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**THE IMPACT OF FLEXIBLE WORKING HOURS: AN EMPIRICAL
INVESTIGATION**

The University of Oklahoma

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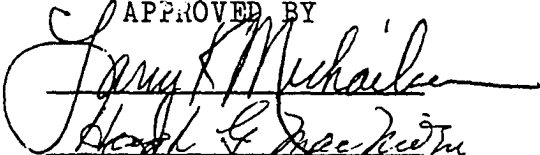



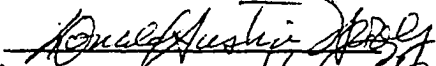
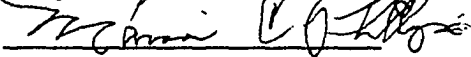
THE IMPACT OF FLEXIBLE WORKING HOURS:
AN EMPIRICAL INVESTIGATION

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF BUSINESS ADMINISTRATION

By
KENNETH L. GROSS
Norman, Oklahoma
1982

THE IMPACT OF FLEXIBLE WORKING HOURS:
AN EMPIRICAL INVESTIGATION

APPROVED BY

DISSERTATION COMMITTEE

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ABSTRACT

THE IMPACT OF FLEXIBLE WORKING HOURS:
AN EMPIRICAL INVESTIGATION

By
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The primary purpose of this research study was to investigate the relationships between the implementation of flexible working hours and measures of change in supervisory behavior, change in the motivational potential of the jobs, organizational effectiveness, employee motivation and sick leave usage. Also examined were the extent to which organizational effectiveness, employee motivation and sick leave usage were modified by changes in supervisory behavior and the nature of the jobs. The primary questions the study attempted to answer were:

1. How has the implementation of flexible working hours effected supervisory behavior, the motivational potential of jobs, organizational effectiveness, employee motivation and sick leave usage?

2. How do changes in the supervisory behavior following the implementation of flexible working hours effect organizational effectiveness, employee motivation and sick leave usage?

3. How do changes in the nature of the jobs following the implementation of flexible working hours effect organizational effectiveness, employee motivation and sick leave usage?

The subjects were 450 employees of a large southwestern military industrial complex. Sick leave usage data was obtained for the total organization. All 135 first-line supervisors with employees on flexible working hours and a sample of each first-line supervisor's employees were asked to complete a survey questionnaire. This questionnaire was developed to obtain employee perceptions of conditions since the change was made to flexible working hours.

The results were analyzed by utilizing Pearson correlation coefficients, the Student's t test and Multiple regression analysis at P .05. There was a significant reduction in sick leave usage following the implementation of flexible working hours. Supervisory behavior was changed in that the employees felt they had more freedom and fewer controls. There were significant positive changes in the motivational potential of the jobs, organizational effectiveness and employee motivation following flexible working hours implementation. There was a significant

relationship between (1) changes in supervisory behavior and the nature of the jobs and (2) organizational effectiveness and employee motivation. There was, however, no significant relationship between (1) changes in supervisory behavior and the nature of the jobs and (2) sick leave usage.

The most significant conclusions of this study suggested that organizations desiring to increase organizational effectiveness and employee motivation while reducing sick leave usage may do so by implementing flexible working hours. However, they should be aware that changes in supervisory behavior and the nature of the jobs will impact on organizational effectiveness and employee motivation.

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THE IMPACT OF FLEXIBLE WORKING HOURS:
AN EMPIRICAL INVESTIGATION

CHAPTER 1

INTRODUCTION

A hundred to a hundred and fifty years ago most Americans were employed in family-run or family-owned businesses. They were either farmers or self-employed skilled craftsmen whose work schedules were determined primarily by the seasons, weather and/or the workload. However, in the late nineteenth and early twentieth centuries most American families moved from the farm and went to work for an employer who set their work schedules (Owen, 1979).

As the work site shifted from farm or cottage, the work itself changed to involve not only the mechanization of tasks previously performed by people but also the organization of work on a machine basis. The worker's role became one of attending the needs of machines and filling in the gaps between the processes carried out by the equipment

(Swart, 1978). Under these conditions, it is easy to understand how the hours of work became extremely standardized. The employer could more easily maintain production schedules if everyone worked the same structured hours.

In recent years, a number of cultural, economic, and demographic forces have combined to lead many individuals to openly seek more flexibility in their work schedules and more meaningful work. Various authors have compiled lists of these forces (Swart, 1978; Baum and Young, 1974; Fleuter, 1975; Cohen and Gadon, 1978, Owen, 1979). Though the lists vary, there is a common thread which contains the following:

The industrial societies have reached a point where people are relatively free from a fear of economic insecurity. Productivity has increased sufficiently to allow the state to provide for the security needs of the people, through health insurance, social security, and unemployment compensation, to the extent people are not willing to merely have a job. Additionally, the nature of the jobs has changed from primarily manufacturing to service...from the interdependence of the assembly line to the independence of individual work.

The make-up of the labor force has changed dramatically. In many families no longer is the male the only, let alone the primary, wage earner. Married women in increasing numbers, presently forty-four out of one hundred,

seek work (Cohen and Gadon, 1978). Additionally, there are increasing numbers of single adult households with small children. These people have problems in adjusting their work schedules to meet the personal pressures created by the social conditions in which they live.

People are becoming better educated at an astonishing rate. Many members of the work force are pursuing education on a part-time basis. As the work force becomes increasingly educated, the employees will, in all probability, expect to have more input as to the type of work and the schedule in which that work occurs (Cohen and Gadon, 1978).

Perhaps the most important factor has been a changing attitude about work itself. No longer are people considered to be working only for the satisfaction of extrinsic values, i.e. money. There is a growing desire for self-fulfillment (doing my own thing) as well as a belief that, as human beings, people are entitled to participate in decisions which affect their jobs (Baum and Young, 1974).

Thus a number of forces are causing increased pressure on organizations to modify their positions on hours of work. These forces also cause employees to be more selective in terms of when, for how long, for whom, and how hard they are willing to work. Organizations have had to look for new ways to find employees, to keep valued employees, and to increase individual and organizational

productivity (Cohen and Gadon, 1978).

One approach available to managers is a change in the workday known as Flexitime, or flexible working hours. Flexitime (defined in greater detail later in this study) is a structural modification which gives the employee the opportunity to choose, on some time basis and within specific limits, when to start/stop work at his/her discretion, usually requiring a number of daily "core hours" during which all employees should be at work (Golembiewski and Proehl, 1978).

Need for the Study

Since its beginning in 1967 at Messerschmitt-Bolkow-Blohm GmbH, the flexible working hours concept has spread all over the world. One estimate (Glueck, 1979) is that in 1979 in the United States alone there were about 1000 organizations with approximately 500,000 employees utilizing flexitime schedules. This figure did not include the numbers of professionals already using flexitime schedules.

While organizations have recognized the changes in the demographic make-up of the work force and implemented the concept of flexible working hours to compensate for these changes, the impact of this structural intervention is not totally understood. Although numerous articles discuss the effects flexible working hours have on the organization, the individual and the community describing the impact on such items as absenteeism, tardiness, transportation, etc., the

bulk of the evidence is anecdotal (Swart, 1974; Tomasch, 1975; Louriere, 1976). Additionally, little evidence exists in the literature of the utilization of validated questionnaires to estimate attitudinal effects (Golembiewski and Proehl, 1978).

It is obvious that much more research must be done to determine the effectiveness of flexible working hours on output variables and more precise measures of the effectiveness variables must be used in these studies are the conclusions reached by one researcher (Glueck, 1979).

Managers, considering the implementaion of flexible working hours, have a need for better understanding of the impact of this change on their employees, their relationships and the organization itself. Organizations already utilizing flexible working hours might better understand why their organizations perform the way they do.

Purpose of the Study

The primary objectives of this study are to examine the impact of flexible working hours on several aspects of the organization. Specifically, the purpose of the study is to determine the extent to which flexible working hours results in:

1. Changes in supervisory behavior.
2. Changes in the nature of the jobs of the first-line supervisors and/or the non-supervisory employees.
3. Changes in organizational effectiveness.

4. Changes in the motivation of the first-line supervisors and/or the non-supervisory employees.

5. Changes in the level of use of sick leave hours.

In addition, the study will attempt to identify the extent to which:

1. Changes in supervisory behavior enhance or counteract the impact of flexible working hours on organizational effectiveness, employee motivation and sick leave usage and 2. Changes in the nature of the jobs enhance or counteract the impact of flexible working hours on organizational effectiveness, employee motivation and sick leave usage.

Organization of the Study

The study is organized into four additional chapters to accomplish the above objectives:

Chapter II provides a survey of the relevant literature pertaining to flexible working hours. The organizations which have implemented flexible working hours are identified as are the flexible working hours variations utilized by these organizations. Chapter II also discusses what is known about the impact of flexible working hours on these organizations.

Chapter III contains the description of the flexible working hours model, research questions and hypothesis, research methodology, sampling and data collection

procedures, the research instrument, and the statistical procedures for data analysis.

Chapter IV is an analysis and interpretation of the data.

Chapter V is a summary of the research findings, contains conclusions, and provides recommendations for future research.

CHAPTER II

Survey of Relevant Literature

Traditionally, the hours of work for an employee have been determined by management. The employee has been told when to start work, have lunch, and stop work. However, under the concept of flexible working hours, management no longer assumes the working day is rigidly fixed in time.

In the mid-1960's Christel Kammerer, a political economist and management consultant from the town of Koenigswinter-on-the-Rhine, determined the fixed working days with its rigid start and stop times could be replaced with a working day in which the hours of work could be flexible. Kammerer promoted this concept as a means of relieving Germany's labor shortage by bringing mothers back to work (Martin, 1975).

Alfred Hillert, personnel Manager for Messerschmitt-Bolkow-Blohm GmbH, attended a seminar on flexible hours conducted by Kammerer in 1966. In 1967 Hillert installed a flexible working hours system which added the core period idea (defined later) to relieve traffic problems and Gleitzeit (gliding time in German) or "flexitime" (flexible

working hours in English) was born (Wade, 1973).

The system was installed "experimentally" in the science and technical department with the commercial and administrative departments added two months later. On September 1, 1967, four months after its introduction, the concept was expanded to the total organization which at that time included 3000 employees.

From its inception in Germany, flexible working hours have spread throughout Europe, to Africa, Australia, Canada, Japan, South America, and the United States.

Definitions

In order to better explain the concept of flexible working hours it is necessary to define some basic terms:

Fixed Working Day - A day with fixed starting and ending times between which the employee works a fixed number of hours (Figure 1).

Flexible Working Day - A day without fixed starting and ending times, but containing flexible time periods and core time periods (Figure 2).

Core Time Periods - The periods in the middle of the day, excluding the lunch period, when all employees must be at their jobs or in official leave status.

