employed by the entities studied in Loudon County, TN.

Delimitations

1. The results of this study are delimited by the demographic variables of this population which include age, gender, years of full time work experience, level of education, and years of supervisory experience.

Definitions

The following definitions were included in this study:

1. **Age:** Different periods of a person's life. Age consisted of (a) 19 or under, (b) 20-26, (c) 27-35, (d) 36-55, and (e) over 55.
2. **Ambitious:** A dimension in the Occupational Work Ethic Inventory (OWEI) that represents a measurement of initiative.

3. **Anticipatory Socialization:** Individuals develop impressions of specific future work environments through employment interviews and other message exchanges with organizational representatives and others familiar with the organization. (Feldman, 1981; Jablin, 1987; Van Maanen, 1976)
4. **Assimilation:** The cognitive acceptance and identification with an organization and/or group (Gibson & Papa, 2000).
5. **Blue-Collar Workers:** refers to skilled tradespeople, factory workers, farmers, and other laborers (Halle, 1984).
6. **Conservative Control:** A form of organizational control that emerges in accordance with the dominant ideologies in the organization (Tompkins & Cheney, 1985).
7. **Considerate:** A dimension in the Occupational Work Ethic Inventory (OWEI) that represents a measurement of thoughtfulness.
8. **Cooperative:** A dimension in the Occupational Work Ethic Inventory (OWEI) that represents a measurement of helpfulness.
9. **Conventional Work Groups:** Groups that are divided into narrow jobs in which employees are accountable for performing specific tasks (Orsburn, Moran, Musselwhite, Zenger, & Perrin, 1990, p. 9).
10. **Cottage Workers:** Individuals that produced goods and services from their own homes.
11. **Dependable:** A dimension in the Occupational Work Ethic Inventory (OWEI) that represents a measurement of reliability.

12. **Factory Culture:** A concept that refers to the practices, values, metaphors, stories, vocabulary, ceremonies, rituals, rites, heroes, and legends that are held by a group of people (Pacanowsky & O'Donnell-Trujillo, 1982).
13. **Gender:** The participant's particular sex. The two levels included male or female.
14. **Greenfield Site:** Brand new, start-up facilities (Orsburn, Moran, Musselwhite, Zenger, & Perrin, 1990, p. 170).
15. **Hierarchy of Needs:** A theory by Maslow that states that lower order needs, such as shelter, safety, and sustenance, must be fulfilled before higher order needs can be addressed (Maslow, 1968; Maslow, 1970a; Bee, 1996, p 318).
16. **Occupational Work Ethic Inventory (OWEI):** 50 item questionnaire designed to measure a worker's work ethic. This instrument, developed by Dr. Gregory C. Petty, included four subscales to measure the work ethic dimension of *dependable*, *considerate*, *ambitious*, and *cooperative* (Hill, 1992, p. 13).
17. **Protestant Work Ethic:** It states that a vocation is essential for entry into the kingdom of heaven. Key elements of the Protestant Work Ethic includes diligence, punctuality, deferment of gratification, and primacy of the work domain (Rose, 1985, p. 29)
18. **Protestant Reformation:** A former Catholic monk, Martin Luther, nailed his thesis on a church door announcing his fundamental split with the Catholic church. This lead to a new domination of Christianity.
19. **Scientific Management:** A movement that sought to increase efficiency through the standardization of production processes using scientific methods.

20. **Self-Directed Work Team:** A highly trained group of employees, from 6 to 18, on average, fully responsible for turning out a well-defined segment of finished work (Orsburn, Moran, Musselwhite, Zenger, & Perrin, 1990, p. 8).
21. **Socialization:** The process of learning the ropes, being indoctrinated and trained, the process of being taught what is important in an organization or some subunit thereof (Schein, 1968).
22. **Socio-Technical Systems:** This concept states that to understand how people operate in an organization, it is necessary to understand both the social system (the interaction of people with each other) and the technical system (the tools and techniques employed in work).
23. **Taylorism:** Frederick Taylor's belief that jobs can be broken down into small definable tasks that can be easily replicated by interchangeable workers.
24. **Vocational Socialization:** The influence family, education, part-time jobs, peers or friends, and the media on individuals' active, or sometimes more accidental, selection of occupation (Dunkerley, 1975; Jablin, 1987).
25. **Work:** Physical or mental exertion required for the production of goods and services and which usually results in fatigue (Hill, 1992, p. 14).
26. **Work Ethic:** A cultural norm that places a positive moral value on doing a good job and is based on a belief that work has intrinsic value for its own sake (Cherrington, 1980, p. 19 Yankelovich & Immerwahr, 1984, p. 64).

Chapter II

Review of Related Literature

The following review of literature is focused on the theories and movements that were credited with the development of self-directed work teams, research that supports non-traditional work place interventions, characteristics that constitute self-directed work teams, research related to self-directed work team, and the development of work ethic instruments.

The Rise of Industrialization and Scientific Management

The rise of the Protestant Reformation marked the dawn of the Protestant Ethic whose key elements were diligence, punctuality, deferment of gratification, and primacy of the work domain (Rose, 1985). These values have been credited for creating a great explosion of commerce and fueling industrialization.

Prior to industrialization most goods and services were produced through cottage workers and independent crafts people. For these people “work was necessary and often filled with hardship, intensified production at the expense of other activities was not understood as the road to a better life” (Thompson, 1966; Zuboff, 1983, p. 156). Early British industrial capitalists, driven for success by the Protestant Ethic, centralized and synchronized production. Crafts people that were producing goods in their own homes were brought together under one roof in order to increase productivity and efficiency.

In the United States, most goods and services were performed in the home or in small workshops up until the 1850’s (Zuboff, 1983). The number of people self-employed in the United States went from 80% in 1820 to only 33% in 1870 and to 20% in

1940 (Rodgers, 1978). In those industries in which mass production had taken hold early, most employees enjoyed a great deal of autonomy in deciding how work would be done. In the iron industry, teams of workers collectively decided how tasks would be assigned, pay rates, and who would be hired (Montgomery, 1979). Workers in the steel industry enjoyed the same type of autonomy (Stone, 1974). In the earliest parts of the 20th century, textile mills were often operated by individuals who were closely related and business decisions were most often treated as family decisions (Hareven & Langenbach, 1978). Work motivation amongst the individuals in the iron, steel, and textile industries remained high due to the continuity of the craft traditions (Zuboff, 1983). However, as the size of factories grew and work became more departmentalized and dependent upon machinery there was a need for stricter supervision (Zuboff, 1983).

Turnover rates soared as management attempted to increase their control over the production process. Rodgers (1978) stated that most industrial workers changed jobs at least every three years between 1905 and 1917. An Armour meat packing plant in Chicago hired 8000 people each year to keep a daily payroll of 8000 workers (Rodgers, 1978). This set the stage for the scientific management movement.

Scientific management sought to increase efficiency through the standardization of production processes. Frederick Taylor, a leader in the scientific management movement, wanted “to be able to systematize the performance of tasks so that perfect identity and repeatability could be established across similar tasks repeated by the same individual, and across individuals engaged in the same task” (Zuboff, 1983, p. 161).

Taylor believed that processes can be broken down into small repetitive tasks so that employees can be easily trained and replace. This concept became known as Taylorism.

Scientific management created a more detailed division of labor through the study of each step of a task so that it could be “simplified and hence made uniform and repeatable. This meant that the greatest asset a worker had – knowledge – was both accessible and owned by management” (Zuboff, 1983, p. 162). Management enjoyed an increase in output and uniformity of products through the uniformity of human activity that scientific management initiatives produced. However, this movement diminished the need for highly skilled labor and crafts people and removed the initiative of the individual worker and replaced it with interchangeability, rigorous discipline, and submission to directives (Touraine, 1974). Blue collar workers were relegated to repetitive, mind-numbing jobs in which frustration and distrust rose (Appelbaum, et al., 2000).

The advent of scientific management and an increased division of labor through assembly lines and mass production challenged the classic Puritan work ethic. Specialized craftsmen and trades people were being replaced by a series of lever pulls and gear turns. “What the managers of these new enterprises now needed to induce was obedience and efficiency, not the questioning stubborn ways of the autonomous crafts person idealized by the old work ethic” (Zuboff, 1983, p. 163).

New sources of motivation were being developed that emphasized “steady employment, higher wages, and an improved standard of living” (Zuboff, 1983, p. 163). As work became more compartmentalized and anonymous a need for social interaction in and out of work became increasingly important. The principles of scientific management

were creating alienation and a loss of meaningfulness in work. “It was Mayo’s work that argued for an understanding of the worker as a psychological self whose motivation depended upon the fulfillment of social and emotional needs” (Zuboff, 1983, p. 165). Mayo believed that attitudes, feelings, and social bonds were predictive of worker behavior (Zuboff, 1983, p. 165). These concepts became prominent in Maslow’s Hierarchy of Needs. Maslow’s theory stated that lower level needs must be satisfied before higher level needs can be addressed (Maslow, 1968; Maslow, 1970a; Bee, 1996, p. 318).

Zaleznik, Christenson, and Roethlisberger (1958) stated in their study that the typical worker’s basic human needs were being met and as a result their higher order needs were coming to the forefront. These needs included membership, achievement, and self-fulfillment (Zaleznik, Christenson, and Roethlisberger, 1958). The researchers believed that managers must structure work in ways that provided opportunities for workers to satisfy these higher order needs. The understanding of the psychological self and higher order needs challenged the belief that work ethic was based solely on economic principles.

Zaleznik, Chistenson, and Roethlisberger’s (1978) findings were validated two decades latter in a study by Bucholz in which he found that workers from a wide range of occupational backgrounds valued “the importance of finding personal fulfillment and satisfaction in one’s job, of having a chance to learn new things on the job and grow in the knowledge of oneself.”

Foulkes (1980) found that managers that appeal to employee higher order needs gain “greater flexibility in the utilization of people, reduced resistance to technological change, a more favorable employee climate, and lower absenteeism and turnover rates” (Zuboff, 1983, p. 176).”

Srivasta et al. (1975) found that workers will have an increased level of intrinsic motivation when the organization they work for provides “a clear contract of worker discretion over specified activities; immediate non-evaluative feedback controlled by those workers possessing autonomy; increased interpersonal or group skills to facilitate autonomous actions; and worker controlled opportunity” (Zuboff, 1983, p. 176). Forward thinking leaders in business and industry began to take note of the new realities of the work ethic.

Socio-Technical Systems

Researchers and social scientists were invoked to develop new and innovative work designs that would challenge and inspire the modern worker. During this time the theory of socio-technical systems became popular. This theory is based on the interdependence between technical aspects of the work and the broader social milieu in which the work is done (Emery & Trist, 1969; Trist, Higgin, Murray, & Pollock, 1963).

The original study of self-directed work teams and the genesis of socio-technical systems was an examination of British coal mining teams (Trist & Bamforth, 1951). In this study the management of the mines shifted the miners from self-directed work teams into specialized teams. The result was a decrease in productivity, job satisfaction, and an increase in absenteeism (Trist, 1981).

Richard Walton of the Harvard Business School linked improved business outcomes with more challenging work, increased worker influence, and a less competitive environment (Zuboff, 1983, p. 171). Walton believed that business leaders and social scientists “must coordinate the redesign of the way tasks are packaged into jobs, the way workers are required to relate to each other, the way performance measured, and rewards are made available, the way positions of authority and status symbols are structured, and the way career paths are conceived” (Walton, 1972; Zuboff, 1983, p. 171).

Edward Lawler (1978) in an article titled “The New Plant Revolution” categorized the innovations in work design into six key elements:

1. Physical design of facilities that are congruent with social objectives
2. Job designs that give emphasis to self-managing teams
3. Compensation systems that reward skill development
4. Organization structures that minimize hierarchy, supervision, and functional specialization
5. Heavy emphasis on training, personal growth, and career development
6. A management style that allows decision making to be pushed to the lowest levels of the organization (1978).

Organizations such as Proctor & Gamble, Digital Equipment, General Mills, Federal Express, and TRW (Cotton, 1993, p. 173) have implemented many of the innovations outlined by Lawler. Lawler reports that Proctor & Gamble “has closed its

new-design plants to researchers and others because it believes that it now enjoys a competitive advantage and it doesn't want to share it" (Lawler, 1978).