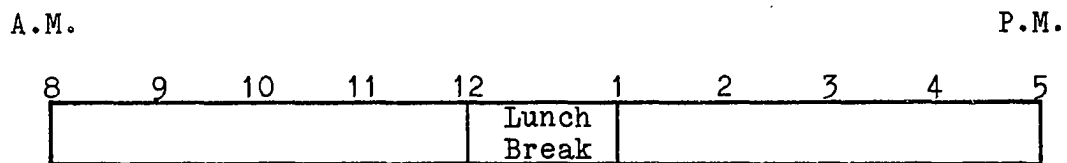
Flexible Time Periods - The periods at the beginning and ending of each day during which the employee is free to choose when he/she arrives and leaves. A flexible time period which contains the lunch period may also be

established.

Quiet Time Periods - The periods at the beginning and ending of each day during which the employee is free to choose when he/she arrives or leaves. A flexible time period which contains the lunch period may also be established.

Bandwidth - The total number of hours in the interval between the earliest beginning time and the latest ending time.

Banking - The capability of carrying forward a surplus/deficit of hours worked.

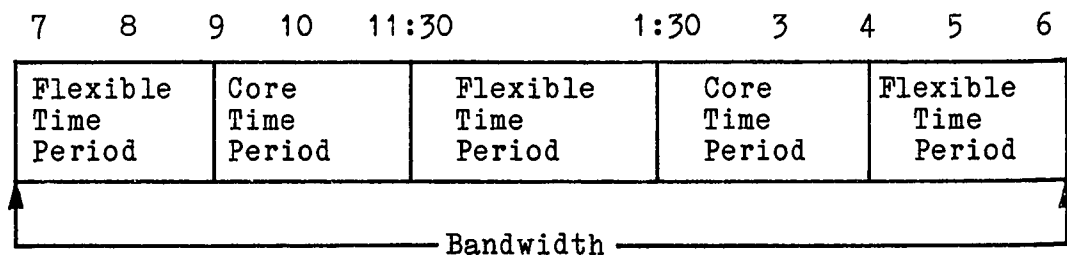


Traditional Fixed 8-hour Day

Figure 1

A.M.

P.M.



Flexible Day with Double Core Period

Figure 2

Variations of Flexible Working Hours

While the arrangement of flexible working hours in regard to length of bandwidth, number and length of flexible time periods will vary from organization, the three approaches utilized are:

Daily Flexibility

The employee can select the starting and stopping time each day with the lunch period determined by the organization to be:

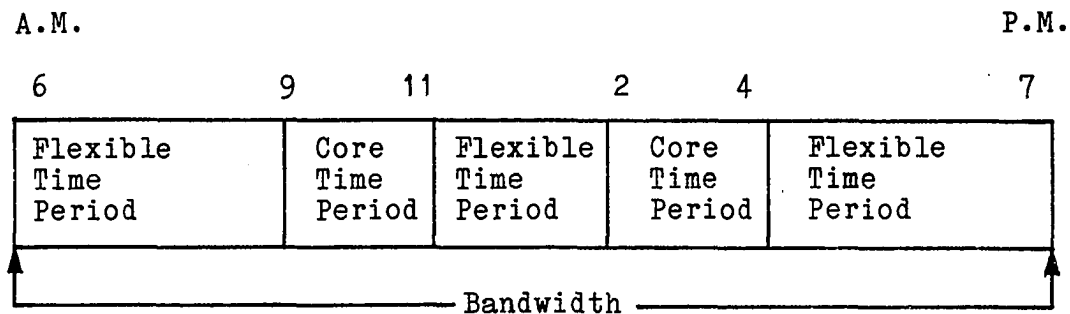
1. Fixed Lunch Break - All employees stop work for the same time period. Alexander Hamilton Institute uses this approach (J. Carroll Swart, 1974).

2. Staggered Lunch Break - Employees are required to stagger their lunch breaks to insure proper coverage or to reduce peak load on the lunch room facilities.

3. Flexible Lunch Break - A flexible time period during which employee may take his/her lunch time. A

minimum and a maximum length of time is usually established by the company (Figure 3). This is the most commonly used method.

4. Semi-Flexible Lunch Break - A combination of the fixed lunch period and the flexible lunch break. All employees stop work for a particular time period but the employee may choose the overall length of the lunch period, subject to company constraints, within the flexible periods on either side of the fixed period.



Flexible Day with Flexible Lunch Break

Figure 3

The wider the bandwidth, i.e. 13 hours versus 11 hours, and the shorter the core time periods, i.e. 9 to 11 and 2 to 4 versus 9 to 11:30 and 1:30 to 4 (Figure 2 versus Figure 3), the greater flexibility to the employee.

The employee has greater flexibility under daily flexible working hours since he/she has the choice of selecting his/her starting time each day versus being required to commence at the same time each day for a week or perhaps a month (The Nestle's Co., Inc., and Hewlett-Packard

Corporation require their employees to decide on a weekly basis their starting time) (Cohen and Gadon, 1978). However, under daily flexibility the employee does not have the choice of banking since the contract must be completed each day.

Weekly Flexibility

Under weekly flexibility the employee has the additional capability of working more or less than the normal number of hours in a day. The requirement is that a specified number of hours be worked during the week subject to the bandwidth of the day, company core attendance and possible overtime requirements. The Social Security Administration Headquarters in Baltimore, Maryland, utilizes weekly flexibility (Fleuter, 1975).

Monthly Flexibility

Monthly flexibility is an extension of the weekly flexibility because the surplus/deficit hours may be carried from one week to the next within the month or from one month to the next. This concept is subject to the same restrictions as weekly flexibility and has the additional constraint of the amount of hours that can be held back or carried forward (usually ten hours).

Banking

In the case of banking, the longer the individual can carry forward a surplus/deficit of hours the greater variability for the employee.

Methods of Recording Time

Traditional time recording is used to control the starting and stopping times of individuals and as a means of calculating attendance times at the standard and overtime rates where required. Under flexible working hours the time recording is concerned with recording actual hours of attendance rather than absolute starting and finishing times.

Several approaches have been developed to track attendance time in order to insure employees are working within the limits of the plan, legal and other regulations covering the employee's working hours are maintained, and if required debit/credit balances can be calculated at any point in time during the settlement period.

Manual System

The method of time recording which has the least initial cost is a form designed for the employee to list the starting time, lunch period, and stopping time. Special columns for holidays, absences, and debit/credit balances, and any other individual requirements are incorporated on the form. The information is collected and tabulated at the end of the reporting period.

Time Clock

A second method used to compile time is a time clock system. Conventional time clocks can be modified to record the flexible schedule available to the employees. Time

clocks have the disadvantages of the psychological stigma and the inherent resentment of "clocking in" of all work forces but particularly with white collar workers.

Meter Recording

This is the most popular system of recording for flexible working hours as it provides an objective record and is more readily acceptable to employees than conventional time clocks. The equipment is different than a time clock because, although there is a master clock, each employee has a counter which, when activated by the employee's personal key, records total attendance hours. The major disadvantage occurs when an employee misplaces the key or leaves it at home.

Computer Based Systems

By properly designing the program it is possible to operate a recording and computational system to control flexible working hours. Each employee is given a personalized badge which is inserted into a badge reading terminal. The employee records authorized absences, overtime, etc. The main disadvantage compared with meter systems is its inability to give the current status of any individual, i.e. in or out.

Implementation

The initial request to form a flexible working hours study usually, but not necessarily, comes from top management. Sometimes the request is initiated by a group

of workers. The reasons given will vary but include items such as traffic congestion, reduce short-term absenteeism, or to build employee morale.

While most organizations to date have not used outside consultants or appointed an internal project director, the companies which have encountered the least management problems have had a project director (Nollen and Martin, 1978). Most organizations do hold meetings with managers and employees to help determine what variation of flexible working hours should be implemented. Decisions about exempt personnel, if any, and the timekeeping method to be used is usually made at this time. A review of the legal ramifications of flexible working hours is also usually made and, if required, the union is contacted for its inputs.

Surveys as to the acceptability of the determined plan are usually made. Ordinarily a trial basis is adopted for a small segment of the organization. After the test period, flexible working hours are expanded to other parts of the organization. However, prior to complete implementation of flexible working hours all customers are usually contacted to make them aware of the new working hours, particularly the flexible bands. In addition, all personnel are usually informed flexible working hours will continue as long as the change is beneficial to both the employees and the company.

The flexible working hours program is installed within the framework of the existing structure, rules and

regulations of the company, as well as the laws of the country. The program usually does not in any way change the original contracts of the employees of the organization. For example, if an individual chooses to continue to work the fixed working day hours, he/she is usually allowed to do just that under the flexible working hours day. The requirement to be away from the job site on company business, i.e., an audit trip, is usually treated in the same manner as it was prior to flexible working hours.

Impact of Flexible Working Hours

Having defined flexible working hours, it is now appropriate to discuss what is known about the effects of flexible working hours. Although, as previously stated (Glueck, 1979), numerous organizations (over one thousand in USA alone by 1979) have adopted some form of flexible working hours, only a very small percentage of these organizations have conducted research to determine the impact of the implementation of flexible working hours. Tables 1 and 2 summarize the findings of these studies that examined the impact of flexible working hours on absenteeism/sick leave usage, effectiveness, and/or morale/job satisfaction.