Walton (1972) favored the institution of autonomous work groups that provide "self-management opportunities related to task distribution, coordination, training, and problem solving" (Zuboff, 1983, p. 171). Typically autonomous work groups include collective control over the pace of work, distribution of tasks, organization of breaks, and collective participation in the recruitment and training of new members (Gulowsen, 1972). Gaines Pet Food implemented autonomous work teams at one of its plants through Walton's consultation. A majority of the findings indicated a rather large economic benefit with a high level of employee commitment that was not typical (Zuboff, 1983, p. 172). This site was studied by Schrank (1974), Lawler, Jenkins, and Herline (1974). They all found high levels of worker participation, involvement, satisfaction, and substantial production savings. Many other companies followed suit and instituted autonomous work teams and a number of other work improvement projects similar to the ones instituted at the Topeka, Kansas Gaines pet food plant.

Self-Directed Work Teams

Self-directed work teams were a cornerstone of socio-technical theory and practice. Many books and research articles were published about the subject. Many of these publications gave detailed descriptions of what constituted a self-directed work team. There were also a number of studies conducted that provided empirical evidence that supported the many benefits of self-directed work teams.

Characteristics of Self-Directed Work Teams

The terms high-performance work teams, autonomous work teams, self-managed work teams, self-regulating work teams, and autonomous work groups are used to identify a highly trained group of employees, from 6 to 18, on average, fully responsible for turning out a well-defined segment of finished work (Orsburn, Moran, Musselwhite, Zenger, & Perrin, 1990, p. 8). For the purpose of this study and literature review this concept will be referred to as self-directed work teams. The following section will further develop this concept by presenting descriptions of self-directed work teams from several authors and researchers.

Dachler and Wilpert (1978) defined self-directed work teams as “frontline employees (typically blue-collar production or clerical employees) who are given the opportunity to make decisions (as a group) over their day-to-day operations” (p. 2). They further stated that self-directed work teams involved a formal system of employee involvement, direct employee participation, and a high degree of control (Dachler & Wilpert, 1978).

Cotton (1993) described self-directed work teams as a group of 12 to 15 employees that make decisions typically made by supervisors. He stated that within a production facility, self-directed work teams would probably make decisions on “who will operate what machines, when breaks would be taken, what type(s) of maintenance would be performed, how often quality would be checked, and other routine decisions” (Cotton, 1993, p. 174). Cotton (1993) also explored the possibility of the teams absorbing

human resources responsibilities to include performance appraisals, hiring and firing, and electing supervisors.

Orsburn, Moran, Musselwhite, Zenger and Pennin defined a self-directed work team as a “highly trained group of employees, from 6 to 18, on average, fully responsible for turning out a well-defined segment of finished work” (1990, p. 8). They described self-directed work teams as the opposite of an assembly line because every member of the teams shares equally in the responsibility for the completion of their segment of the work. While workers in an assembly line is only responsible for a narrow technical function (Orsburn, Moran, Musselwhite, Zenger, & Pennin, 1990, p. 8).

Eric Sundstrom defined a work team as “interdependent individuals who share responsibility for specific outcomes for their organization” (1999, p. 7). He stated that defining features of a work team are interdependent roles, interdependent goals, interdependent outcomes or shared fate, reporting to the same manager, co-location or shared workplace, small size, members see themselves as a team, and stable membership (Sundstrom, 1999, p. 98).

Buchholz and Roth (1987) identified eight attributes of high-performance work teams. These attributes included:

1. Participative leadership – creating an interdependency by empowering, freeing up, and serving others
2. Shared responsibility – establishing an environment in which all team members feel as responsible as the manager for the performance of the work unit

3. Aligned on purpose – having a sense of common purpose about why the team exists and the function it serves
4. High communication – creating a climate of trust and open, honest communication
5. Future focused – seeing change as an opportunity for growth
6. Focused on task – keeping meetings focused on results
7. Creative talents – applying individual talents and creativity
8. Rapid response – identifying and acting on opportunities. (p. 14)

Kimball Fisher and Mareen Duncan Fisher (1998) defined self-directed work teams as:

a group of employees who have day-to-day responsibility for managing themselves and the work they do with a minimum of direct supervision.

Members of self-directed work teams typically handle job assignments, plan and schedule work, make operational decisions, and take action on problems (p. 44).

The authors also stated that traditional work groups are typically organized into separate specialized jobs with narrow responsibilities while members of self-directed work teams are jointly responsible for while work processes with each individual performing multiple tasks (Fisher & Fisher, 1998, p. 48).

Self-Directed Work Team Research

Morse and Reimer (1956) studied the introduction of greater participation in two units within a department and less participation into other units within the same department. The units that received greater participation were allowed to make decisions

about work issues, work methods, break periods, and the handling of tardiness. Most decision making power was removed from lower level management in the restricted participation units. Morse and Reimer's attitudinal measures indicated improvements in the greater participation units and decreases in the authoritative units.

Trist et al. (1963) compared two units of British coal miners in the same mine. One of the units had a traditional work design while the other was a self-directed work team. Trist et al. (1963) found that the self-directed work team unit had a higher rate of productivity and a lower rate of absenteeism.

Trist et al. (1977) studied an American coal that had one sections of self-directed work teams and two other sections with traditional work designs. The researchers found a substantial drop in violations of health and safety violations and a small increase in accidents for the self-directed work teams section. The autonomous work groups received the highest safety ratings in the mine. The study also showed an increase of positive work attitudes.

Pasmore (1978) compared two units of a food-processing company. One had adopted self-directed work teams and the other had a more traditional work environment. Pasmore found that the self-directed work team unit had significant improvements in productivity while there were no improvements in the traditional environment.

Kemp, Wall, Clegg, and Coderey (1983), Wall and Clegg (1981), and Wall, Kemp, Jackson, and Clegg (1986) compared self-directed work teams in a British candy factory to traditional workers in the same facility that worked a different shift and

employees at another similar facility. The employees in the self-directed work teams facility reported higher levels of intrinsic satisfaction.

Denison (1982) compared four plants that utilized self-directed work teams to 16 plants that did not within the same company. Denison found that the plants with self-directed work teams had significantly higher levels of satisfaction and perceived greater control over the production process.

Ondrack and Evans (1987) reported on a study involving Canadian petrochemical workers. Three plants were designed and constructed for self-directed work teams and two had been converted to work teams. The remaining of the plants in the study were traditional work sites. The researchers measured job characteristics, such as skill variety and task significance, by using the Job Diagnostic Survey developed by Hackman and Oldham (1980). Ondrack and Evans also measured job satisfaction and satisfaction with specific job facets which included pay, co-workers, supervisors, and security. The measure of job characteristics was found not to have a significant difference amongst the different types of plants. Employees at the greenfield sites were found to have a higher level of job satisfaction. Ondrack and Evans concluded that self-directed work teams were more successful at greenfield sites.

Research by Cordery, Mueller, and Smith (1991) conducted a longitudinal study of two mineral processing plants in Australia. One of the plants was a greenfield site that utilized self-directed work teams, while the other was a traditional work environment. The two plants utilized the same ore, technology, shifts, pay, and personnel policies. The researchers surveyed the employees on measures of perceived intrinsic job

characteristics, work role autonomy, satisfaction with extrinsic factors, satisfaction with the job and participation, organizational commitment, and trust in management (Cotton, 1983). The employees were surveyed eight months after start-up and then again 12 months later. The researchers found no effect for time at either plant. They also found no effect for trust in management. However, Cordery, Mueller and Smith found that workers in the organization utilizing autonomous work groups reported significantly higher scores in terms of intrinsic job characteristics, work role autonomy, extrinsic satisfaction, intrinsic satisfaction, and organizational commitment than those operating under traditional work structures.

Cummings and Maloy (1977) reviewed 16 case studies regarding self-directed work teams. They found that “9 of the 10 studies measuring productivity showed increases, while one demonstrated a decrease” (Cotton, 1993, p. 181). The review also showed that of the eight studies that evaluated employee attitudes, five indicated improved attitudes, one showed lower attitudes, and two demonstrated attitudes that some attitudes improved while others worsened. Cummings and Maloy found four studies that examined turnover. Three of the studies found lower turnover, while one found higher turnover. Quality was examined by three of the reviewed studies. Two of the studies showed increased quality and one found decreased quality.

Pasmore, Francis, and Haldeman (1982) included 134 studies in their review of socio-technical systems. The review included 71 studies that described the use of self-directed work teams. “The self-directed work teams were extremely successful in terms of employee attitudes, safety, and quality; 100% of the studies that measured these

variables found improvements in them” (Cotton, 1993, p. 182). Other variables were found to be positively effected as well. The studies that were reviewed indicated that 89% found improved productivity, 85% showed decreased cost, 86% found decreased absenteeism, and 81% demonstrated decreased turnover” (Cotton, 1993, p. 182).

Pasmore et al. (1984) stated that their review of socio-technical interventions indicated that “self-directed work teams represented half of the studies reporting positive results” (Cotton, 1993, p. 182). While these studies represented great success for self-directed work teams, Pasmore et al. also noted that many of the characteristics associated with self-directed work teams were not implemented. Feedback on performance, providing interaction with customers, providing managerial information to team members, allowing team members to choose their peers, and allowing team members to supply themselves were most often absent from the self-directed work team concepts employed in the reviewed studies.

Beekun (1989) utilized a meta-analysis to measure the impact of socio-technical interventions in 17 studies. The meta-analysis involved studies focused on the formation of teams. The studies were divided into three groups based on the degree of autonomy the teams were given. “Beekun found that studies involving the establishment of autonomous, rather than semi- or nonautonomous, work teams demonstrated larger increases in productivity” (Cotton, 1993, p. 183).

Pearce and Ravlin (1987) reviewed 10 studies published between 1970 and 1980. Pearce and Ravlin focused on the aspects of the implementation process that created successful teams (Cotton, 1993). Their results indicated that teams were most effective

when they had a heterogeneous composition and a low degree of status difference amongst the team members.

Appelbaum et. al. (2000) studied a number of variables including trust, intrinsic rewards, organizational commitment, job satisfaction, and work-related stress. The researchers surveyed employees in the steel, apparel, and medical manufacturing industries. Trust, intrinsic rewards, organizational commitment, job satisfaction was found to be positively related to self-directed work systems in each of the three industries studied. The work-related stress scale was somewhat complicated by demographic differences. However, most aspects of self-directed work team participation reduced levels of job stressors. The researchers also found that the amount of money that workers earn in the apparel industry is positively related to participating in high-performance work systems. The other industries indicated a small positive correlation but not as significant as the one found in the apparel industry.

Organizational Socialization/Assimilation and Concertive Control

Research on blue-collar workers indicated that they toil under unpleasant work conditions because they consent to do it based on drives for money and supporting their families, as well as their identification with the norms and practices of the organizations for which they work (Burawoy, 1979). The assimilation of workers into the factory culture would lead them to accept the most tedious and unpleasant of work conditions if that was the norm and was expected. Burawoy (1979) stated that workers identify with a system of work that values and requires making money through standardized means of production which may include piece-rate systems. Blue-collar workers become

indoctrinated, socialized, and assimilated into a factory environment. “Assimilation involves the cognitive acceptance and identification with an organization and/or group” (Gibson & Papa, 2000, p. 3). “Organizational identification occurs when an employee internalizes the values, beliefs, and assumptions of an organization or work group” (Gibson & Papa, 2000, p. 3).

Jablin’s (1982, 1984, 1985, 1987) assimilation model described a process in which the organization influences the assimilation of new workers through socialization efforts, while the new workers attempt to maintain their own habits, values, and beliefs which may ultimately lead to a change in the organization. This process was described as having three distinct stages: anticipatory socialization, encounter, and metamorphosis stage. Jablin (1985) identified the anticipatory socialization stage by the influences that family members, educational institutions, part-time job experiences, peers and friends have on new workers developing expectations and beliefs about how people communicate in particular occupations and setting. The encounter stage could be identified by the clash of previously held expectations with the reality of the organization. Jablin (1984) described the metamorphosis stage as when the newcomer utilized newly learned attitudes and behaviors to be consistent with those of the organization.

Tompkins and Cheney (1985) described concertive control as a form of organizational control that arises in accordance with the dominant ideologies in the organization. Members of the organization adopt the norms that provide “knowledge about the right ways to act and interact in the organization” (Barker, 1993, p. 411). Concertive control maintains the interests of management. However, it is the “workers

that collaborate to create rules and norms that govern their behavior” (Papa, Auwal, & Singhal, 1995, p. 196). “Peers within the team enforce the concertive control system on each other. Team members are expected to conform to the team norms and rules, with violation resulting in various forms of sanctioning by the team” (Wright & Barker, 2000, p. 347).