Table 1 lists the background information on these studies. Column one contains the names of the various author(s) while column two identifies the organization(s) and whether or not data was also collected from control

Table 1

Background Information on Studies

<u>Author(s)</u>	<u>Settings</u>	<u>Respondents</u>	<u>Data Source</u>
Fields (1974)	Case Study of Mutual of New York Insurance Co.	Transactions & Billings Dept. (22 clerical employees)	Questionnaire; company production records (Post)
Fleuter (1975)	Case Study of Industrial National Bank of Providence, Rhode Island	Consumer Loan Dept. (73 employees)	Questionnaire (Post)
Golembiewski & Hilles (1977)	Case Study of Smith Kline	Stratified random sample of 4000 (N = 183 supervisors and 274 subordinates)	Questionnaire (Post)
Golembiewski Hilles Kagno (1974)	Three R & D Units of Smith Kline Corp. (two experimental, one control)	Approximately 60 employees (15-22 in each unit)	Two questionnaires; employee form, managerial form, company records (Pre/Post)
Hartley (1976)	344 business and government organizations	500 personnel administrators and 366 executives	Questionnaires (Post)
Holley et al (1976)	Accounting Dept of an airline	58 clerical employees	Questionnaire (Post)
Hopp & Summerstad (1977)	Case Study at Control Data Corporation	Aerospace and Microcircuits Operations	Questionnaire (Some Pre/Post, Post)
Morgan (1977)	Case Study of Berol Corp. (three divisions experimental, four divisions control)	88 flexitime employees and 78 nonflexitime employees	Questionnaire (Post)

Table 1
(Continued)

<u>Author(s)</u>	<u>Settings</u>	<u>Respondents</u>	<u>Data Source</u>
Mueller & Cole (1977)	US Geological (Agency of Department of Interior	318 supervisory and 1912 non- supervisory	Questionnaire (Some Pre/Post, Post)
Nollen & Martin (1978)	196 business and govern- ment organi- zations	146 mail and 50 telephone responses	Questionnaire (Post)
Ronen & Primps (1980)	Government bureaus and agencies	25 public agencies	Review of com- pleted studies
Zawecki (1975)	Hewlett Packard Corp.	157 supervi- sory and 233 non-supervi- sory	Questionnaire (Post)
Zawecki & Johnson (1976)	Colorado Springs Divi- sion of Hewlett Packard	45 supervisory and 69 non- supervisory	Questionnaire (Post)

Table 2
Effects on Measures of Absenteeism/Sick Leave,
Effectiveness and Morale/Job Satisfaction

<u>Author(s)</u>	<u>Absenteeism/ Sick Leave</u>	<u>Effectiveness</u>	<u>Morale/Job Satisfaction</u>
Fields (1974)	Absenteeism 7.6% lower than previous six months	22% increase in production	Significant increases cited
Fleuter (1975)	-	Effect cited	93% reported increase
Golembiewski & Hilles (1977)	Total Sick Days 191 235	One Day 78 67	72% reported increased pro- ductivity, 17% reported re- duced produc- tivity
Golembiewski Hilles, Kagno (1974)	One-day ab- sences in- creased but half the rate for compari- son group	Significant increases cited	Significant increases cited
Hartley (1976)	Effect cited	Effect cited	Effect cited
Holley et al (1976)	-	Significant increases cited	Significant increases cited
Hopp & Sommerstad (1977)	Sick Leave in- creased in all but the summer months	-	Overall in- creases cited, but decreases in one unit
Morgan (1977)	50% reduction in absenteeism	28% reported increase job performance 12% reported reduced job performance	89% reported in- crease

Table 2
(Continued)

<u>Author(s)</u>	<u>Absenteeism/ Sick Leave</u>	<u>Effectiveness</u>	<u>Morale/Job Satisfaction</u>
Mueller & Cole (1977)	51% reported reduced ab- senteeism 1% reported in- creased absen- teeism	37% reported increased pro- ductivity 2% reported re- duced produc- tivity	79% reported increase
Nollen & Martin (1978)	73% reported reduced 2% reported in- creased	48% reported increased 4% reported re- duced produc- tivity	97% reported increase
Ronen & Primp (1980)	Effect cited	56% reported increased pro- ductivity	68% reported increase
Zawecki	51% reported reduced absen- teeism	60% reported in- creased produc- tivity 57% re- ported reduced productivity 57% reported in- creased efficien- cy 8% reported reduced efficien- cy	96% reported increase
Zawecki & Johnson (1976)	59% reported reduced absen- teeism 51% re- ported reduced sick leave	58% reported in- creased produc- tivity 4% repor- ted reduced pro- ductivity 59% re- ported increased efficiency 8% re- ported reduced efficiency	93% reported increase

groups. Columns three and four list the respondents and the data source utilized for the research in each study respectively.

Ten of the studies are from primary sources; that is, they are the results obtained directly from a specific flexible working hours implementation in a given organization. The other three studies, Hartley (1976), Nollen and Martin (1977) and Ronen and Primps (1980) are secondary; the results are summaries of questionnaire responses from several organizations.

Table 2 summarizes the findings with respect to the effects on absenteeism/sick leave, effectiveness and/or morale/job satisfaction reported in each of the studies. While even these thirteen have areas which are omitted or the effect merely cited, they are the available studies as to the effects of flexible working hours implementation on absenteeism/sick leave, effectiveness, and/or morale/job satisfaction.

Absenteeism/Sick Leave

Eleven of the thirteen studies reported the impact of flexible working hours on absenteeism/sick leave. Of these, eight indicated the level of absenteeism/sick leave usage decreased following the implementation of flexible working hours (see Table 2). In seven of the studies absenteeism/sick leave usage was reduced for a majority (51 to 78 percent) of the respondents. The only study which

reported "hard data" was the Mutual of New York Insurance Company. There Fields (1974) reported an actual decline of 7.6 percent in absenteeism comparing the company records for the six months after implementation of flexible working hours to the previous six months.

Not all of the studies found reductions in absenteeism/sick leave usage. In two studies the effect on sick leave usage was unclear. In a study at Smith Kline of almost five hundred supervisors and subordinates, Golembiewski and Hilles (1977) reported the number of single-day absences declined from 78 to 67 even though the total number of sick leave days increased from 191 to 235 in the year following the implementation of flexible working hours (Golembiewski and Proehl, 1978). In another study at Smith Kline, where a control group was used with two experimental groups, one day absences actually increased in the experimental groups though at a lower rate than the control group (Golembiewski, Hilles and Kagno, 1974). Finally sick leave usage was reported increased except in the summer months in the Aerospace and Microcircuits Operations of Control Data (Hopp and Sommerstad, 1977).

Proponents have listed several explanations for reduced short-term absences, i.e., one to three days. Individuals who oversleep can legitimately come to work (Golembiewski, Hilles and Kagno, 1974) or take care of a small emergency, such as a flat tire (Golembiewski and Proehl, 1978) without

the necessity of utilizing leave or being absent.

Effectiveness

Of the thirteen studies, eleven reported changes in effectiveness, i.e., production, efficiency, job performance (see Table 2). Ten of the studies reported perceptions of increased effectiveness, either simply citing the effect or a percentage reporting the effect. (Of the studies reporting percentages, the range of increases varied from 27 to 60 percent). The eleventh study (Fields, 1974) reported an actual increase in production of 22 percent following the implementation of flexible working hours at the Mutual of New York Insurance Company.

Five of the eleven studies reporting increased effectiveness also reported a minority of respondents who experienced reduced effectiveness. For example in the Hewlett-Packard Study by Zawecki (1974), efficiency was reported increased by fifty-seven percent of the respondents but reduced by eight percent. Also, the Berol Corporation study (Morgan, 1977) listed improved job performances for twenty-eight percent of respondents yet decreased for twelve percent of respondents. At Hewlett-Packard (Zawecki and Johnson, 1975) the results were fifty-nine percent and eight percent respectively.

As with absenteeism/sick leave, proponents have listed several possible reasons why flexible working hours would have a positive impact on effectiveness. One is that

individual differences exist in the optimal time for people to perform tasks and flexible working hours allow the employee to work when he/she "feels" best (Glueck, 1979). Another is the elimination of "dead time" which may occur near the end of the workday. Employees are more inclined to work until a task is completed if they will be credited with the additional work time under the banking concept, thus reducing "start-up time" the following day. For example, in one large pharmaceutical company, employees are not reluctant to start a batch near the end of the workday because they know they can stay until the batch is completed thus avoiding "killing time" until they leave (Golembiewski, Hilles and Kagno, 1974).

It also might be that flexible working hours reduces the amount of ineffective supervision. For example, Cohen and Gadon (1978) cite the following example in a clerical setting:

The typing pool was run by a female former military officer. For a long time management had known that she was not very good at handling people and had tried a number of supervisory training devices. Nothing had made any difference. Finally, in desperation, management decided to try installing flexible working hours. The supervisor's military experience had conditioned her to believe that she could not possibly trust any employee whom she wasn't watching continuously. Therefore, she had utilized strict and close supervision. Under flexible working hours, it was not possible for her to be present during the entire working day, so that she was forced to let some work go on without watching it directly. As she gradually discovered that employees were doing their work, even when she was not present, she began to spend

less time watching and more time in the office planning. As a result of this change in management style, productivity in the typing pool increased 9 1/2 percent over seven months, as measured by the number of lines typed. This amounted to a saving of approximately \$2200 per month, and "saving" of another kind--the "untrainable" supervisor had been "trained".

Under other circumstances, however, a large midwestern insurance company reported some production loss. Some employees apparently took advantage of the situation and did not work until the supervisor arrived in the morning (Nollen and Martin, 1977).

Morale/Job Satisfaction

All thirteen studies have concluded the majority of employees had higher morale or were more satisfied with their jobs after implementation of flexible working hours (See Table 2). In the seven studies where measures of morale/job satisfaction were obtained, the portion of employees reporting increased morale/job satisfaction ranged from a low of seventy-nine percent in the Muller and Cole survey (1977) of over two thousand employees in a government agency to a high of ninety-seven percent of the respondents in the Nollen and Martin report (1977) of one hundred and ninety-six business and government organizations. In all six of the remaining studies the overall level of morale/job satisfaction was found to have increased but no specific details were reported.

Although the empirical studies of flexible working hours do not list reasons why morale/job satisfaction might decrease, Hopp and Sommerstad (1977) did cite a decline in morale/job satisfaction in one unit even though overall increases were reported. Also, at the Industrial Bank of Providence, Rhode Island, after a ten-week flexible working hours test, a questionnaire administered to seventy-three employees indicated five employees felt they had not benefited from the program as anticipated. As a result, three employees chose to work the hours in the work day prior to flexible working hours (Fleuter, 1975).

Several explanations are listed by proponents of flexible working hours for increased employee morale/job satisfaction. The employees no longer have to be concerned about arrival at a set time (Fleuter, 1975). Thus Swart (1974) reported:

A young secretary at Hewlett-Packard says her social life has benefited in that if she goes out on a week night, she can sleep a little later the next morning.

The employees are also able to balance the duties of their personal lives with the duties of their jobs (Elbing, Gadon and Gordon, 1975). The following examples may be the result of this possible balance. Swart (1974) cited the following example:

A computer programmer at Occidental Life of California uses the term "humanitarian" in describing the firm's flexible hours program. The employee gets to work at 6:30 a.m., leaves at 3:00 p.m., and can arrive home in time to umpire his

son's Little League ballgames.

While Cohen and Gadon (1978) presented the following example:

Charlie is a supervisor in an urban bank. He worked from 9:00 to 5:00 for twenty years; it had never occurred to him that the complexities of his family life could be other than they were. At the end of each working day he would fight the traffic to get home, and then sink into a chair to read the newspaper in the brief time before dinner. With only a short time before dinner, he could somehow never get around to work on the boat he was building in his basement. After dinner, he often had to take his wife shopping, since she didn't drive and they only had the one car. This schedule meant that Charlie was often irritable when he was at home. He never seemed to be able to interest his children in the boat building he so much loved whenever he could find the time for it. After the implementation of flexible working hours in his bank, he found that his assistant supervisor, who was young and single, preferred to come in later in the morning and then work later in the afternoon. Charlie was an early riser, anyway, and so began to come in at 7:30 in the morning in order to leave at 3:30 in the afternoon. Because he got home earlier, the family's one car was available to his daughter, who volunteered to take his wife shopping. Within a short time his boys, out of curiosity, joined him after work in building the boat. Because he would get a running start before dinner, he found that he often was quite willing and able to get back to it after dinner, where his boys would once again join him. The greater interaction around boat building with his sons led to more free and easy communication with them that, in turn, made him feel better about himself. Because his wife could get the shopping done before dinner in the evenings she was more relaxed and often either joined in the boat building or socialized with the men. Thus a simple change in working hours had profound and far-reaching effects on family relationships and communications.