Concertive control is a central concept in the socio-technical systems conceptualization of the self-managed team. Team members have discretion over such decision as methods of work, task schedules, and assignment of members to different tasks (Cummings, 1978). Teams negotiate a consensus on key values that are used to govern their collective work and then create norms and formal rules through day-to-day interactions (Barker, 1993). In participative environments, workers will develop a powerful sense of functional self-control from their own values, norms, and rules for doing good work on the team (Barker, 1993). Barker (1993) stated that compared to other forms of organizational control, concertive control may be more dominant, less apparent, and more difficult to subvert.

Barker and Tompkins (1994) compared team member identification with the team to team member identification with the organization. They found that workers in a concertive environment identified more with their team than with the organization. Further, the research indicated that the more tenured team members had an increased identification with their team. However, identification increased for both the organization and the team with increased tenure.

Work Ethic Instruments

In 1969, D.E. Super created the Work Values Inventory. This instrument was designed to measure 15 values identified as creativity, management, achievement, surrounding, supervisory relations, way of life, security, associates, esthetics, prestige, independence, variety, economic return, altruism, and intellectual stimulation (Gable, 1972). The measure of these values reflect upon the worker's satisfaction with employment rather than directly assessing work ethic (Hill, 1992, p. 40). "Super (1970) defines work-values as being work-goals—those attributes or qualities we consider to be intrinsically desirable and which people seek in the activities in which they engage" (Breme & Cockriel, 1975; Hill, 1992, p. 40).

F.S. Wayne's (1989) instrument was designed to measure adherence to contemporary work values and the Protestant work ethic. The instrument consisted of 119 four-point Likert scaled items. Wayne surveyed 688 subjects and found no difference in measure of Protestant work ethic based on gender or age. However, women scored higher than men on the contemporary work values scale. The under 25 group and the 31 to 35 group scored lower than other age groups for contemporary work values. Individuals earning between \$50,000 and \$59,999 and less than \$10,000 had the lowest scores on the contemporary work values scale, while those earning between \$15,000 and \$19,999

Furnham (1990) studied seven instruments designed to measure the Protestant Work Ethic. These instruments studied by Furnham (1990) included:

1. The Protestant Ethic (Goldstein and Eichorn, 1961)
2. The Protestant Work Ethic (Mirels and Garrett, 1971)

3. The Pro-Protestant Ethic Scale (Blood, 1969)
4. The Spirit of Capitalism Scale (Hammond & Williams, 1976),
5. The Leisure Ethic and Work Ethic (Buchholz, 1978)
6. The Eclectic Protestant Ethic (Ray, 1982)
7. The Australian Work Ethic (Ho, 1984) (p. 385)

After data was collected from 1,021 subjects, Furnham found that five main factors accounted for one-third of the total variance between items (1990). These factors included: (a) belief in hard work (b) the role of leisure, (c) religious and moral beliefs, (d) a stress on independence of others, and (e) asceticism (Furnham, 1990, p. 394). Furnham concluded that the Protestant work ethic consisted of various related facets and that differences in previous research was caused by an emphasis on one of more of these different facets (1990, p. 397). He recommended that future work ethic scales include measures of attitudes and beliefs about asceticism, independence, time, leisure, and work (Furnham, 1990, p. 396).

Furnham and Koritsas (1990) studied the relationship between the seven previously stated Protestant work ethic scales and Holland's vocational preference instrument. Holland's instrument, The Self-directed Search, six personality types which included: (a) realistic, (b), investigative, (c) artistic, (d) social, (e) enterprising, (f) conventional. The realistic, artistic, enterprising, and conventional types were positively correlated with the Protestant work ethic scales.

Occupational Work Ethic Inventory (OWEI)

The Occupational Work Ethic Inventory was developed by Dr. Greg C. Petty (1991). This instrument is based on work done by Dr. H.C. Kazanas on affective work competencies and work values. Kazanas published the Affective work Competency Inventory which was used in research by Petty and Morgan (1980). Their research identified 63 affective work competencies that were grouped into 15 clusters. Petty developed the Occupational Work Ethic Inventory by using the work competencies phrase list to directly measure work ethic in relation to a person's work (Dawson, 1999, p. 68). Petty convened a panel of subject-matter experts to establish content validity. This panel categorized one- or two- word descriptors into groups. This process took place until consensus was reached (Petty, 1991). The clusters created by the categorization process were labeled *dependable*, *ambitious*, *considerate*, and *cooperative*. The instrument was validated by Hill's (1993), Petty's (1995), and Hill & Petty's (1995) studies.

Demographic Variables and Work Related Measures

Miller's (1980) study of freshman and senior students at a land grant university indicated that occupational interest and gender were the two variables accounting for the largest variance in Protestant work ethic values.

Hall (1990, 1991) conducted a study of traditional and non-traditional community college students categorized by gender, work experience, and age. Hall found that female students scored higher than male students on measures of work attitudes.

Wayne (1989) found no difference in Protestant ethic values based on gender. However, women scored significantly higher than men on a scale measuring contemporary work values.

Hill's (1992) study of occupation, education, age, gender, work experience, and empowerment found that females scored significantly higher than males on all four of the work ethic dimensions measured the Occupational Work Ethic Inventory (OWEI) subscales (*dependable, considerate, ambitious, cooperative*). The finding that women scored higher than men on the Occupational Work Ethic Inventory was consistent with findings from most other studies which have included gender as a variable (Hall, 1990, 1991; Miller, 1980; Wayne, 1989).

Summary of Review of Related Literature

The review of literature briefly traced the rise of mass manufacturing from the age of cottage industries into large production processes amassed under one roof where management struggled with workers for control of the process. This change in the realities of work challenged the traditional Protestant work ethic and replaced it with an ethic based on job security, higher standards of living, and compensation (Zuboff, 1983). Scientific management provided industrial leaders with the control and ownership of the process that they desired. However, their single-minded focus on efficiency and standardization created a great deal of alienation and lack of meaningfulness of work amongst their workers causing a great deal of turn-over (Touraine, 1974).

Mayo encouraged employers to view workers as individuals with social and emotional needs. Following Maslow's Hierarchy of Needs the workers' lower order

needs were being met but their higher order needs were coming to the surface and needed to be addressed (Maslow, 1968). Researchers found that workers highly valued personal fulfillment, learning new thing on the job, and job satisfaction. Foulkes (1980) found that when managers appealed to those needs they were able to improve worker attitudes and reduce turnover and absenteeism. When workers are given discretion over their work responsibilities then they would be more likely to have an increased level of intrinsic motivation (Srivasta et al., 1975). These scientific studies lent validity to the rise of socio-technical theory.

Socio-technical theory was developed based on an interdependence between technical aspects of work and the broader social milieu in which is done (Trist, Higgin, Murraray & Pollock, 1963). Sociotechnical theorists and researchers were focused on increasing productivity and worker attitudes through the modification of work environments, production processes and work structures. The implementation and study of self-directed work teams became a cornerstone of the sociotechnical movement.

Self-directed work teams consist of small groups of workers that are given ownership of the production process. They utilize the skills and resources available to the team to set production goals and achieve those goals. The teams work cooperatively, utilize participative leadership, and make decision based on consensus (Orsburn, Moran, Musselwhite, Zenger, & Perrin, 1990).

Socialization, assimilation, and concertive control are concepts that can help to explain worker adaptation to new corporate cultures and work environments. Concertive control is a form of organizational control that arises in accordance with the dominant

ideologies in the organization (Tompkins and Cheney, 1985). Members of the organization adopt the norms that provide knowledge about the right ways to act and interact in the organization (Barker, 1993).

Research indicated self-directed work teams have a positive impact on employee attitudes (Trist et al., 1963), safety (Trist et al., 1977), absenteeism (Trist et al., 1963), productivity (Pasmore, 1978), intrinsic satisfaction (Kemp, Wall, Clegg, and Coderey, 1983), organizational commitment (Cordery, Mueller, and Smith, 1991) and quality (Cummings and Maloy, 1977). Table 1 provides a summary of studies examining self-directed work teams.

Finally, this review of literature focused on instruments that measure work ethic. This section briefly described a few instruments and their related research. This study utilized the Occupational Work Ethic Inventory developed by Gregory Petty.

Table 1

Summary of Studies Examining Self-Directed Work Teams

Cited in (Cotton, 1993, p. 189)

	Productivity	Of those studying: Satisfaction	Abstenteeism
Case studies (6 studies)	3 improved 1 no effect	2 improved	2 improved
Case study reviews (114 studies)			
Cummings & Malloy (1977)	9 improved 1 worsened	5 improved 1 worsened, 2 mixed	no data
Pasmore, Francis, & Halderman (1982)	40 improved 5 worsened or no change	36 improved	18 improved 3 no change
Beekun (1989)	3 improved 1 worsened	1 improved	5 improved 3 no change
Pearce & Ravlin (1987)	1 no change	2 improved	no data
Quasi-experimental studies (8 studies)			
	2 improved	6 improved	1 improved
	3 no effect	1 no effect	1 no change
Totals:	57 improved 7 no change* 5 worsened*	50 improved 3 mixed or no change 1 worsened	26 improved 7 no change
Number of null studies required to make findings random ($p=.50$)	981	928	487

Chapter III

Methodology

Introduction to Kimberly-Clark

Kimberly-Clark Corporation is a world-class leader in the manufacturing of consumer goods. Kimberly-Clark has manufacturing facilities located in 41 countries and employs over 64,000 workers (Kimberly-Clark Corporation, 2001). Throughout its 125 year history, Kimberly-Clark Corporation has produced easily recognizable household products such as Huggies diapers, Kleenex tissue, Scott paper towels, Cottonelle bath tissue, Depend adult incontinence products, and Kotex feminine care products. The company posted approximately \$14.5 billion in sales for the year 2001 (Kimberly-Clark Corporation, 2001). Kimberly-Clark's products are either ranked number 1 or 2 in market share in 71 countries (Kimberly-Clark Corporation, 2001). In 2001, the company was ranked by Fortune Magazine as one of the top 100 employers for providing a positive and supportive work environment for its employees (Levering & Moskowitz, 2002).

Loudon Mill

Almost 12 years ago Kimberly-Clark broke ground on a mill for the professional sector of its operations in Loudon, Tennessee. The mill was designed to produce hand towel and bath tissue product for business and industry under the Kleenex, Surpass, and Scott brands. The facility was designed to be a Greenfield site utilizing high performance work teams.

The machine operators at the facility are referred to as partners. The partners are assigned to 18 to 30 person teams in either hand towel or bath tissue production. Both

production processes have five functional areas. These functional areas include: (a) fiber prep, (b) tissue, (c) converting, (d) shipping, and (e) waste water. Each team member gains skills to work interchangeably between functions. Maintenance personnel are also organized in teams that are designated as either hand towel or bath tissue. Each team has a designated team coordinator. The team coordinator assumes many administrative and leadership responsibilities within each team. The team coordinator designation rotates amongst the members of each team giving each team member an opportunity to gain leadership and administrative skills.

Each team sets objectives to accomplish in order to meet business needs. The teams are given a great deal of autonomy to decide how to go about meeting their objectives. The partners also have a great deal of input into determining training needs, the hiring process, and the evaluation process.

Administrative and technical personnel are referred to as resources. Resource functions include: (a) human resources, (b) engineers, (c) finance, (d) purchasing, (e) logistics, (f) stores, and (g) mill information systems. The resources are available to assist the partners in producing and distributing the best possible product. There is a great emphasis placed on skill attainment through the use of mentors and benchmarking. Each team member is challenged to gain technical and functional skills that will enrich their team's skills mix, which in turn will make their team more successful in meeting their objectives. The self-directed work team approach at Loudon Mill made it an ideal location for the purposes of this study.

Neenah Nonwovens Mill

Neenah Nonwovens mill was built in 1969 in the birthplace of Kimberly Clark, Neenah, Wisconsin. This facility employs 146 machine operators. Most of those machine operators work 12 hour rotating shifts. This Neenah Nonwovens mill is a union facility that utilizes traditional work structures to accomplish its manufacturing process.

Population

The population consists of approximately 396 production workers employed by two manufacturing facilities (Kimberly-Clark Corporation Loudon Mill and Neenah Nonwovens Mill). The sample will be of 250 Machine Operators from Kimberly-Clark Corporation Loudon Mill and 146 from Neenah Nonwovens Mill.