Additionally, flexible working hours allow the employees the same freedom of time presently possessed by most managers and professionals (Glueck, 1979). Thus, as reported by

Swart (1974), people may feel differently about the organization, i.e.:

A middle-aged woman who puts together printed circuit boards is pleased that the company thinks she is intelligent enough to keep her own hours and treats her like an adult.

Although the studies of flexible working hours have explanations for increased job satisfaction, this evidence is typically anecdotal. For example, Mrs Gill, a supervisor with Sun Oil, stated morale had been increased for her organization of one hundred and twenty-five employees. "The lone dissenter was just an old grouch anyway." (Golembiewski, Hilles and Kagno, 1974).

The First-Line Supervisor and Flexible Working Hours

The impact of flexible working hours on the job of the first-line supervisor has been discussed in literature (Golembiewski, Hilles, and Kagno, Nollen and Martin, Glueck, etc). In many cases supervisors change the way they perform their jobs because it is physically impossible for them to rely on firsthand observation to insure performance by their subordinates with the change from a fixed work day to a flexible work day.

One empirical study by Lee A. Graf (1976) has investigated the impact of flexible working hours on the first-line supervisor's job. Questionnaires were obtained from 311 first-line supervisors in 22 different organizations to determine how flexible work had affected the planning, organizing, staffing, directing and

controlling functions of his/her job. The conclusions reached were, first, supervisors must be more effective in the use of communication skills, both oral and written, to insure job performance. Because the supervisor may not always be available to oversee the work, he/she must be able to give explicit directions, both oral and written to aid understanding by the employees. The supervisor must also be able to understand the oral and written information supplied by his/her employees. Second, under flexible working hours, the supervisor must anticipate possible future problems which might occur in the supervisor's absence. Finally, flexible working hours can result in a closer working relationship with subordinates when supervisors actively encourage their involvement in identifying and solving problems which might occur in the supervisor's absence.

In addition to the Graf study, other researchers have reported both positive and negative changes in the job of the first-line supervisor. For example, supervisors no longer perform the distasteful task of enforcing specific arrival and departure times for their employees (Nollen and Martin, 1977). On the other hand, one potential negative effect is that the first line supervisor may perceive a decrease in authority and a loss of power because of flexible working hours (Ronen, 1981). One review (Golembiewski, Fox and Proehl, 1980), while acknowledging both the negative and positive effects of flexible working

hours on the job of the first-line supervisor, reached the conclusion most supervisors were able to handle the problems. In their study 86 percent (thirty-seven of forty-three) of the supervisors wanted to stay on flexible working hours.

One unanswered question is how the changes in the supervisors' job affects their relationships with their subordinates (Alderfer, 1967). For example, the supervisor may respond to the decreased face to face contact by significantly increasing the number of rules, directives and special control measures to insure the work is accomplished correctly (Graf, 1976). Unfortunately, this could produce resentment and even hostility from the subordinates. On the other hand the supervisor may respond to flexible working hours by allowing the employees greater autonomy and decision-making in their jobs which could have a positive effect.

Flexible Working Hours and Motivation

The studies cited above suggest at least two ways in which flexible working hours might have a positive impact on employee motivation. These are that flexible working hours (1) alter the nature of the interface between the employees jobs and their personal lives away from the work place and (2) change the nature of the work itself. The first is the relationship of the job to all other outside influences while the second concerns possible changes in the job only.

Flexible Working Hours and Personal Life

Many authors have described the success of flexible working hours as due to the opportunity for employees to coordinate their personal and family life needs with their assigned work tasks (Elbing, Gadon and Gordon, 1974; Nollen and Martin, 1977). An example of the resolution of conflict of the work/personal life interface is the following:

A black woman at a Boston bank had been labeled "chronically tardy" by her boss even though she was competent at her work. He was ready to fire her because of this constant source of aggravation. Coincidentally, the department began a flexible working hours experiment. After a few days, this woman, whom the boss thought was "not ready to join the modern industrial labor force because blacks don't get the right kind of discipline" started coming in half an hour earlier than her former starting time! She had a child whom she took to a day-care center; when work started at 9:00 and the day-care center opened at 8:30, she could not physically get from the center to the bank in time, so she was always a few minutes late. When she could come to work within a broad range of time, she was able to make alternative arrangements for her child, leaving him at a relative's, and arriving early at work without having to wait around for the starting time." (Cohen and Gadon, 1978).

Thus flexible working hours may reduce the stress caused by getting to work on time (Glueck, 1979). Other factors listed by proponents include savings in commuter time may occur by allowing the employee to adjust his/her work schedule to avoid rush hour traffic (Ronen, 1981) and savings in personal time may occur by allowing the employee to schedule appointments early/late to avoid conflict with work time (Glueck, 1979).

In this sense, flexible working hours would apply to the elements external to the job of the individual, i.e., the environment around the work itself and a benefit of belonging to the system. The extent that this explanation is accurate, a number of major schools of thought would predict that flexible working hours would be effective in holding organizational members but would not lead to greater productivity than required to remain within the organization. For example, Katz and Kahn would probably classify flexible working hours as a system reward, i.e., a reward through membership in the organization, thus would predict that it would not directly affect individual performance. Also Herzberg's motivation model would probably list flexible working hours as a hygiene factor due to its similarity to salary, working conditions, status items such as private parking places, etc., and all benefits associated with the employee's membership in the organization (Herzberg, 1973). Similarly, Steers and Rhodes (1978) describe flexible working hours as an incentive/reward element which may influence attendance motivation. In addition the conclusion that the major impact of flexible working hours would be decreased absenteeism is supported by the fact that flexible working hours was originally implemented in Germany to alleviate a labor shortage (Martin, 1975).

Flexible Working Hours and the Job Itself

A number of authors have also suggested that flexible working hours may also have an impact on the nature of the job itself. For example, Golembiewski, Hilles and Kagno (1974) have described flexible working hours as a structural intervention which may cause fundamental changes in the manner in which organizations function since employees may be required to work without supervision during some portion of the work day. One of the changes may be that the employee will perceive the emphasis of the organization has shifted from presence, i.e., whether or not the employee is on the job during particular time periods, to performance, i.e., whether or not the employee is accomplishing assigned tasks (Roman, 1981). Another is that employees may be required to do additional and different work due to the absence of either the supervisor and/or co-workers. Additionally, flexible working hours may allow the employees to take more responsibility for their own job performance (Elbing, Gadon and Gordon, 1974).

Unfortunately, however compelling the logic, little if any, empirical research has examined the impact of flexible working hours on the jobs of the subordinates. Therefore, one of the purposes of this study is to examine the effect of flexible working hours on the nature of the work itself.

CHAPTER III

RESEARCH MODEL, HYPOTHESES AND METHODOLOGY

This chapter describes the research methodology, the model, the research questions and hypotheses, sampling and data collection, research instruments, and statistical procedures for data analysis.

Introduction

Social scientific research has been separated into four major categories: laboratory experiments, field experiment, field study, and survey research (Kerlinger, 1973). A laboratory experiment is one in which the researcher attempts to control the environment and manipulate the independent variable or variables being studied. A field experiment is a laboratory experiment in a real world environment. A field study is an ex post facto inquiry of the relationships and interactions among variables in a social structure. The researcher in a field study does not ordinarily introduce any changes. Survey research is an approach used to study large populations by examining samples from these populations to determine the incidence,

distribution, and interrelations of selected variables (Kerlinger, 1973).

This study is classified as a field study using survey research because it is an ex post facto examination of the relationships of specific variables using a sample from a given population.

The major weakness of a field study is the results are less interpretable than the results of a laboratory or field experiment (Cook and Campbell, 1979). One cannot, therefore, prove directly cause and effect relationships between variables. However, the relationships between variables can be determined at a given point in time. Therefore, for example, if significant positive relationships are found between flexible working hours and positive changes in employee motivation, strong support would be given for implementing flexible working hours even though it would not prove a cause and effect relationship.

Respondents (first-line supervisors and their subordinates) were asked to record their perceptions of the organization since the change was made to flexible working hours. This is a substitution for a true pre-test and post-test experimental design. Thus the assumption is made the employees could accurately determine their perceptions of the organizational changes which might have occurred subsequent to introduction of flexible working hours. The assumption is also made that these perceptions could be

expressed accurately on ordinal response scales.

The responses to all questions were scored on a seven-point scale. The responses to these questions were analyzed by comparing the sample mean with a hypothetical mean of four which represented a response of the same which was expected if the participants perceived no difference between flexible working hours and fixed working hours.

In most cases the individual responses were grouped into multiple item indices. The individual score for an index was computed by totaling the values of the responses for each item on the index and dividing by the number of items.

Research Model and Hypotheses

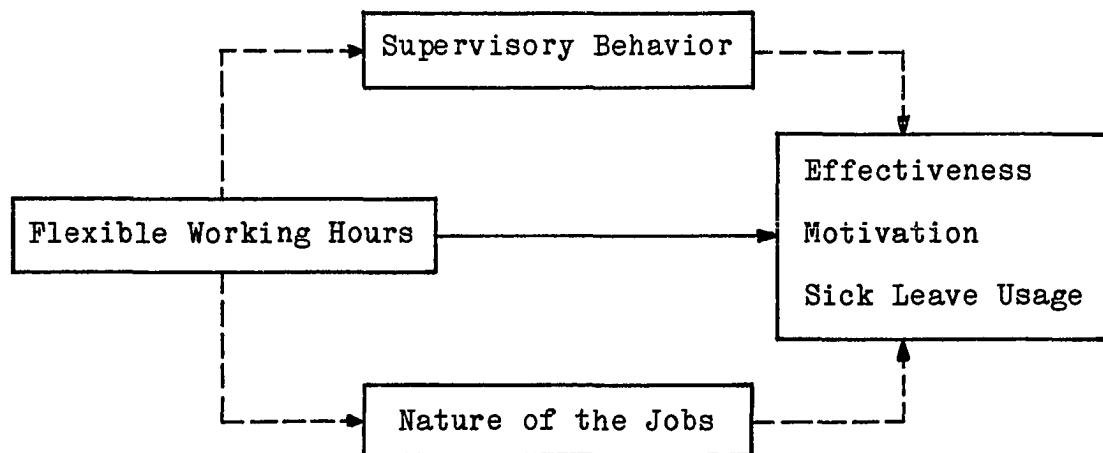
The major questions this research attempted to answer were: What is the relationship between the implementation of flexible working hours and supervisory behavior? What is the relationship between the implementation of flexible working hours and the motivational potential of the jobs? What is the relationship between the implementation of flexible working hours and effectiveness of the organization? What is the relationship between the implementation of flexible working hours and employee motivation? What is the relationship between the implementation of flexible working hours and the usage of sick leave?