Instrumentation

The Occupational Work Ethic Inventory (OWEI) was used in this study. The instrument was developed by Dr. Gregory C. Petty. The items for the instrument were selected based on a review of literature about work attitudes, work values, and work habits. A panel of experts examined the items and modifications were made based on their input. The instrument has four subscales which include *dependable*, *considerate*, *ambitious*, and *cooperative*.

Procedures

The Occupational Work Ethic Inventory (OWEI) was used to conduct the study. The instrument was distributed to production workers at each of the two manufacturing facilities included in this study. The surveys were distributed to the Loudon Mill machine operators at morning and evening shift change meetings in order to include every

operator. Donuts and cookies were distributed during the team meeting to encourage survey completion. The surveys were distributed to the Neenah Nonwoven machine operators through team meetings by a representative from the Neenah facility's Human Resources department. Each person who completed a survey in the Neenah facility was entered into a drawing for one of two \$50.00 gift certificates to retailers in Neenah, Wisconsin to encourage participation in the study.

Data Analysis

The data gathered from the OWEI were entered into a Microsoft Excel spreadsheet. Then, SPSS 10.1 for Windows was used to analyze the data. The OWEI, along with the demographic information was the only collection device utilized for this study. Descriptive statistics including the mean, standard deviation, and frequencies were gathered for the demographic data. A uni-variate analysis of variance (UNIANOVA) test was used to analyze the self-reported perceptions of work ethic from the OWEI for both Kimberly-Clark manufacturing facilities. The test divided the survey into four subscales (*dependable, considerate, ambitious, cooperative*) in order to measure the employees' level of work ethic. Finally, descriptive statistics and the Tukey Honestly Significant Difference (HSD) post hoc test were used to analyze any differences that persisted between the eight demographic variables (gender, age, level of education attained, years of full-time work experience, years of supervisory experience, preference of type of shift work).

Chapter IV

Analysis of Data and Results

Introduction

Three objectives were set for this study. The first was to measure the work ethic of machine operators in a self-directed work team manufacturing facility. The second was to measure the work ethic of machine operators in a conventional work groups manufacturing facility. The third was to determine if the work ethic scores of workers in a self-directed work team facility compare favorably to the work ethic of workers in a conventional work groups facility. The data gathered for this study were collected using the Occupational Work Ethic Inventory (OWEI) instrument (Petty, 1991) by the researcher at Kimberly-Clark paper mills in Loudon, Tennessee and Neenah, Wisconsin (see Appendix D). This chapter displays the results of the data that were collected from the participants.

Demographic Characteristics

The demographic information collected from this study was displayed as frequencies in order to help describe the population. The demographic information collected for this study included age, gender, years of full-time work experience, years of experiences as a supervisor, level of education, and work shift preference.

Responses to gender revealed that there were 53 (21%) female respondents and 199 (79%) male respondents for this demographic variable. The results for gender are depicted in Figure 1.

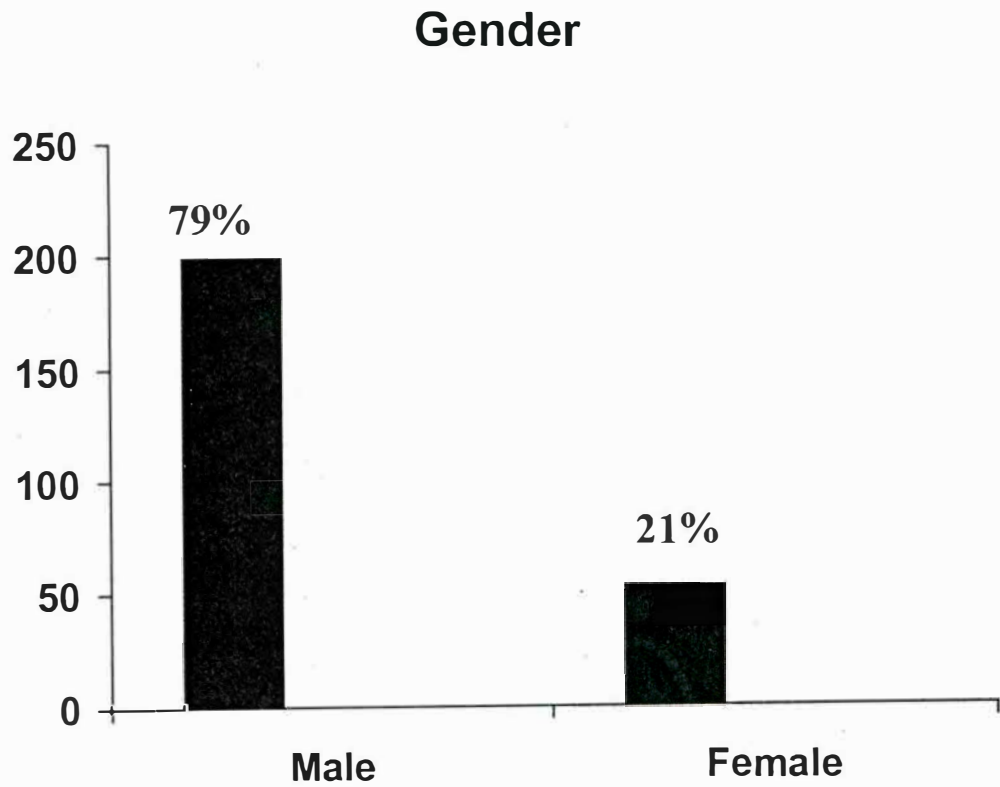


Figure 1. Histogram of the gender demographic data.

The age of the respondents was also examined. As shown in Figure 2, no respondent was 19 years or under, 8 (3%) were 20 to 26 years of age, whereas 63 (25%) were between the ages of 27 and 35, 168 (67%) were between the ages of 36 and 55, and 13 (5%) were over 55 years old.

The demographic variable level of education is shown in Figure 3. There was only one respondent (.4%) that had less than a high school diploma, 193 (76.6%) attained a high school degree or GED, while 51 (20.2%) had two years of college or associate's degree, 4 (1.6%) had a bachelor's degree, and 3 (1.2%) had completed at least some graduate work.

The number of years of full-time work experience is shown in Figure 4. There were 2 (.7%) respondents that had less than one year of experience, whereas 31 (12.3%) had one to five years of experience, and 219 (87%) had five or more years of experience.

Figure 5 represented the respondents' years of experience as a supervisor. As reported, 125 (49.6%) of the respondents reported no experience, 42 (16.7%) had less than two years of experience, while 68 (27%) respondents had between two and eight years, and 17 (6.7%) had more than 8 years of supervisory experience.

The preference for type of shift work was the last demographic variable examined in this study as shown in Figure 6. There were 8 (3.2%) respondents that preferred eight hour night shifts, 72 (28.6%) that preferred eight hour day shifts, 8 (3.2%) that preferred eight hour rotating shifts, 17 (6.8%) that preferred twelve hour night shifts, 38 (15%) that

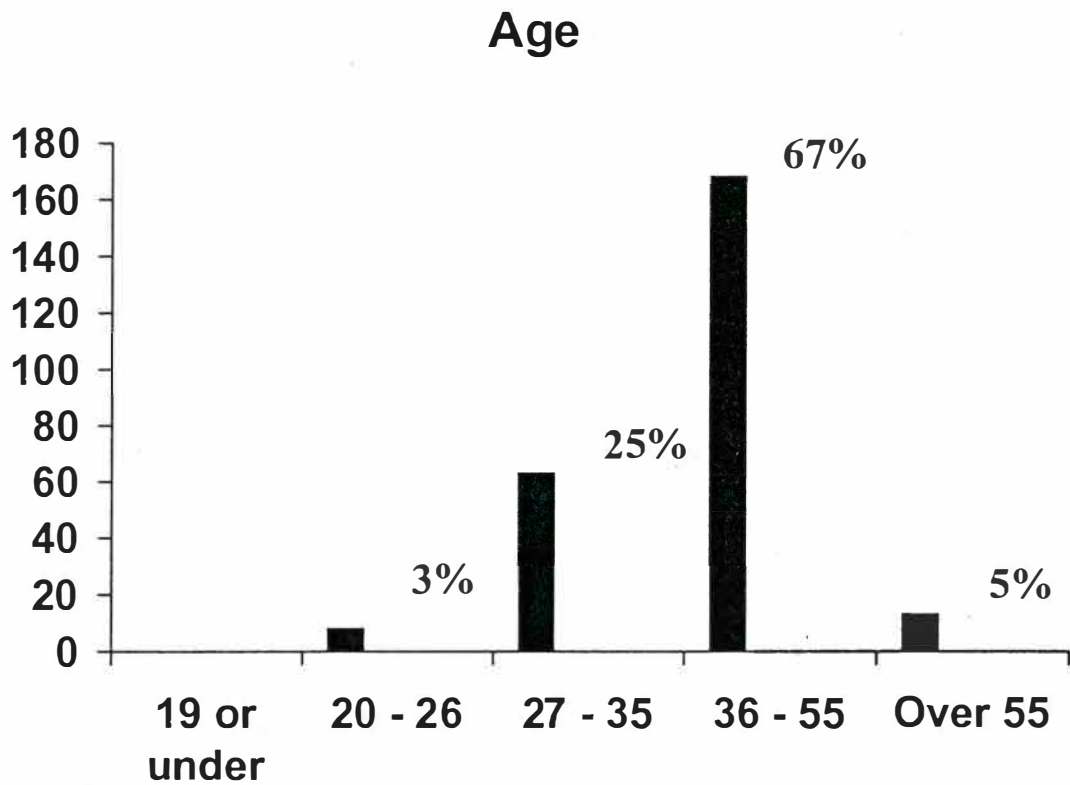


Figure 2. Histogram of the age demographic data.

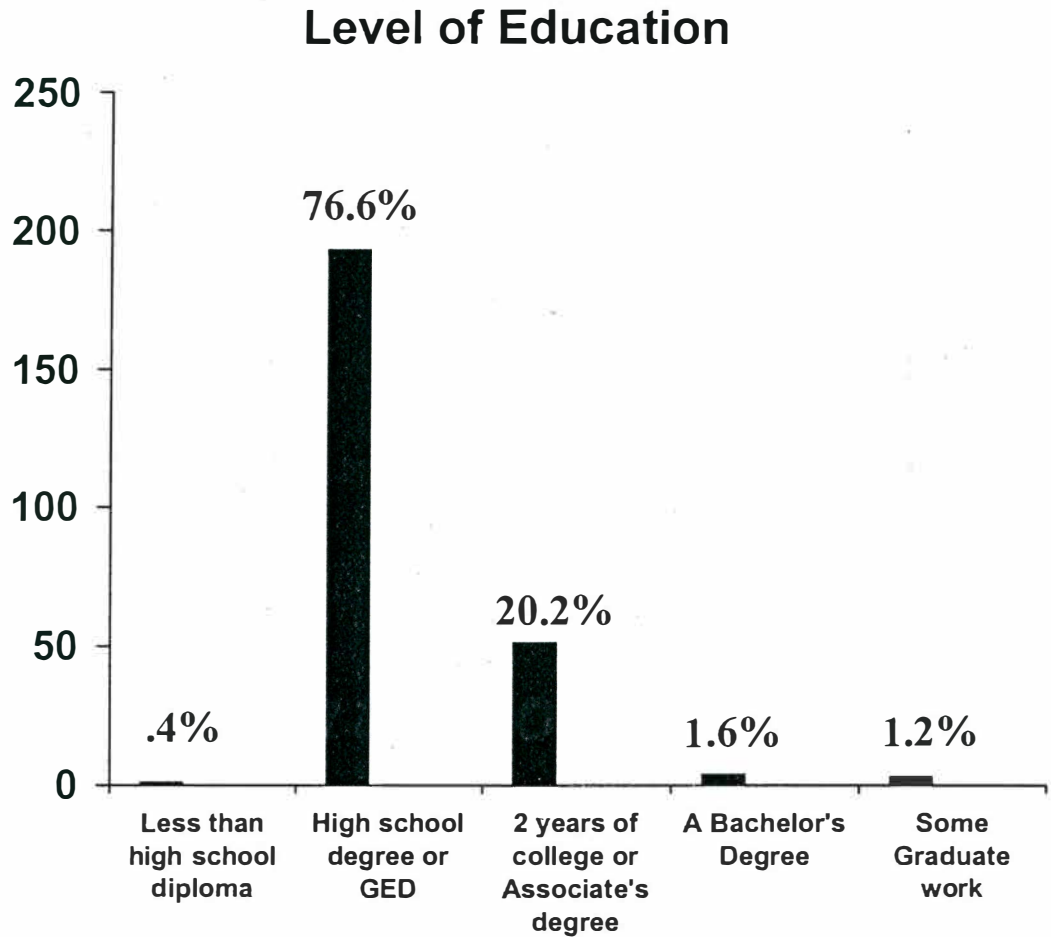


Figure 3. Histogram of the level of education demographic data.

Years of Full-Time Work Experience

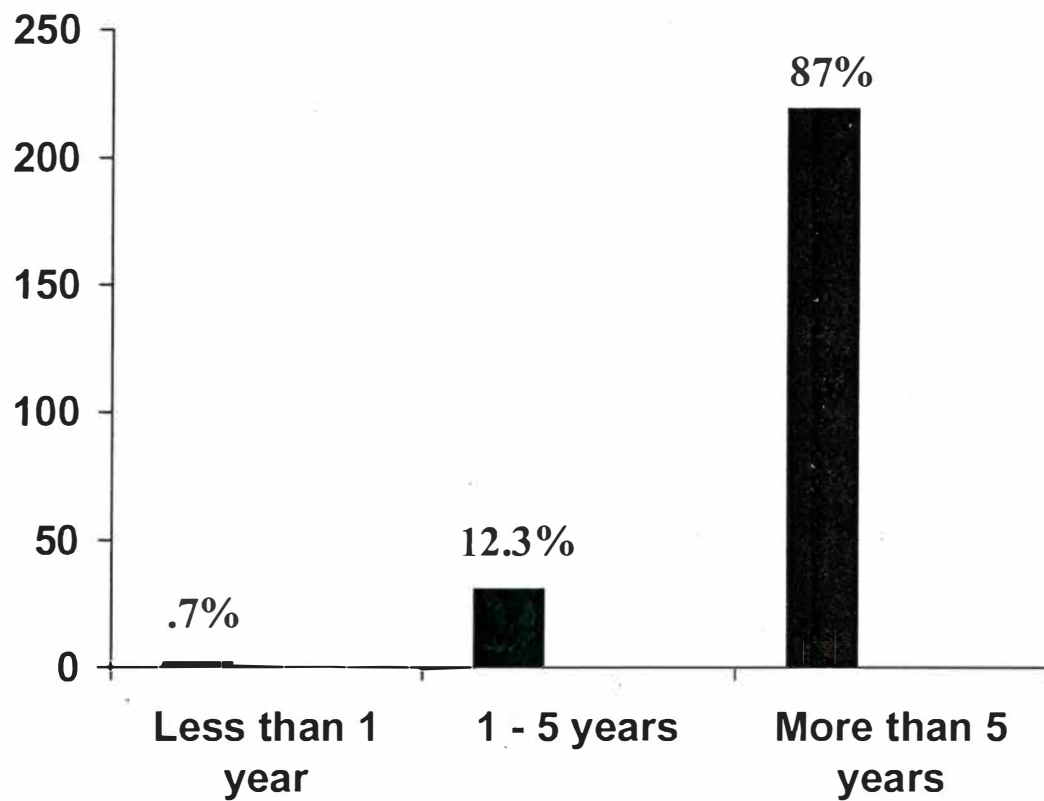


Figure 4. Histogram of the years of full-time work experience demographic data.

Years of Experience as a Supervisor

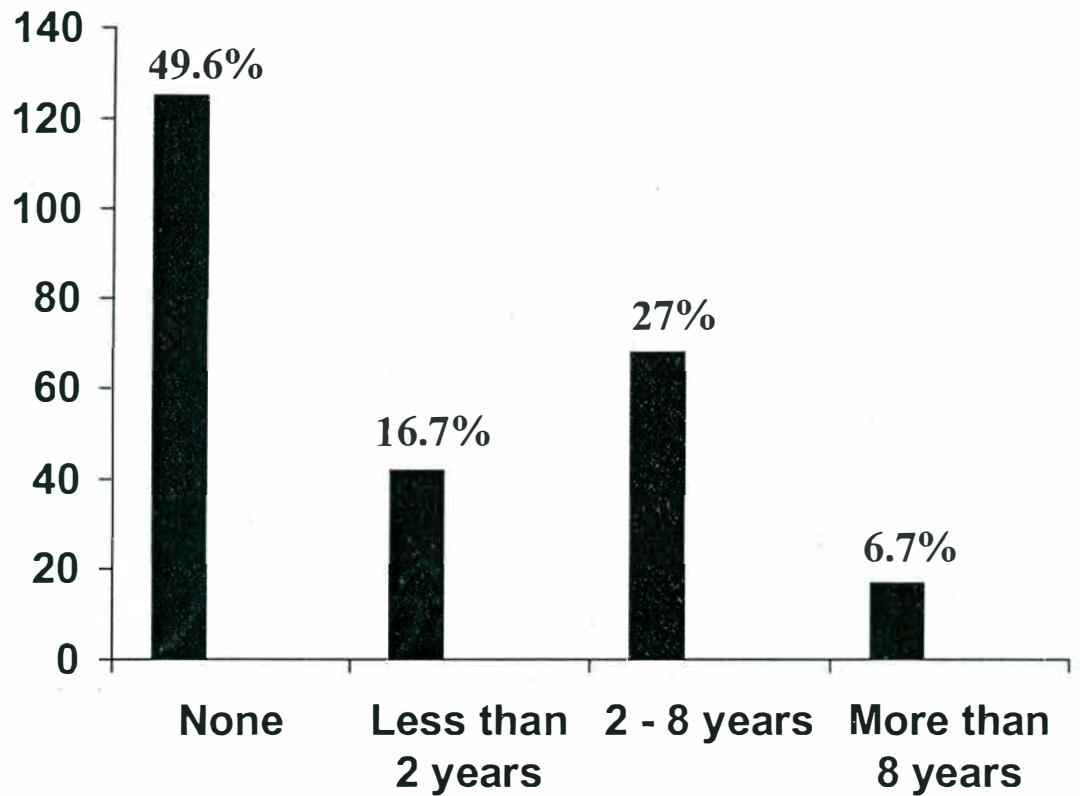


Figure 5. Histogram of the years of experience as a supervisor demographic data.

Shift Preference

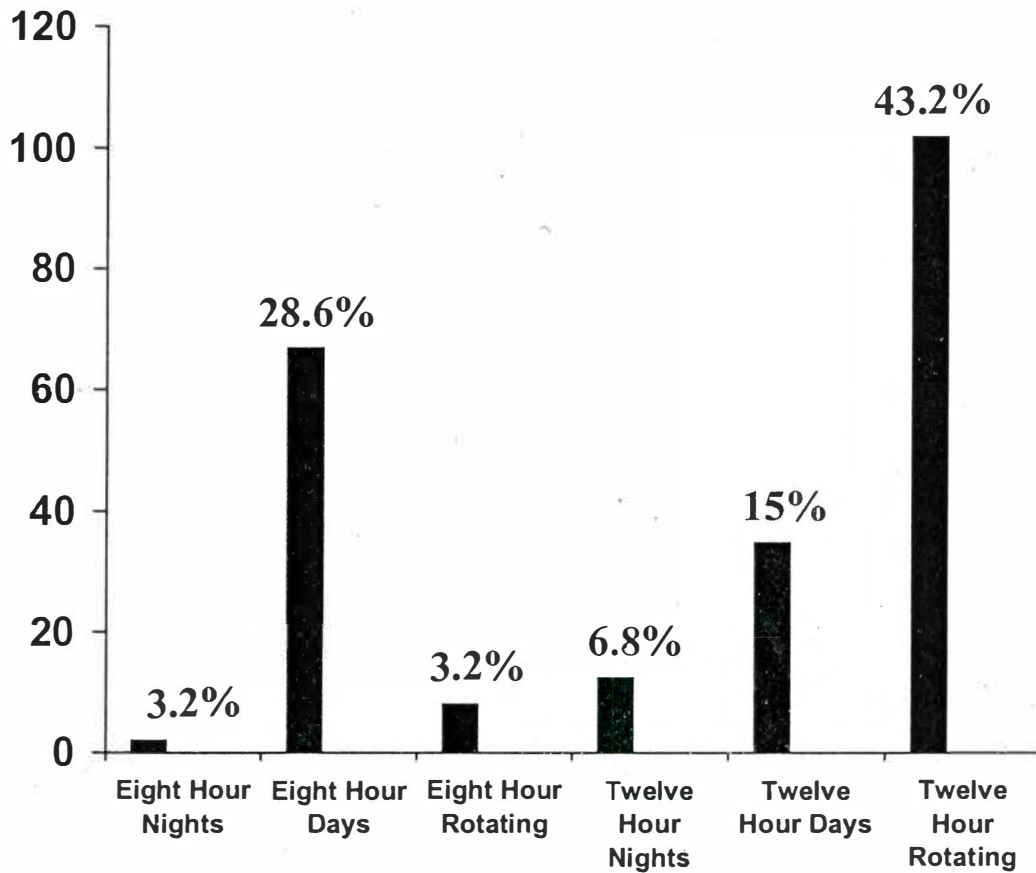


Figure 6. Histogram of the shift preference demographic data.

preferred twelve hour day shifts, and 109 (43.2%) that preferred twelve hour rotating shifts.

Instrumentation

The OWEI was used to collect the data for this study (see Appendix D). This instrument consisted of four subscales (*dependable*, *considerate*, *ambitious*, *cooperative*) that were analyzed independently to represent the sub-components of work ethic. The following are the results of mean scores and standard deviation scores for Loudon Mill and Neenah Nonwovens by the four subscales (*dependable*, *considerate*, *ambitious*, *cooperative*). These results are represented in Table 2.

The following results are Cronbach's reliability coefficients for each of the five subcategories. Questions number 1, 7, 8, 9, 12, 14, 16, 18, 19, 21, 22, 23, 40, 41, 45, and 48 belonged to the *dependable* subscale. These questions had an alpha that equaled .8495. Questions for the *ambitious* subscale included 5, 6, 10, 13, 20, 26, 27, 30, 33, 36, 38, and 49. The reliability coefficients for this subcategory had an alpha that equaled .505, which is unusually low for a score of reliability for this subscale. Next, the *considerate* subscale contained questions 17, 24, 25, 28, 29, 31, 34, 37, 39, 42, 43, 46, 47, and 50. The reliability coefficients for these questions had an alpha that equaled .8826. Questions number 2, 3, 4, 15, 32, 35, and 44 were in the subscale *cooperative*. The reliability coefficient alpha for this subcategory was equal to .7660. Finally, the last subcategory contained questions pertaining to self-efficacy. The information mentioned above is summarized in Table 3.

Table 2

Mean Scores and Standard Deviation Scores for Loudon and Neenah

Loudon Mill and Neenah Nonwovens		
	Mean	SD
Dependable	5.78	.54342
Cooperative	5.49	.62833
Ambitious	4.77	.42747
Consideration	5.60	.68457

Note. SD = Standard Deviation

Table 3

Cronbach's Alpha for items in subscales

	Dependable	Ambitious	Considerate	Cooperative
Questions	1, 7, 8, 9, 12, 14, 16, 18, 19, 21, 22, 23, 40, 41, 45, 48	5, 6, 10, 13, 20, 26, 27, 30, 33, 36, 38, 49	17, 24, 25, 28, 29, 31, 34, 37, 39, 42, 43, 46, 47, 50	2, 3, 4, 15, 32, 35, 44
Cronbach's Alpha	.8495	.5050	.8826	.7660

Findings for Ho₁

Ho₁: There are no significant differences in work ethic between machine operators in the self-directed work team manufacturing facility and machine operators in the manufacturing facility that utilizes conventional work groups as measured by the OWEI.

A uni-variate analysis of variance established that there was a significant difference between machine operators in the self-directed work team manufacturing facility and machine operators in the manufacturing facility that utilizes conventional work groups based on the four subscales of *dependable*, *considerate*, *ambitious*, and *cooperative*. A significance level less than .05 was needed to be considered as a significant difference in the data. *Dependable* yielded an F value of 64.406 and a significance level of .000. With regard to *ambitious* UNIANOVA produced an F value of 16.752 and a significance level of .000. Next, *considerate* revealed an F value of 16.896 and a significance level of .000. Finally, the *cooperative* scale showed an F value of 20.003, while the significance was at .000. Therefore, there are significant differences in work ethic between machine operators in the self-directed work team manufacturing facility and machine operators in the manufacturing facility that utilizes conventional work groups based on the four subscales (*dependable*, *considerate*, *ambitious*, *cooperative*) of the OWEI. Therefore, the null hypothesis Ho₁ was rejected. These findings are summarized in Table 4.