Additionally, what is the strength of the relationship between changes in supervisory behavior and changes in the

effectiveness of the organization following the implementation of flexible working hours? What is the strength of the relationship between changes in supervisory behavior and changes in employee motivation following the implementation of flexible working hours? What is the strength of the relationship between changes in supervisory behavior and changes in usage of sick leave following the implementation of flexible working hours?

Also, what is the strength of the relationship between changes in the jobs of the employees and changes in the effectiveness of the organization following the implementation of flexible working hours? What is the strength of the relationship between changes in the jobs of the employees and changes in employee motivation following the implementation of flexible working hours? What is the strength of the relationship between changes in the jobs of the employees and changes in usage of sick leave following the implementation of flexible working hours?

The expected relationship between flexible working hours and the factors discussed previously are displayed in Figure 4.



Model

Figure 4

HYPOTHESES AND RATIONALE

Five principal hypothesis form the rationale for the model. These hypothesis are now presented with corresponding specific emperical predictions to be tested.

Flexible Working Hours and the Change in Supervisory Behavior

Hypothesis 1: The behavior of the first-line supervisors will significantly change following the implementation of flexible working hours.

This hypothesis is based on two theses. First, if the first-line supervisors perceive their jobs are threatened by flexible working hours, they may react by establishing new rules, procedures and control measures. Second, if the

first-line supervisors perceive flexible working hours improve their jobs they may react positively granting their employees more responsibility and autonomy for their (the subordinates) jobs. Thus, in either case, there will be a perception on the part of the non-supervisory employees that the behavior of their first-line supervisor has changed.

Flexible Working Hours and the Change

in Motivational Potential of the Job

Hypothesis 2: The motivational potential of the jobs will significantly increase following the implementation of flexible working hours

Flexible working hours extends the length of the workday making it almost impossible for the supervisor over the first-line supervisor to be available at all times. This is also true for the first-line supervisor as well. Additionally, the hours of work selected by the non-supervisory employees may preclude them being available throughout the entire day. Thus the first-line supervisor and his/her employees may be required to work some portion of the day without supervision. They may also be required to do the tasks of others since the person assigned that work may not be available. This additional work may allow the individual to have a greater insight into the importance of the task as well as provide a more complete task. If the individuals obtain the results of their work directly due to the lack of supervision, they may also perceive they have

more autonomy and responsibility in their jobs. Thus the changes caused by flexible working hours may result in an increase in the variety of skills used, a more complete task to do, a greater understanding of the importance of the job, and increases in both the autonomy of the job and feedback from the job for both the first-line supervisor and the non-supervisory employee.

Hypothesis 2A: The motivational potential of the jobs of the first-line supervisors will significantly increase following the implementation of flexible working hours.

Hypothesis 2B: The motivational potential of the jobs of the non-supervisory employees will significantly increase following the implementation of flexible working hours

Flexible Working Hours and Effectiveness

Hypothesis 3: The effectiveness of the organization will be significantly increased by the implementation of flexible working hours.

Flexible working hours will allow individuals to modify their attendance to better coincide with both their individual needs and the needs of the organization. When employees are allowed to adjust their times, they can select the periods when they are at their "best". The results of this change will be perception on the part of both first-line supervisors and their employees that the organization

is: more productive, producing better quality products, more efficient, more adaptive and more flexible under flexible working hours.

Hypothesis 3A: First-line supervisor will perceive that the overall effectiveness of their subordinate group has significantly increased following the implementation of flexible working hours.

Hypothesis 3B: Non-supervisory employees will perceive that the overall effectiveness of their group has significantly increased following the implementation of flexible working hours.

Additionally, the following would be expected to occur for the first-line supervisors and the non-supervisory employees:

First-line supervisors will perceive that:

Hypothesis 3A1: Productivity has significantly increased following the implementation of flexible working hours.

Hypothesis 3A2: Quality has significantly increased following the implementation of flexible working hours.

Hypothesis 3A3: Efficiency has significantly increased following the implementation of flexible working hours.

Hypothesis 3A4: Adaptability has
significantly increased following the
implementation of flexible working hours.

Hypothesis 3A5: Flexibility has significantly
increased following the implementation of flexible
working hours.

Non-supervisory employees will perceive that:

Hypothesis 3B1: Productivity has
significantly increased following the
implementation of flexible working hours.

Hypothesis 3B2: Quality has significantly
increased following the implementation of flexible
working hours.

Hypothesis 3B3: Efficiency has significantly
increased following the implementation of flexible
working hours.

Hypothesis 3B4: Adaptability has
significantly increased following the
implementation of flexible working hours.

Hypothesis 3B5: Flexibility has significantly
increased following the implementation of flexible
working hours.

Flexible Working Hours and Employee Motivation

Hypothesis 4: The individual motivation will significantly increase following the implementation of flexible working hours.

This hypothesis is based on two theses. First, if flexible working hours allows the employees to adjust their work life to better coincide with their personal life they will be more satisfied and motivated on the job. This is one of the basic reasons given by proponents for the implementation of flexible working hours. Secondly, if flexible working hours causes changes in the employees' jobs which improve the jobs themselves the employees may be more satisfied and motivated with/by their jobs. If the jobs are changed to become better jobs the employees may be more motivated by the work itself.

Hypothesis 4A: The motivation of the first-line supervisors will significantly increase following the implementation of flexible working hours.

Hypothesis 4B: The motivation of non-supervisory employees will significantly increase following the implementation of flexible working hours.

Flexible Working Hours and Sick Leave Usage

Hypothesis 5: Sick leave consumption rate will be significantly lower subsequent to the implementation of flexible working hours.

This hypothesis is based on three theses. First, since flexible working hours allow the individual to come to work early/late to accommodate a late/early doctor's or dentist's appointment he/she should consume fewer sick leave hours than under structured hours. Second, because flexible working hours allow the individual to arrive at a later time than under structured hours, if the employee feels ill early but feels better later, he/she can still arrive at work in time to put in a full day or a near full day, thus reducing the use of sick leave time. Third, if the supervisor's actions in response to the implementation of flexible working hours are such that the employees enjoy their jobs more, then there will be less "job-induced" illness and consequently, less consumption of sick leave hours.

Moderating Effects of Changes In Supervisory Behavior and the Nature of the Job:

In addition to any direct effects of flexible working hours, the way in which the first-line supervisor adjusts to the reduced opportunity for firsthand observation may have an impact on the employee's attitudes and behavior as well. For example, if the first-line supervisor responds by establishing restrictive procedures and controls, the

benefits promised by proponents may be completely offset. However, it is also plausible that the supervisor could change in ways that stimulate increased effectiveness, greater satisfaction and less use of sick leave.

Similarly, changes in the nature of the job that result from flexible working hours may be either positive or negative. If the jobs have less variety, responsibility or autonomy after a flexible working hours implementation, employees may work less effectively and experience greater dissatisfaction. However, if the jobs are changed by flexible working hours to result in an increase in the variety of skills used, a more complete task to do, a greater understanding of the importance of the job, and increases in both the autonomy of the job and feedback from that job, then the employees may be more satisfied and effective on the job. Greater satisfaction with their jobs by the employees should also result in less "job-induced" sick leave usage. Therefore, the following research question is proposed:

Question 1: What is the strength of the relationships between changes in (1) supervisory behavior and the nature of the jobs and (2) organizational effectiveness, employee motivation and sick leave usage.

Description of the Sample

The subjects in this study were the members of a major organization within a large Southwestern military industrial complex. The jobs varied from clerks and typists to project administrators and engineers. The organization had been utilizing flexible working hours for approximately eighteen months at the time of the study.

Data for the study was collected through the use of a questionnaire that was distributed to all 135 first-line supervisors whose employees were on flexible working hours and a random sample of their subordinates.

Table 3

Organization and Response Rate

<u>Area</u>	<u>Questionnaires Distributed</u>	<u>Questionnaires Collected</u>	<u>Questionnaires Usable Number and Percent</u>	
1	32	25	9	28%
2	62	61	46	74%
3	136	118	96	71%
4	56	50	35	63%
5	88	72	54	61%
6	70	58	46	66%
7	6	6	6	100%

NOTE: Area one had a particularly low rate of useable questionnaires because of its expansion after the implementation of flexible working hours.

Data Collection

The majority of the data for the study came from questionnaires that were sent to employees by "in-house" mail (See Table 3). While confidentiality of individual responses was assured and maintained, the questionnaires were coded so the responses could be determined from each unit. This was necessary to determine the units where the respondents had only worked under flexible working hours. That is, the employees had not worked in that organization prior to the implementation of flexible working hours. An additional randomly selected employee was sent a questionnaire to replace each responding employee in that unit who had not worked under a fixed work day in the organization prior to flexible working hours. Only responses from first-line supervisors and non-supervisory employees who had worked in the units prior to flexible working hours were utilized in this study.

Measurement Instruments

Quantitative Sick Leave Usage Data

Sick leave usage data were obtained from the group within the organization designated to compile such information (Appendix 1). The data obtained was for the entire organization for a period of five years, two and one-half years before implementation of flexible working hours and two and one-half years after. An additional point of interest occurred when, after twenty-two months of flexible

working hours as originally implemented, the flexible bands were reduced in width. The final eight months of the sick leave usage data were under this modification.

Research Questionnaire

The questionnaire for this research was developed by integrating questions from four survey research instruments (Appendix 2) (1) Quality of Employment Survey (QES) (Quinn and Shepard, 1974), (2) Questionnaire on the Job of the First-Line Supervisor (JFS) (Graf, 1976), (3) The Job Diagnostic Survey (JDS) (Hackman and Oldham, 1974), and (4) Measures of Organizational Effectiveness (MOE) (Mott, 1972)

The QES was developed at the Institute for Social Research at the University of Michigan. The questionnaire contains two hundred and thirty-six questions covering a variety of organizationally related topics. Although the format for questions varies, most questions on the QES are answered by responding on a Likert type scale, for example, from much less to much more or never to often.

The Questionnaire on the Job of the First-Line Supervisor was developed by Lee Graf at Mississippi State University for his doctoral dissertation. The questionnaire contains thirty-four questions concerned with various management components of the supervisor's job including planning, organizing, staffing, directing, and controlling. Questions on the JFS are answered by responding on a five point Likert type scale from many less

to many more or much less to much more.

The JDS was developed by J. Richard Hackman and Greg R. Oldham as a part of a Yale University study with the primary objective of determining the motivating potential of existing jobs as an input to planned job redesign. Most of the eighty-three questions in the JDS are answered by responding on a seven point Likert type scale from disagree strongly to agree strongly or extremely dissatisfied to extremely satisfied. The questions selected from the JDS to be used in this study were those which measure the motivating potential scores of the various jobs being reviewed.

Paul E. Mott's questionnaire of effectiveness contains forty-three questions using a five point Likert type scale. The questions measure, for example, from most people accept and adjust to them immediately to most people accept and adjust to them very slowly. An analysis of the MOE was made and questions selected to measure the impact on organizational effectiveness of the implementation of flexible working hours.

Measures

This study included measures of five dependent variables. These were (1) sick leave usage and (2) change in supervisory behavior, (3) change in the motivational potential of jobs, (4) effectiveness and (5) employee motivation. Appendix 3 summarizes these measures

and the corresponding question numbers for each variable.

Sick Leave Usage

Sick leave usage is calculated as a percentage of sick leave hours used versus manhours available per month and is calculated according to the following formula:

$$\frac{SLH}{TMA}$$

SLH = Sick Leave Hours Used

TMA = Total Manhours Available

Total manhours available varies from month to month due to the variation in the number of work days per month and the changing levels of employment within the organization.

Change in Supervisory Behavior

Supervisory behavior is a measure of how the supervisor reacted to flexible working hours and is comprised of two indices: (1) control and (2) freedom.

Control contains questions which measure whether or not the first-line supervisor has made some effort to "tighten down" or reestablish his/her authority position. These questions examine the rules, procedures, starting time, disciplinary actions, etc., since the implementation of flexible working hours. Freedom contains questions which measure whether or not the first-line supervisor has allowed the employees to take more responsible posture than they possessed prior to flexible working hours. These questions examine the amount of control, responsibility etc., the non-

supervisory employees have since flexible working hours was implemented. The two indices are in opposition, that is, if one is increasing the other will be decreasing, an adverse relationship.

The response scales for the questions in the control and freedom indices are as follows:

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

The actual questions for Control were as follows:

3. Since the change was made to flexible working hours, how often does your supervisor establish the starting time of employees to ensure the workload is accomplished?

4. Since the change was made to flexible working hours, how much time does your supervisor spend in setting the amount of work that has to be put out by the subordinate?

6. Since the change was made to flexible working hours, how often has your supervisor set up definite step-by-step procedures for you to follow on different things?

7. Since the change was made to flexible working hours, how often does your supervisor change rules and/or add new rules that affect you?

16. Since the change was made to flexible working hours, how often does your supervisor take disciplinary actions (written warning, oral warning, layoff, firing) against employees?

The actual questions for Freedom are as follows:

11. Since the change was made to flexible working hours, how much responsibility do you have?

17. Since the change was made to flexible working hours, how much self direction do you exercise in your work when you consider the specific directions you receive from your supervisor.

21. Since the change was made to flexible working hours, how often does your supervisor personally inspect or evaluate your work to make sure you are doing satisfactory work? (reverse scored)

23. Since the change was made to flexible working hours, how much control do you have over your job when you consider the control exercised by your supervisor?

The sample means, ranges of responses and coefficient alphas for the control and freedom indices are shown in Table 4.

Change in the Motivational Potential of Jobs

Change in the Motivational Potential of Jobs is a measure of the changes in the jobs themselves. These questions are a modification of those used by Hackman and Oldham to measure the motivational potential score of a job. The scale used for the Motivational Potential Index was:

Table 4
Measures of Change in Supervisory Behavior
for the Non-supervisory Employees

	<u>Sample Size</u>	<u>Sample Mean</u>	<u>Standard Deviation</u>	<u>Neutral Mean</u>	<u>Response Range</u>	Co- <u>Efficient Alpha</u>
Control	212	3.69	.72	4.0	1.0-5.2	.79
Freedom	212	4.42	.60	4.0	3.0-6.8	.71

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

The actual questions were as follows:

26. Since the change was made to flexible working hours, how much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

30. Since the change was made to flexible working hours, how simple and repetitive is your job? (reverse scored).

25. Since the change was made to flexible working hours, to what extent does your job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end?

32. Since the change was made to flexible working hours, how often does your job provide you the chance to completely finish the pieces of work you begin?

27. Since the change was made to flexible working hours, in general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

31. Since the change was made to flexible working hours, how often is your job one where a lot of other people are affected by how well the work gets done?

29. Since the change was made to flexible working hours, how often does the job provide opportunities for you to figure out how well you are doing?

24. Since the change was made to flexible working hours, how much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

33. Since the change was made to flexible working hours, how much does your job give you the opportunity for independence and freedom in how you do the work?

28. Since the change was made to flexible working hours, to what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing - - aside from any "feedback" co-workers or supervisors may provide?

A change in motivational potential (CMP) score was computed by summing the scores on all of the ten questions and dividing by ten to determine a mean. A mean of means was then calculated for both the first-line supervisors and the non-supervisory employees. These means, ranges of responses and coefficient alphas are shown in Table 5.

Table 5

Measures of Change in Motivational Potential
of Jobs for the First-Line Supervisors and
the Non-Supervisory Employees

	<u>Sample Size</u>	<u>Sample Mean</u>	<u>Standard Deviation</u>	<u>Neutral Mean</u>	<u>Response Range</u>	<u>Coeffi- cient Alpha</u>
First-line Supervisors	80	4.30	.44	4.0	3.8-5.9	.88
Non-supervi- sory Employees	212	4.48	.67	4.0	3.8-6.9	.90

Effectiveness

Effectiveness is a measure of the employee's perception of the changes in (1) productivity, (2) quality, (3) efficiency, (4) adaptability and (5) flexibility of his/her work group (See Table 6).

Within the organizational effectiveness index the question on productivity used the following scale:

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

The other questions used the following scale:

1	2	3	4	5	6	7
much	lower	slightly	same	slightly	higher	much
lower		lower		higher		higher

The actual questions were as follows:

34. Productivity - Since the change was made to flexible working hours, thinking now of the things produced by the people you know in your unit, how much are they producing?

35. Quality - Since the change was made to flexible working hours, how good would you say is the quality of the services or products produced by the people you know in your unit?

36. Efficiency - Since the change was made to flexible working hours, how would you rate your work unit on efficiency? That is, what kind of output do they have compared to the resources they have available?

37. Adaptability - From time to time emergencies arise, such as crash programs, schedules moved ahead, or a breakdown in the flow of work. When these emergencies occur, they cause work overloads for many people. Some work groups cope with these emergencies more readily and successfully than others. Since the change was made to flexible working hours, how good a job do people in your unit do at coping with these situations?

38. Flexibility - Since the change was made to flexible working hours, how good a job is done by the people in your unit in anticipating problems that may come up in the future and preventing them from occurring or minimizing their effects?

Due to a very high correlation between these items (See Table 7) an overall effectiveness index was computed. The overall effectiveness coefficient alphas for the first-line supervisors and the non-supervisory employees were .91 and .93 respectively. The coefficient alphas as well as the means and ranges of responses are shown in Table 8.

Table 6
Measures of Effectiveness Indices for First-Line
Supervisors and Non-Supervisory Employees

<u>Measures</u>	<u>Sample Size</u>	<u>Sample Mean</u>	<u>Standard Deviation</u>	<u>Neutral Mean</u>	<u>Response Range</u>
First-Line Supervisors					
Productivity	80	4.33	.95	4.0	1.0-7.0
Quality	80	4.53	.82	4.0	2.0-7.0
Efficiency	80	4.45	.98	4.0	2.0-7.0
Adaptability	80	4.58	1.00	4.0	2.0-7.0
Flexibility	80	4.36	.64	4.0	3.0-6.0
Non-Supervisory Employees					
Productivity	212	4.63	.98	4.0	1.0-7.0
Quality	212	4.72	1.00	4.0	2.0-7.0
Efficiency	212	4.81	1.04	4.0	2.0-7.0
Adaptability	212	4.89	1.03	4.0	2.0-7.0
Flexibility	212	4.71	.91	4.0	2.0-7.0

Table 7

Pearson Correlation Coefficient for Effectiveness with Coefficient Alphas

	<u>Pro</u>	<u>Qua</u>	<u>Eff</u>	<u>Ada</u>	<u>Fle</u>	<u>Eff</u>	<u>Pro</u>	<u>Qua</u>	<u>Eff</u>	<u>Ada</u>	<u>Fle</u>	<u>Effect Overall</u>
<u>Supervisory</u>												
Productivity												
Quality	.68											
Efficiency	.87	.74										
Adaptability	.61	.62	.71									
Flexibility	.53	.69	.58	.61								
Effectiveness	.88	.86	.93	.84	.77	(.91)*						
<u>Non-supervisory</u>												
Productivity	-.09	.03	-.02	-.04	.14	-.01						
Quality	-.02	.05	.02	-.02	.14	.03	.78					
Efficiency	.05	.08	.05	.03	.14	.07	.78	.85				
Adaptability	-.03	.05	.03	-.03	.14	.03	.62	.66	.64			
Flexibility	-.05	.05	.02	-.02	.14	.02	.71	.75	.70	.69		
Effectiveness	-.03	.06	.02	-.02	.15	.03	.88	.92	.91	.82	.87	(.93)*

* Coefficient Alpha

Table 8

Measures of Overall Organizational Effectiveness Index
for the First-Line Supervisors and the
Non-Supervisory Employees

	<u>Sample Size</u>	<u>Sample Mean</u>	<u>Standard Deviation</u>	<u>Neutral Mean</u>	<u>Response Range</u>	<u>Coeffi- cient Alpha</u>
First-line Supervisors	80	4.45	.76	4.0	2.6-6.2	.91
Non-Supervi- sory Employees	212	4.75	.87	4.0	2.0-7.0	.93

Employee Motivation

Employee motivation is a measure of the employee's interest in his/her work. The questions for employee motivation used the following scale:

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

The actual questions were as follows:

1. Some people are completely involved in their job, they are absorbed in it night and day. For other people, their job is simply one of several interests. Since the change was made to flexible working hours, how involved do you feel in your job?

9. Since the change was made to flexible working hours, on most days of your job, how often does time seem to drag for you? (reverse scored)

10. Since the change was made to flexible working hours, how much work are you able to accomplish?

18. Since the change was made to flexible working hours, how often do you do some extra work for your job which isn't required of you?

The sample means, response ranges, and coefficient alphas of employee motivation for both the first-line supervisors and the non-supervisory employees are shown in Table 9.