Findings for Ho₂

Ho₂: There are no significant differences in work ethic between all machine operators based on the demographic variables age, gender, years of full-time work experience, and level of education.

The UNIANOVA was utilized to determine differences in work ethic between all machine operators in this study based on demographic variables. These findings are summarized in Table 5. The demographic variable of age reported the only significant difference based on the *considerate* subscale with an F value of 3.361 and a significance level of .02. The Tukey Honestly Significant Difference (HSD) post hoc test was administered to further explore these differences by multiple comparisons between items. A difference was considered significant based on a level less than .05. The Tukey HSD examined the subscale of *considerate* based on the demographic variable of age for significant differences and upon conclusion a difference was found between the 27 – 35 and 36 – 55 age ranges. Therefore, the null hypothesis was rejected.

Findings for Ho₃

Ho₃: There is no significant interaction of work ethic between machine operators from the self-directed work team manufacturing facility and the traditional manufacturing facility by demographic variables.

UNIANOVA was again used to identify any differences between machine operators from the self-directed work team manufacturing facility and the traditional manufacturing facility based on the six demographic variables used in this study. The

Table 4

UNIANOVA significant differences of work ethic between machine operators

	Dependable	Cooperative	Ambitious	Considerate
Sig	.000	.000	.000	.000
F value	64.406	20.003	16.752	16.896

Table 5

Findings for item subscales

		Gender	Age	Level of Education	Years of Work Experience	Years of Experience as a Supervisor	Shift Preference
Dep	Sig	.385	.324	.988	.882	.883	.829
	F value	.757	1.166	.083	.126	.220	.428
Co	Sig	.684	.498	.809	.822	.699	.795
	F value	.166	.795	.399	.196	.476	.475
Am	Sig	.567	.371	.547	.498	.569	.936
	F value	.328	1.049	.768	.700	.674	.257
Con	Sig	.571	.020*	.535	.244	.852	.490
	F value	.322	3.361	.787	1.421	.264	.888

Note. Dep = Dependable, Co = Cooperative, Am = Ambitious, Con = Considerate

* Denotes a significant difference base on a prescribed level of less than .05 significance.

researcher attempted to break the demographic variables down into the four subscales (*dependable, considerate, ambitious, cooperative*) to test for significance. A demographic variable with a prescribed significance level of .05 or less would be considered a significant difference. There were no significant interactions between machine operators from the self-directed work team manufacturing facility and the traditional manufacturing facility by the six demographic variables. These findings are summarized in Table 6. Therefore, the null hypothesis H_{03} was accepted.

Table 6

Considerate based on age

Years of Experience	Comparison Group	Significance Level
20 - 26	27 - 35	.993
	36 - 55	.387
	Over 55	.910
27 - 35	20 - 26	.993
	36 - 55	.008*
	Over 55	.916
36 - 55	20 - 26	.387
	27 - 35	.008*
	Over 55	.772
Over 55	20 - 26	.910
	27 - 35	.916
	36 - 55	.772

* Denotes a significant difference based on a level of less than .05.

Chapter V

Summary, Conclusions, and Recommendations

Introduction

This chapter provides a synopsis regarding the researcher's findings pertaining to the data results from chapter four. The objectives of this study were to determine differences in work ethic between machine operators in a self-directed work team manufacturing facility and machine operators in a traditional work system manufacturing facility. Work ethic was measured by using the four subscales (*dependable, considerate, ambitious, cooperative*) of the Occupational Work Ethic Inventory (OWEI). Also, work ethic based on the six demographic variables was examined (see Appendix D). This chapter contains a brief summary of the study, discussion, conclusions, and the researcher's recommendations based on the data collected during this study.

Summary

This study focused on comparing the differences in work ethic between machine operators in a self-directed work team manufacturing facility, Kimberly-Clark Loudon Mill, and machine operators in a traditional work system manufacturing facility, Kimberly-Clark Neenah Nonwovens. The work ethic of respondents were compared by four subscales (*dependable, ambitious, considerate, cooperative*). Work ethic was also examined by using six different demographic variables (age, gender, educational level, years of full-time work experience, years of supervisory experience, and shift preference).

The review of literature revealed a number of studies that explored the effects of self-directed work teams on numerous variables. These variables included job satisfaction, absenteeism, autonomy, safety, trust in management, and productivity. The review of literature revealed a general trend of positive impact of self-directed work teams on these variables. However, the review of literature did not reveal any studies that explored the relationship between work ethic and self-directed work teams.

Three null hypotheses were developed for the purpose of this study. The first stated that there are no significant differences in work ethic between machine operators in the self-directed work team manufacturing facility and machine operators in the manufacturing facility that utilizes conventional work groups. The second hypothesis stated that there are no significant differences in work ethic between all machine operators based on the demographic variables age, gender, years of full-time work experience, and level of education. The third hypothesis stated that there is no significant interaction of work ethic between machine operators from the self-directed work team manufacturing facility and the traditional manufacturing facility by demographic variables.

The participants of this study were full-time Kimberly-Clark machine operators at the Loudon, Tennessee and Neenah Wisconsin manufacturing facilities. Each machine operator was asked to complete the OWEI instrument. The OWEI was modified for the purpose of this study to help identify the population based on the six demographic descriptors (age, gender, level of education, years of full time work experience, years of supervisory experience, and work shift preference).

The population consisted of 396 full-time machine operators at two Kimberly-Clark manufacturing facilities. Organizational constraints forced the researcher to collect data two different ways. The surveys for machine operators at the Loudon facility were collected in person by the researcher because of their availability from their morning and evening shift change meetings. The surveys at the Neenah facility were collected by a representative from the Neenah facility's Human Resources department during their teams meetings. The survey consisted of 50 descriptors with six demographic questions. The 50 descriptors comprised four separate subscales: (a) *dependable*, (b) *considerate*, (c) *ambitious*, and (d) *cooperative*. The Neenah facility returned 83 out of a possible 146 responses, a return rate of 57%. The Loudon facility produced 169 out of a 250 possible responses, a return rate of 68%. Of the 396 possible respondents, 252 completed a survey yielding a 64% overall response rate. The response rate can be attributed to incentives, a partnership with the Neenah Human Resources department and collecting the surveys in person in the Loudon facility.

Chapter four reported the analysis of respondents' data using a uni-variate analysis of variance (UNIANOVA). The purpose of this study was to determine any subsequent differences that may have existed between machine operators in a self-directed work team manufacturing facility and machine operators in a traditional work system manufacturing facility based on work ethic. A significant difference was indicated across all four subscales (*dependable*, *considerate*, *ambitious*, *cooperative*) of the OWEI. The UNIANOVA was also used to determine if any significant differences existed between machine operators in a self-directed work team manufacturing facility and

machine operators in a traditional work system manufacturing facility with regards to the demographic data that were collected. Subsequently, no significant differences were ascertained. The UNIANOVA was then used to determine if there were any significant differences in work ethic between all machine operators based on the demographic variables. A significant difference was found, therefore these differences were explored further with the Tukey Honestly Significant Difference (HSD) post hoc test. The frequencies were reported along with percentages to better understand the data. One area of caution for these results is that the *ambitious* subscale had a very low reliability score of .505 on the Cronbach's Alpha.

Discussion

Two of the three null hypotheses were rejected based on the data collected in this study. The first null hypothesis was rejected based on significant differences found between the two manufacturing facilities studied on all four subscales of the OWEI. The second null hypothesis was rejected based on significant differences found on the considerate subscale of the OWEI between two age ranges from the demographic data collected.

Based on previous studies that found positive relationships between desirable employee characteristics and personal behavior, it was assumed by this researcher that the self-directed work team facility used in this study would score higher on the OWEI than the traditional work system facility. Another reason to expect a higher OWEI score at the self-directed work team facility is that the Loudon Mill facility is regarded as the lowest cost producer of consumer goods in the professional sector within Kimberly-Clark

Corporation. That is why the findings of this study are somewhat puzzling to this researcher. The machine operators at Kimberly-Clark Loudon Mill, a self-directed work team facility, surprisingly scored lower on work ethic as measured by all four subscales of the OWEI than the traditional work systems facility, Neenah Nonwovens Mill. This researcher developed two possible explanations for these findings.

The first explanation is based on the fact that the OWEI records self-reported scores of work ethic. In essence, the OWEI measures how individuals perceive how hard they work. This study's results may indicate that the Loudon Mill employees do not perceive themselves as working hard or having a high level of work ethic due to the collegial and team oriented work structure and diversified tasks with which they work. Shared responsibilities and rotating work roles may cause the machine operators in the self-directed work team environment to disassociate themselves with the descriptors used in the OWEI to measure work ethic. Whereas, the Neenah Nonwovens employees may perceive themselves as working extremely hard due to identifying with fewer skill sets, not being team oriented, and being focused on accomplishing one task or process. The traditional work systems machine operators may more closely identify with the descriptors used in the OWEI to measure work ethic.

The second possible explanation for the unexpected findings involves cultural and geographical differences that may have confounded the data collected in this study. Originally, this study was planned to focus on two Kimberly-Clark facilities located in the southeast. These two facilities would have machine operators with similar cultural and geographical backgrounds. However, due to circumstances beyond the researcher's

control access was granted by company officials to two facilities that are located in two different geographical regions.

Loudon, Tennessee and Neenah, Wisconsin are similar in that they are both small towns. However, there are presumably numerous cultural differences in regards to religion, education, family, leisure, history, tradition, and reasons to work. The descriptors used in the OWEI are not accompanied by definitions, examples, or explanations. Cultural differences could affect how the individuals completing the OWEI surveys perceive themselves and the descriptors on which they were asked to rate themselves.

The 27 – 35 age group scored significantly higher than the 36 – 55 age group on the *considerate* subscale. The difference in scores on the *considerate* subscale by age may indicate generation specific attitudes and values. The 36 – 55 age range represents a large portion of the baby boomer generation. The baby boomer generation has been in the workforce through bad labor markets, corporate downsizing, poor economic environments, military conflicts, and work structures that valued individual achievement. These individuals have been established in the work force, owned homes, been married, had children, and are focused on issues unique to the 36 – 55 age group. The 27 – 35 age group closely follows generation x. Generation x has entered the workforce at a time when companies value teamwork, group decision making, and interpersonal rapport. The individuals in this age group are working to establish careers, enter into marriage, have children, buy homes, and are focused on issues that are unique to 27 – 55 age group. These two groups are in different places in the human life cycle which may directly affect

their perceptions, attitudes, and values which in turn would affect their responses to the descriptors in the OWEI.

Conclusions

The conclusions reached from this study were:

1. Loudon Mill, a self-directed work team manufacturing facility, scored lower than Neenah Nonwovens, a traditional work system manufacturing facility, on all four subscales (*dependable, considerate, ambitious, cooperative*) of the OWEI.
2. The data showed a significant difference exists on the *considerate* subscale of the OWEI between the 27 – 35 and the 36 – 55 age groups. The 27 – 35 group scored significantly higher than the 36 – 55 age group on the *considerate* subscale.
3. There was no significant difference in work ethic between Loudon Mill and Neenah Nonwovens based on demographic variables.

Recommendations

The researcher makes the following recommendations based on the findings and conclusions generated in this study:

1. The geographical and cultural differences that exist in this study based on the location of the manufacturing facilities may have caused some uncontrolled for effects. The researcher recommends replicating this study in more geographically and culturally similar settings.

2. The review of literature revealed a great deal of research on self-directed work teams that indicated numerous advantages over traditional work systems based on various variables such as performance, job satisfaction, and autonomy. This study indicated a lower work ethic score for a self-directed work team facility than a traditional work system facility. The researcher recommends a study that would determine if there is a correlation between work ethic and those aforementioned variables.
3. The results of this study indicate a significant difference on the *considerate* subscale of the OWEI between the 27 – 35 and the 35 – 55 age groups. The 27 – 35 classification closely follows generation x and the 35 – 55 age range represents the baby boomer generation. The researcher recommends further study of this phenomenon based on this apparent generational difference.
4. This study utilized a self-directed work team facility that is well respected within Kimberly-Clark for outstanding profitability and production. It is known as a benchmark for self-directed work teams that other Kimberly-Clark facilities wish to emulate. However, this study indicated that the Loudon Mill facility scored lower on measure of work ethic than the Neenah Nonwovens Mill, a traditional work system manufacturing facility. The researcher recommends further study of work ethic as it relates to profitability and production in self-directed work team manufacturing facilities to see if this is a valuable indicator of manufacturing success.

References

- Appelbaum, E., Bailey, T., Berg, P. & Kalleberg, A.L. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Ithaca, New York: Cornell Paperbacks.
- Barker, J.R. (1993). Tightening the iron cage. Concertive control in self-managing teams. *Administrative Science Quarterly*, 38, 408-437.
- Barker, J.R. & Tompkins, P.K. (1994). Identification in the self-managing organizations: Characteristics of target and tenure. *Human Communication Research*, 21, 223-240.
- Beekun, R.L. (1989). Assessing the effectiveness of socio-technical interventions: Antidote or fad? *Human Relations*, 10, 877-897.
- Buchholz, R.A. (1978). The work ethic reconsidered. *Industrial and Labor Relations Review*, 31, 450-459.
- Buchholz, S. & Roth, T. (1987). *Creating the high-performance team*. New York: John Wiley & Sons, Inc.
- Burawoy, M. (1979). *Manufacturing consent. Changes in the labor process under monopoly capitalism*. Chicago: University of Chicago Press.
- Bee.H.L. (1996). *The journey in adulthood*. Upper Saddle River, N.J.: Prentice-Hall, Inc.
- Blood, M. (1969). Work values and job satisfaction. *Journal of Applied Psychology*, 53, 456-459.
- Cordery, J.L., Mueller, W.S., & Smith, L.M. (1991). Attitudinal and behavioral effects of autonomous group working: A longitudinal field study. *Academy of Management Journal*, 34(2), 464-476.

- Cotton, J.L. (1993). *Employee involvement*. Newbury Park, California: Sage Publications.
- Cummings, T.G. (1978). Self-regulating work groups: A socio-technical synthesis. *Academy of Management Review*, July, 625-634.
- Cummings, T.G. & Maloy, E.S. (1977). *Improving productivity and the quality of work life*. New York: Praeger.
- Dachler, H.P. & Wilpert, B. (1978). Conceptual dimensions and boundaries of participation in organizations: A critical evaluation. *Administrative Science Quarterly*, 23, 1-39.
- Dawson, M. (1999). *A construct validity assessment of the Occupational Work Ethic Inventory* (Doctoral dissertation, University of Tennessee, 1999). Dissertation Abstracts International, 60, 2764.
- Denison, D.R. (1982). Socio-technical design and self-managing work groups: The impact on control. *Journal of Organizational Behavior*, 3, 297-314.
- Dunkerly, D. (1975). *Occupations and society*. Boston: Routledge & Kegan Paul.
- Emery, F.E. & Trist, E.L. (1969). Socio-technical systems. In F.E. Emery (Ed.), *Systems Thinking*. London: Penguin.
- Feldman, D.C. (1981). The multiple socialization of organization members. *Academy of Management Review*, 6, 309-318.
- Fisher, K. & Fiser, M.D. (1998). *The distributed mind*. New York: AMACOM.
- Foulkes, F. (1980). *Personnel policies in large non-union companies*. Englewood Cliffs, N.J.: Prentice-Hall.

- Furnham, A. (1990). A content, correlational, and factor analytic study of seven questionnaire measures of the protestant work ethic. *Human Relations*, 43(4), 383-399.
- Furnham, A. & Koritsas, E. (1990). The protestant work ethic and vocational preference. *Journal of Organizational Behavior*, 11, 43-55.
- Gable, R.K. (1972). Test review: D.E. Super. Work Values Inventory. Boston: Houghton Mifflin, 1970. *Journal of Counseling Psychology*, 19, 565-568.
- Gibson, M.K. & Papa, M.J. (2000). The mud, the blood, the beer guys: Organizational osmosis in blue-collar groups. *Journal of Applied Communication Research*, February.
- Goldstein, B. & Eichhorn, R.L. (1961). The changing Protestant ethic: Rural patterns in health, work, and leisure. *American Sociological Review*, 26, 557-565.
- Gulowsen, J. (1972). A measure of work group autonomy. In L.E. Davis & J.C. Taylor (Eds.), *Design of jobs*: 374-390. Harmondsworth, U.K.: Penguin.
- Hackman, J.R. & Oldham, G.R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hall, G.S. (1990). Work attitudes of traditional and non-traditional technical community college students. (Master of Science thesis, the University of Tennessee, Knoxville, 1990).
- Hall, G.S. (1991). Do older college students have different attitudes about work as compared with younger traditional students. *Tennessee Education*, 21(2), 27-29.
- Halle, D. (1984). *America's working man: Work, home, and politics among blue-collar property owners*. Chicago: University of Chicago Press.

- Hammond, P.E. & Williams, K.R. (1976). The Protestant Ethic thesis: A social psychological assessment. *Social Forces*, 54(3), 579-589.
- Hareven, T. & Langenbach, R. (1978). *Amoskeag: Life and work in an American factory city*. New York: Pantheon.
- Herbst, P.G. (1962). *Autonomous group functioning*. London: Tavistock.
- Hill, R.B. (1992). *The work ethic as determined by occupation, education, age, gender, work experience, and empowerment* (Doctoral dissertation, University of Tennessee, 1992). Dissertation Abstracts International, 53, 2343.
- Hill, R.B. & Petty, G.C. (1995). *A new look at employability skills: A factor analysis of the occupational work ethic*. *Journal of Vocational Education Research*, 20(4), 59-71.
- Ho, R. (1984). Development of an Australian work ethic scale. *Australian Psychologist*, 19, 321-332.
- Jablin, F.M. (1982). Organizational communication: An assimilation approach. In M.E. Roloff & C.R. Berger (Eds.), *Social cognition and communication* (pp. 255-286). Newbury Park, CA: Sage.
- Jablin, F.M. (1984). Assimilating new members into organizations. In R.N. (Ed.), *Communciation yearbook 8* (pp. 594-626). Beverly Hills, CA: Sage.
- Jablin, F.M. (1985). An exploratory study of vocational organizational communication socialization. *Southern Speech Communication Journal*, 50, 261-282.

- Jablin, F.M. (1987). Organizational entry, assimilation, and exit. In F.M. Jamblin, L.L. Putnam, K.H. Roberts, & L.W. Porter (Eds.), *Handbook of organizational communication* (pp. 679-740). Beverly Hills, CA: Sage.
- Kanasas, H.C. (1978). *Affective work competencies for vocational education*. Columbia, MO: University of Missouri.
- Kemp, N.J., Wall, T.D., Clegg, C.W., & Corderly, J.L. (1983). Autonomous work groups in a greenfield site: A comparative study. *Journal of Organizational Psychology*, 56, 271-288.
- Kimberly-Clark Corporation. (2001, March). Annual report. Dallas, TX: World Headquarters, Kimberly-Clark Corporation.
- Lawler, E. (1978). The new plant revolution. *Organizational Dynamics*. Winter.
- Levering, R. & Moskowitz, M. (2002). The 100 best companies to work for. *Fortune*, 145(3), 60-68.
- Maslow, A.H. (1968). *Toward a psychology of being* (2nd Edition). New York: Van Nostrand-Reinfeld.
- Maslow, A.H. (1970). *Motivation and personality* (2nd Edition). New York: Harper and Row.
- Miller, D. (1980). Differences in the protestant work ethic values of selected freshman and senior students at a land grant university. (Doctor of Philosophy dissertation, Oregon State University, 1980).
- Mirels, H.L. & Garrett, J.B. (1971). The protestant work ethic as a personality variable. *Journal of Consulting and Clinical Psychology*, 36, 40-44.

- Montgomery, D. (1979). *Workers' control in America, studies in the history of work technology, and labor struggles*. Cambridge: Cambridge University Press.
- Morse, N.C. & Reimer, E. (1956). The experimental change of a major organizational variable. *Journal of Abnormal and Social Psychology*, 52, 120-129.
- Ondrack, D.A. & Evans, M.G. (1987). Job enrichment and job satisfaction in greenfield and redesign QWL sites. *Group and Organizational Studies*, 12, 5-22.
- Orsburn, J.D., Moran, L., Musselwhite, E., Zenger, J., and Perrin, C. (1990). *Self-directed work teams: The new American Culture*. Homewood, Illinois: Business One Irwin.
- Papa, M.J., Auwal, M.A. & Singhal, A. (1997). Organizing for social change within concertive control systems: Member identification, empowerment, and the making of discipline. *Communication Monographs*, 64, 1-31.
- Pasmore, W.A. (1978). The comparative impacts of socio-technical system, job redesign, and survey-feedback interventions. In W.A. Pasmore & J.J. Sherwood (Eds.), *Socio-technical systems: A sourcebook* (pp. 291-301). La Jolla, CA: University Associates.
- Pasmore, W.A., Francis, C., & Halderman, J. (1982). Socio-technical systems: A North American reflection on empirical studies of the seventies. *Human Relations*, 35, 1179-1204.
- Pearce, J.A. & Ravlin, E.C. (1987). The design and activation of self-regulating work groups. *Human Relations*, 40, 751-782.

Petty, G.C. (1991). *Development of the Occupational Work Ethic Inventory*.

Unpublished manuscript, The University of Tennessee.

Petty, G.C. (1995). Adult in the work force and the occupational work ethic. *Journal of Studies in Technical Careers*, 25(3), 133-140.

Petty, G.C. & Morgan, K.R. (1980). *Teaching strategies to facilitate students acquisition of affective work competencies* (Project No. 80-131-600-7). Columbia, MO: University of Missouri-Columbia, Department of Education.

Ray, J. (1982). The protestant work ethic in Australia. *Journal of Social Psychology*, 22, 72-80.

Rodgers, D. (1978). *The work ethic in industrial America: 1850 – 1920*. Chicago: University of Chicago Press.

Rose, M. (1985). *Reworking the work ethic: Economic values and socio-cultural politics*. London: Schocken.

Schein, E.H. (1968). Organizational socialization and the profession of management. *Industrial Management Review*, 9, 1-16.

Schrank, R. (1974). On ending worker alienation: The Gaines pet food plant. In R. Fairfield (Ed.), *Humanizing the workplace* (pp. 119-140). New York: Prometheus.

Schwimmer, E. (1980). The limits of the economic ideology: A comparative anthropological study of work concepts. *International Social Science Journal*, 32.

- Srivasta, S., et al. (1975). *Job satisfaction and productivity: An evaluation of policy-related research on productivity, industrial organization and job satisfaction: Policy development and implementation*. Cleveland: Case Western Reserve University.
- Stone, Katherine. (1974). The origins of job structures in the steel industry. *Review of Radical Political Economics*, 6, 113-173.
- Sundstrom, E. (1999). *Supporting work team effectiveness*. San Francisco: Jossey-Bass Publishers.
- Super, D.E. (1969). *The work inventory*. Boston: Houghton Mifflin.
- Super, D.E. (1982). The relative importance of work: Models and measures for meaningful data. *The Counseling Psychologist*, 10(3), 95-103.
- Susman, G.I. (1976). *Autonomy at work: A socio-technical analysis of participative management*. New York: Praeger.
- Thompson, E. (1966). *The making of the English working class*. New York: Vintage Books.
- Tilgher, A. (1930). *Homo faber: Work through the ages*. Translated by D.C. Fisher. New York: Harcourt Brace.
- Touraine, Alan. (1974). The end of the road for the skilled worker. In Shorter, E. (Ed). *Work and community in the west*, ed. Edward Shorter. New York: Harper & Row.

- Tompkins, P.K. & Cheney, G. (1985). Communication and unobtrusive control in contemporary organizations. In R.D. Mcphee & R.K. Tompkins (Eds.), *Organizational communication: Traditional themes and new directions* (pp. 179-210). Newbury Park, CA: Sage.
- Trist, E.L. (1981). The socio-technical perspective. In A.H. Van de Ven & W.F. Joyce (Eds.). *Perspectives on organization design and behavior* (pp. 19-75). New York: John Wiley.
- Trist, E.L., Higgin, G.W., Murray, J., & Pollock, A.B. (1963). *Organizational choice*. London: Tavistock.
- Trist, E.L., Susman, G. I., & Brown, G.R. (1977). An experiment in autonomous working in and American underground coal mine. *Human Relations*, 30, 201-236.
- Trist, E.L. (1981). The socio-technical perspective. In A.H. Van de Ven & W.F. Joyce (Eds.). *Perspectives on organization design and behavior* (pp. 19-75). New York: John Wiley.
- Van Maanen, J. (1976). Breaking-in: Socialization to work. In R. Dublin (Ed.), *Handbook of work, organization, and society* (pp.67-130). Chicago: Rand McNally.
- Walters and Zakrajsek. (1991). The construct validity of four protestant ethic attitude scales. *Educational and Psychological Measurement*, 51, 117-122.
- Walton, R.E. (1972). How to counter alienation in the plant. *Harvard Business Review*, 50, 70-81.