Table 9

Measures of Employee Motivation for the
First-Line Supervisors and the Non-Supervisory Employees

	<u>Sample Size</u>	<u>Sample Mean</u>	<u>Standard Deviation</u>	<u>Neutral Mean</u>	<u>Response Range</u>	Coeffi- cient <u>Alpha</u>
First-Line Supervisors	80	4.68	.75	4.0	3.0-7.0	.61
Non-Supervi- sory Employees	212	4.96	.79	4.0	3.3-7.0	.75

Statistical Techniques

The student's t statistical technique was utilized to evaluate hypotheses 1 through 5. This test is thought to be appropriate for analysis of means for paired observations. The research questionnaire hypotheses involved the comparison of a sample after the change to flexible working hours to a sample mean of 4 or no change. In cases where the after the change to flexible working hours did not show a significant change from the same mean of 4, the inference was made the respondents perceived no significant difference for that particular measure. The sick leave usage hypotheses used the comparison of sick leave consumption rates before flexible working hours to sick leave consumption rates after implementation. A .95 level of confidence ($p < .05$) was used to determine the significance of the results.

A stepwise multiple regression analysis was used to determine how much the changes in both supervisory behavior and the nature of the jobs impact on the organizational effectiveness, employee motivation and sick leave usage.

Calculations were performed by using both the Statistical Applications System (SAS) package (Barr, Goodnight, Sall, & Helwig, 1976) and the Statistical Package for the Social Sciences (SPSS) (N.H. Nie, et al, 1982) on the University IBM 3081 computer.

CHAPTER IV

RESEARCH RESULTS

This chapter provides the statistical results of data analysis for the hypotheses presented in Chapter 3.

Sick Leave Usage Results

Table 10 lists the sick leave usage results. The average mean of 5.37 percent for the 30 months prior to flexible working hours decreased significantly ($p < .01$) to 4.39 for the 22 months following implementation of flexible working hours.

Figure 5 uses the least squares method to demonstrate the level of sick leave before (line 1) and after (line 2) implementation of flexible working hours. Figure 5 also shows (line 3) sick leave usage after the modification of flexible working hours. As stated above there was a significant difference ($p < .01$) between before and after implementation of flexible working hours; however, the change was not significant in sick leave usage between the after implementation of flexible working hours and the modification to flexible working hours even though the sick leave usage rate went up.

SICK LEAVE USAGE OVER TIME

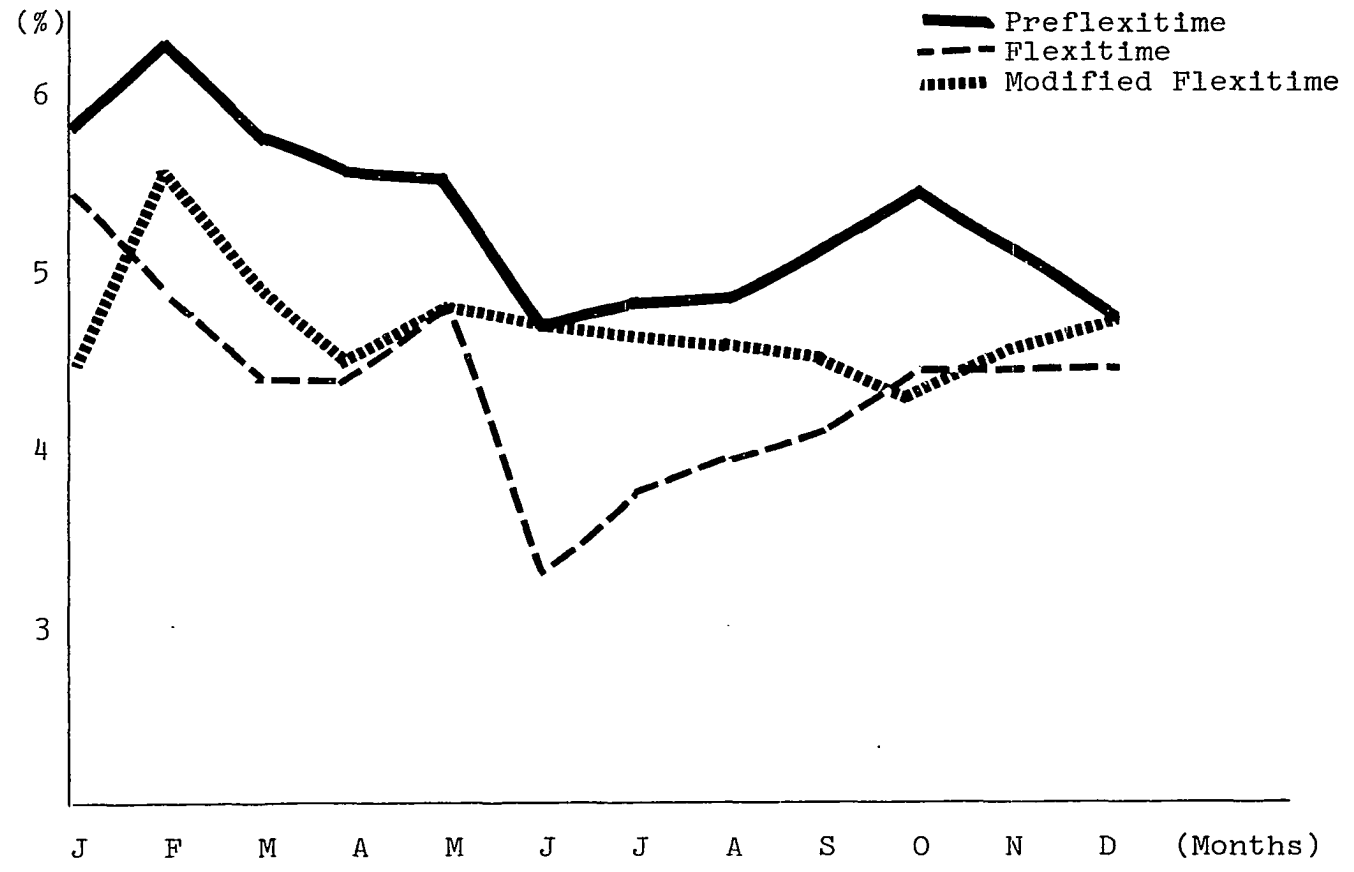


Figure 5

Table 10

Research Results for Sick Leave Usage

<u>30 Month Mean Before Flexi- ble Working Hours</u>	<u>Standard Deviation</u>	<u>22 Month Mean After Flexi- ble Working Hours</u>	<u>Standard Deviation After</u>	<u>T Value</u>	<u>P</u>
5.37	.80	4.39	.58	4.89	.01

Appendix 1 contains the actual percentages of sick leave hours used to the total number of manhours available for the respective time periods.

The hypothesis that the sick leave usage rate would be significantly reduced by the implementation of flexible working hours was confirmed.

Supervisory Behavior

The indice of control (Table 11) had a sample mean of 3.69. The t test range of significance was 3.59 to 3.79, a range which allows the conclusion the responses were significantly lower than the 4.0 mean which would have indicated the non-supervisory employees perceived the first-line supervisor's control measures no different from standard hours.

The indice of freedom had a sample mean of 4.42 with a t test range of significance of 4.50 to 4.34. Since the range does not include the 4.0 mean expected if the non-supervisory employees perceived no change in supervisory behavior, this finding indicates the non-supervisory employees believe flexible working hours changes supervisory behavior.

The hypothesis that the behavior of the first-line supervisory would significantly change following the implementation of flexible working hours (as perceived by the non-supervisory employees) was confirmed. Supervisors now allow subordinates greater responsibility, self

Table 11
Research Results for Change in Supervisory
Behavior for the Non-Supervisory Employee

	<u>Sample Mean</u>	<u>Neutral Mean</u>	<u>Gain</u>	<u>Range of Significance</u>	<u>P</u>
Control	3.69	4.0	.31	3.59-3.79	.05
Freedom	4.42	4.0	.42	4.50-4.34	.05

direction, and control for their work with less firsthand inspection than before flexible working hours.

Motivational Potential of the Jobs

The information concerning motivational potential of the jobs is shown in Table 12. For the first-line supervisors the measure of the motivational potential of the jobs had a sample mean of 4.30. The t test range of significance was 4.35 to 4.25, a range which allows the conclusion that the responses were significantly higher than the 4.0 mean which would have been expected if the findings showed no difference in the motivational potential of jobs for standard hours and flexible working hours.

The measure of the motivational potential of jobs for the non-supervisory employee was again higher than for the first-line supervisors. The sample mean was 4.48 with a range of significance of 4.57 to 4.39.

The hypothesis that the motivational potential of the jobs would be significantly increased by the implementation of flexible working hours (as perceived by both the first-line supervisors and the non-supervisory employees) was confirmed.

Organizational Effectiveness

Results for individual measures of effectiveness are shown in Table 13. The individual items of effectiveness for the first-line supervisors all had t test ranges of significance that lead to the conclusion that responses were

Table 12

Research Results for Change in Motivational
Potential of Jobs for the First-Line Supervisors
and the Non-Supervisory Employees

	<u>Sample Mean</u>	<u>Neutral Mean</u>	<u>Gain</u>	<u>Range of Significance</u>	<u>P</u>
First-Line Supervisors	4.30	4.0	.30	4.35-4.25	.05
Non-Supervi- sory Employees	4.48	4.0	.48	4.57-4.39	.05

significantly greater than the 4.0 means which would have been expected if the respondents perceived no change after the implementation of flexible working hours. The measure of productivity had a mean of 4.33 and a range of significance of 4.54 to 4.12. The measure of quality had a mean of 4.53 with a range of significance of 4.67 to 4.23. The measure of adaptability had a mean of 4.58 with a range of significance of 4.80 to 4.36. The measure of flexibility had a mean of 4.36 and a range of significance of 4.50 to 4.22.

The results for the overall effectiveness index are presented in Table 14. The measure of overall effectiveness for the first-line supervisors had a sample mean of 4.45 with a t test range of significance of 4.62 to 4.28. This finding supports the conclusion that the responses were significantly more positive than the 4.0 mean which would have been expected if the first-line supervisors perceived effectiveness the same after the implementation of flexible working hours.