- Walton, R.E. (1979). Work innovation in the United States. *Harvard Business Review*, 57.
- Wall, T.D., & Clegg, C.W. (1981). A Longitudinal field study of group work redesign. *Journal of Organizational Behavior*, 2, 31-49.
- Wall, T.D., Kemp, N.J., Jackson, P.R., & Clegg, C.W. (1986). Outcomes of autonomous workgroups: A long-term field experiment. *Academy of Management Journal*, 29, 280-304.
- Wayne, F.S. (1989). An instrument to measure adherence to the protestant work ethic and contemporary work values. *Journal of Business Ethics*, 8, 793-804.
- Weber, M. (1958). *The protestant work ethic and the spirit of capitalism*. New York: Charles Scribner's Sons.
- Wright, B.M. & Barker, J.R. (2000). Assessing concertive control in the team environment. *Journal of Occupational and Organizational Psychology*, 73, 345-361.
- Zaleznik, A., Christensen, C.R., & Roethlisberger, F.J. (1958). *The motivation, productivity, and satisfaction of workers: A predictive study*. Boston: Harvard University, Division of Research, Graduate School of Business Administration.
- Zuboff, S. (1983). The work ethic and work organizations. In J. Barbash, R.J. Lampaman, S.A. Levitan, & G Tyler (Eds.). *The work ethic – A critical analysis* (pp.153-181). Madison: University of Wisconsin. Industrial Relations Research Association.

Appendixes

Appendix A

Letters of Permission

Dear Mr. Stephen King:

My thesis committee wishes for me to obtain written permission from you to use the OWEI (Occupational Work Ethic Inventory) instrument at the Neenah Nonwovens facility. Therefore, I am requesting that you read the statement below and sign in the blank provided.

Thank you,

Johnny Fontan
Johnnynole@hotmail.com
(865) 384-7009
4819 Sunflower Road, Apt. 97
Knoxville, TN 379009

I, Stephen King, give Johnny Fontan permission to conduct research about work ethic and traditional work systems at the Neenah Nonwovens facility for the purpose of his Masters of Science thesis study.


Stephen King – Mill Manager

Dear Mr. Bill Rowe:

My thesis committee wishes for me to obtain written permission from you to use the OWEI (Occupational Work Ethic Inventory) instrument at the Loudon Mill facility. Therefore, I am requesting that you read the statement below and sign in the blank provided.

Thank you,

Johnny Fontan
Johnnynole@hotmail.com
(865) 384-7009
4619 Sunflower Road, Apt. 97
Knoxville, TN 379009

I, Bill Rowe, give Johnny Fontan permission to conduct research about work ethic and self-directed work teams at the Loudon Mill facility for the purpose of his Masters of Science thesis study.

W & Rowe
Bill Rowe – Mill Manager

Appendix B
Human Subjects Form A

FORM A

IRB # _____

Certification for Exemption from IRB Review for Research Involving Human Subjects

A. PRINCIPAL INVESTIGATOR(s) and/or CO-PI(s): (For student projects, list both the student and the advisor.)

Johnny Fontan, Student

Dr. Gregory C. Petty, Advisor

B. DEPARTMENT:

Department of Human Resource Development

C. COMPLETE MAILING ADDRESS AND PHONE NUMBER OF PI(s) and CO-PI(s):

Johnny Fontan
4619 Sunflower Road, Apt. 97
Knoxville, TN 37909
(865) 384-7009

Dr. Gregory C. Petty
310 Jessie Harris Building
Knoxville, TN 37996-1900
(865) 974-2574

D. TITLE OF PROJECT:

The Effects of Self-Directed Work Teams on Work Ethic

E. EXTERNAL FUNDING AGENCY AND ID NUMBER (if applicable):

N/A

F. GRANT SUBMISSION DEADLINE (if applicable):

N/A

G. STARTING DATE: (NO RESEARCH MAY BE INITIATED UNTIL CERTIFICATION IS GRANTED.)

July 6, 2002

H. ESTIMATED COMPLETION DATE (Include all aspects of research and final write-up.):

77

August 1, 2002

I. RESEARCH PROJECT:

1. Objective(s) of Project (Use additional page, if needed.):

The objective of this project is to determine if self-directed work teams have an effect on work ethic as measured by the Occupational Work Ethic Inventory (OWEI) as developed by Dr. Gregory C. Petty.

2. Subjects (Use additional page, if needed.):

The subjects will be 396 machine operators at Kimberly-Clark Corporations Loudon, TN and Neenah, WI manufacturing facilities. The Loudon facility utilizes self-directed work teams. The Neenah facility utilizes a traditional work structures.

3. Methods or Procedures (Use additional page, if needed.):

The subjects will be asked to complete the Occupational Work Ethic Inventory (OWEI) survey instrument. The surveys will be distributed and completed during team meetings. Participants in this study will remain completely anonymous. The data will be compiled and analyzed using a UNIANOVA, Tukey Honestly significant difference (HSD) post hoc test, and Cronbach's Alpha.

4. CATEGORY(S) FOR EXEMPT RESEARCH PER 45 CFR 46 (see reverse side for categories): 2

J. CERTIFICATION: The research described herein is in compliance with 45 CFR 46.101(b) and presents subjects with no more than minimal risk as defined by applicable regulations.

Principal

Investigator

Johnny Fontan

Name

Johnny Fontan

Signature

6/27/02

Date

Student

Advisor

GREGORY PETTY

Name

GREGORY PETTY

Signature

6/27/02

Date

Dept. Review

Comm. Chair

Sharon J. Bartley

Name

Sharon J. Bartley

Signature

7-8-02

Date

APPROVED:

Dept.

Head

Michael Lane Harris

Name

Michael Lane Harris

Signature

7/5/02

Date

COPY OF THIS COMPLETED FORM MUST BE SENT TO COMPLIANCE OFFICE IMMEDIATELY UPON COMPLETION.

Appendix C
Occupational Work Ethic Inventory
Instrument

DIRECTIONS

For each work ethic descriptor below, CIRCLE THE NUMBER that most accurately describe your standards for that item. There are seven possible choices for each item:

Never	Almost Never	Seldom	Sometimes	Usually	Almost Always	Always
1	2	3	4	5	6	7

THERE ARE NOT RIGHT OR WRONG ANSWERS. There also is no time limit, but you should work as rapidly as possible. Please respond to every item on the list.

At work or school I can describe myself as:

Descriptors	Never				Always		
	1	2	3	4	5	6	7
1. dependable	1	2	3	4	5	6	7
2. stubborn	1	2	3	4	5	6	7
3. following regulations.....	1	2	3	4	5	6	7
4. following directions.....	1	2	3	4	5	6	7
5. independent.....	1	2	3	4	5	6	7
6. ambitious.....	1	2	3	4	5	6	7
7. effective.....	1	2	3	4	5	6	7
8. reliable.....	1	2	3	4	5	6	7
9. tardy.....	1	2	3	4	5	6	7
10. initiating.....	1	2	3	4	5	6	7
11. perceptive.....	1	2	3	4	5	6	7
12. honest.....	1	2	3	4	5	6	7
13. irresponsible.....	1	2	3	4	5	6	7
14. efficient.....	1	2	3	4	5	6	7

15. adaptable.....1 2 3 4 5 6 7
16. careful.....1 2 3 4 5 6 7
17. appreciate.....1 2 3 4 5 6 7
18. accurate.....1 2 3 4 5 6 7
19. emotionally stable.....1 2 3 4 5 6 7
20. conscientious.....1 2 3 4 5 6 7
21. depressed.....1 2 3 4 5 6 7
22. patient.....1 2 3 4 5 6 7
23. punctual.....1 2 3 4 5 6 7
24. devious.....1 2 3 4 5 6 7
25. selfish.....1 2 3 4 5 6 7
26. negligent.....1 2 3 4 5 6 7
27. persevering.....1 2 3 4 5 6 7
28. likeable.....1 2 3 4 5 6 7
29. helpful.....1 2 3 4 5 6 7
30. apathetic.....1 2 3 4 5 6 7
31. pleasant.....1 2 3 4 5 6 7
32. cooperative.....1 2 3 4 5 6 7
33. hard working.....1 2 3 4 5 6 7
34. rude.....1 2 3 4 5 6 7
35. orderly.....1 2 3 4 5 6 7
36. enthusiastic.....1 2 3 4 5 6 7

37. cheerful.....1 2 3 4 5 6 7
38. persistent.....1 2 3 4 5 6 7
39. hostile.....1 2 3 4 5 6 7
40. dedicated.....1 2 3 4 5 6 7
41. devoted.....1 2 3 4 5 6 7
42. courteous.....1 2 3 4 5 6 7
43. considerate.....1 2 3 4 5 6 7
44. careless.....1 2 3 4 5 6 7
45. productive.....1 2 3 4 5 6 7
46. well groomed.....1 2 3 4 5 6 7
47. friendly.....1 2 3 4 5 6 7
48. loyal.....1 2 3 4 5 6 7
49. resourceful.....1 2 3 4 5 6 7
50. modest.....1 2 3 4 5 6 7

BACKGROUND INFORMATION**DIRECTIONS:**

Please check the appropriate response for each item. Completion of this inventory acknowledges your understanding that this data will be used for research purposes only and will be kept completely confidential.

Gender: ☐ Female ☐ Male

Age: ☐ 26 or under ☐ 27-35 ☐ 36-55 ☐ over 55

Level of Education:

- ☐ Less than High School Diploma
- ☐ High School Degree or GED
- ☐ 2 years of College or Associate's degree
- ☐ Bachelor's Degree
- ☐ Some Graduate work

Years of Full-Time Work Experience:

- ☐ 1 or less
- ☐ 1 – 5
- ☐ 5 or more

Years of Experience as a Supervisor:

- ☐ none
- ☐ less than 2 years
- ☐ 2 – 8 years
- ☐ more than 8 years

What Type of Work Shifts Do You Prefer:

☐ 8 hour night shifts ☐ 8 hour day shifts ☐ 8 hour rotating shifts
☐ 12 hour night shifts ☐ 12 hour day shifts ☐ 12 hour rotating shi

Appendix D
Occupational Work Ethic Inventory Subscales

OCCUPATIONAL WORK ETHIC INVENTORY SUBSCALES

DEPENDABLE

- 1. dependable
- 7. effective
- 8. reliable
- 9. tardy*
- 12. honest
- 14. efficient
- 16. careful
- 18. accurate
- 19. emotionally stable
- 21. depressed*
- 22. patient
- 23. punctual
- 40. dedicated
- 41. devoted
- 45. productive
- 48. loyal

AMBITIOUS

- 5. independent
- 6. ambitious
- 10. initiating
- 13. irresponsible
- 20. conscientious
- 26. negligent*
- 27. persevering
- 30. apathetic*
- 33. hard working
- 36. enthusiastic
- 38. persistent
- 49. resourceful

CONSIDERATE

- 17. appreciative
- 24. devious*
- 25. selfish*
- 28. likeable
- 29. helpful
- 31. pleasant
- 34. rude*
- 37. cheerful
- 39. hostile*
- 42. courteous
- 43. considerate
- 46. well groomed
- 47. friendly
- 50. modest

COOPERATIVE

- 2. stubborn*
- 3. following regulations
- 1. following directions
- 11. perceptive
- 15. adaptable
- 32. cooperative
- 35. orderly
- 44. careless

VITA

Johnny E. Fontan was born on the 28th day of September 1971 to John E. Fontan and Serethia C. Fontan. After graduating from the Mississippi School for Mathematics and Science in 1990, he enrolled at Florida State University. He graduated August 1994 with a bachelor of science in Psychology. He was admitted to the Higher Education program at Florida State University and received his master of science with an emphasis in Student Affairs August of 1996. He then took a full time position with the Department of University Housing at the University of Tennessee.

While working for the university he began taking coursework in Adult Education and Human Resource Development. He was admitted into the Human Resource Development Master of Science program and will graduate in December 2002. He plans to continue his pursuits in training and education with future plans of pursuing a doctorate.