Table 13 shows all the individual measures of effectiveness were higher for the non-supervisory employees than for the first-line supervisors. The measure of productivity had a mean of 4.63 with a range of significance from 4.76 to 4.50. The measure of quality had a mean of 4.70 and a range of significance from 4.85 to 4.59. The measure of efficiency had a mean of 4.81 with a range of

Table 13
Research Results for Organizational Effectiveness
Indices for the First-Line Supervisors
and the Non-Supervisory Employees

	<u>Sample Mean</u>	<u>Neutral Mean</u>	<u>Gain</u>	<u>Range of Significance</u>	<u>P</u>
<u>First-line Supervisors</u>					
Productivity	4.33	4.0	.33	4.54-4.12	.05
Quality	4.53	4.0	.53	4.71-4.35	.05
Efficiency	4.45	4.0	.45	4.67-4.23	.05
Adaptability	4.58	4.0	.58	4.80-4.36	.05
Flexibility	4.36	4.0	.36	4.50-4.22	.05
<u>Non-supervisory Employees</u>					
Productivity	4.63	4.0	.63	4.76-4.50	.05
Quality	4.72	4.0	.72	4.85-4.59	.05
Efficiency	4.81	4.0	.81	4.95-4.67	.05
Adaptability	4.89	4.0	.89	5.03-4.75	.05
Flexibility	4.71	4.0	.71	4.83-4.59	.05

Table 14
 Research Results for Overall Organizational
 Effectiveness Index for the First-Line
 Supervisors and the Non-Supervisory Employees

	<u>Sample Mean</u>	<u>Neutral Mean</u>	<u>Gain</u>	<u>Range of Significance</u>	<u>P</u>
First-line Supervisors	4.45	4.0	.45	4.62-4.28	.05
Non-supervi- sory Employees	4.75	4.0	.75	4.87-4.63	.05

significance from 4.95 to 4.67. The measure of adaptability had a mean of 4.89 and a range of significance from 5.03 to 4.75. The measure of flexibility had a mean of 4.71 with a range of significance of 4.83 to 4.59.

The individual items for the non-supervisory employees also all had t test ranges of significance that lead to the conclusion the responses were significantly greater than the 4.0 means which would have been expected if the respondents perceived no change after the implementation of flexible working hours.

The non-supervisory employees had an overall effectiveness measure with a mean of 4.75 and a t test range of significance of 4.87 to 4.43 as presented in Table 14. The measure of effectiveness for the non-supervisory employees was higher than for the first-line supervisors and was thus farther from the mean of 4.0 or the same.

Thus the hypothesis that organizational effectiveness of the groups as perceived by both the first-line supervisors and non-supervisory employees was confirmed both for the overall index and the individual measures.

Employee Motivation

Table 15 contains the results for individual motivation. The measure of individual motivation for the first-line supervisors had a sample mean of 4.68 with a range of significance of 4.75 to 4.51. Since the range does not include the 4.0 mean expected if the first-line

Table 15
Research Results for Employee Motivation
for the First-Line Supervisors and the
Non-Supervisory Employees

	<u>Sample Mean</u>	<u>Neutral Mean</u>	<u>Gain</u>	<u>Range of Significance</u>	<u>P</u>
First-line Supervisors	4.68	4.0	.68	4.75-4.51	.05
Non-supervi- sory Employees	4.96	4.0	.96	5.06-4.86	.05

supervisors perceived no change in individual motivation due to the implementation of flexible working hours, this finding indicates the first-line supervisors believe flexible working hours increases individual motivation.

The measure of individual motivation for the non-supervisory employees was higher than for the first-line supervisors. The measure of individual motivation had a mean of 4.96 with a range of significance of 5.06 to 4.86. Again the range was much higher than expected by the same 4.0 mean.

The hypothesis that individual motivation would be significantly increased by the implementation of flexible working hours (as perceived by both the first-line supervisors and the non-supervisory employees) was confirmed.

Mediating Effects of Changes in Supervisory Behavior and the Nature of the Jobs

Question 1 examined the strengths of the relationships between changes in (1) supervisory behavior and the nature of the jobs and (2) organizational effectiveness, employee motivation and sick leave usage. A stepwise multiple regression analysis was utilized to determine the strength of the relationships. The Multiple Rs for organizational effectiveness and employee motivation were highly significant ($p < .01$). The combined measures of supervisory behavior and nature of the jobs account for 42% of the

variance in changes in organizational effectiveness and 42% of the variance in changes in employee motivation. Table 16 summarizes the results of these relationships and shows changes in (1) supervisory behavior and the nature of the jobs have a significant relationship with organizational effectiveness and employee motivation. Sick leave usage is not impacted by supervisory behavior and the nature of the jobs; however, sick leave usage is impacted by flexible working hours.

Table 16

Results of Multiple Regression Analyses for Measures
of 1) Changes in Supervisory Behavior and the Nature of
the Jobs and 2) Changes in Organizational
Effectiveness, Employee Motivation and Sick Leave Usage

	R^2	F	F
Organizational Effectiveness	.42	75.31	.01
Employee Motivation	.42	77.23	.01
Sick Leave Usage	.01	.09	96.49

CHAPTER V

Summary, Conclusions and Recommendations for Future Research

Summary

The primary purpose of this research study was to investigate the relationships between the implementation of flexible working hours and measures of change in supervisory behavior, change in the motivational potential of the jobs, organizational effectiveness, employee motivation and sick leave usage. Also examined were the extent to which organizational effectiveness, employee motivation and sick leave usage were modified by changes in supervisory behavior and the nature of the jobs. The primary questions the study attempted to answer were:

1. How has the implementation of flexible working hours effected supervisory behavior, the motivational potential of jobs, organizational effectiveness, employee motivation and sick leave usage?

2. How do changes in the supervisory behavior following the implementation of flexible working hours effect organizational effectiveness, employee motivation and sick leave usage?

3. How do changes in the nature of the jobs following the implementation of flexible working hours effect organizational effectiveness, employee motivation and sick leave usage?

The subjects were 450 employees of a large southwestern military industrial complex. Sick leave usage data was obtained for the total organization. All 135 first-line supervisors with employees on flexible working hours and a sample of each first-line supervisor's employees were asked to complete a survey questionnaire. This questionnaire was developed to obtain employee perceptions of conditions since the change was made to flexible working hours.

The student's t statistical technique was used to test hypotheses 1-5 in the present study and had the following results:

1. The sick leave consumption rate was significantly reduced following the implementation of flexible working hours.

2. The supervisory behavior was perceived significantly changed by the non-supervisory employees following the implementation of flexible working hours.

3. The motivational potential of the jobs was perceived significantly increased by both the first-line supervisors and the non-supervisory employees following the implementation of flexible working hours.

4. Both the first-line supervisors and the non-supervisory employees perceived organizational effectiveness had significantly increased following the implementation of flexible working hours.

5. Individual motivation was perceived significantly increased by both the first-line supervisors and the non-supervisory employees following the implementation of flexible working hours.

Multiple regression analysis disclosed the following results within the sample concerning the relationships between changes in: (1) supervisory behavior and the nature of the jobs and (2) sick leave usage, organizational effectiveness and employee motivation:

1. Within the sample, there was a significant relationship between changes in (1) supervisory behavior and the nature of the jobs and (2) organizational effectiveness.

2. Within the sample, there was a significant relationship between changes in (1) supervisory behavior and the nature of the jobs and (2) employee motivation.

3. Within the sample, there was no significant relationship between changes in (1) supervisory behavior and the nature of the jobs and (2) sick leave usage.

Conclusions

The conclusions reached by this study may be examined only after considering that the methodology required respondents to recall their perceptions of the organization prior to the implementation of flexible working hours. The responses to the questions were analyzed by comparing the sample mean with a hypothetical mean of four which represented a response of the same. This is the response expected if participants perceived no difference between flexible working hours and fixed working hours. It was also assumed that these perceptions could be expressed accurately on ordinal scales.

Regarding supervisory behavior, the conclusion can be reached following the implementation of flexible working hours supervisory behavior is significantly changed. The first-line supervisors allow the non-supervisory employees more responsibility and self-direction with less controls and personal inspection after the implementation of flexible working hours.

It can be concluded that the motivational potential of jobs will significantly increase for both the first-line supervisors and the non-supervisory employees following the implementation of flexible working hours.

This study concluded that both first-line supervisors and non-supervisory employees perceived that organizational effectiveness was improved following the implementation of

flexible working hours. Within the effectiveness index the items of productivity, quality, efficiency, adaptability, and flexibility were all improved significantly for both the first-line supervisors and the non-supervisory employees following the implementation of flexible working hours.

It can be concluded there was a significant increase in employee motivation for both the first-line supervisors and the non-supervisory employees after the implementation of flexible working hours.

Regarding sick leave usage, the conclusion can be made that the implementation of flexible working hours significantly reduces the sick leave consumption rate.

Flexible Working Hours and Change In Supervisory Behavior

Supervisory behavior was significantly changed as perceived by the non-supervisory employees. Supervisory behavior was changed in a positive manner since the non-supervisory employees perceived less rules, regulations and other control measures and more responsibility and self direction for themselves after the implementation of flexible working hours.

Flexible Working Hours and the Change in

Motivational Potential of Jobs

The motivational potential of the jobs was significantly improved for both the first-line supervisors and the non-supervisory employees in this study. This would support the contention that flexible working hours improves the job of

the employees.

Though changes in the motivational potential of the jobs of both first-line supervisors and the non-supervisory employees were statistically significant, closer examination shows the non-supervisory employees' results had a range of significance which was enough higher ($p < .05$) to conclude the non-supervisory employees' jobs were improved much more than the first-line supervisors. However, the first-line supervisors' jobs were increased enough to support the conclusion of Golembiewski, Fox and Proehl (1980) that the positive aspects of the first-line supervisor's changed jobs were greater than the negative aspects.

Flexible Working Hours and Effectiveness

Effectiveness was significantly improved as perceived by both the first-line supervisors and the non-supervisory employees in this study. Further examination of the results shows that both the first-line supervisor and the non-supervisory employees rate productivity, although also significantly positive, lower than all other measures of effectiveness. This would indicate flexible working hours has a greater impact on quality, rated second by the first-line supervisors and third by the non-supervisory employees than on productivity.

Both the first-line supervisors and the non-supervisory employees rate adaptability highest, indicating flexible working hours aids organizations in responding to emergency

situations. One explanation for this could be that both supervisors and subordinates, due to the absence of their respective supervisors, are given the opportunity to act in situations which before flexible working hours would have been handled by their supervisors.

The non-supervisory employees had ranges of significance high enough over the first-line supervisors on overall effectiveness, efficiency and flexibility to indicate with a 95 percent confidence interval ($p < .05$) that overall effectiveness, efficiency and flexibility were much more improved for the non-supervisory employees.

Flexible Working Hours and Employee Motivation

It can be concluded there is a significant increase in employee motivation for both the first-line supervisors and the non-supervisory employees following the implementation of flexible working hours. Employee motivation is defined by an index containing indices measuring the extent to which employees feel more involved in their jobs, the extent to which time on the job for the employees passes quickly, the amount of work the employees are able to accomplish and the extent employees perform extra work not required from them. Thus the increase in employee motivation would support the advocates who contend that responsibility and autonomy are increased by flexible working hours.

Again the non-supervisory employees had a range of significance high enough above the first-line supervisors to indicate with a 95 percent confidence interval ($p < .05$) that motivation was much more improved for the non-supervisory employees. This would indicate the non-supervisory employees were much more motivated by flexible working hours than the first-line supervisors. The existence of negative aspects of the first-line supervisor's changed job (Golembiewski, Fox and Proehl, 1980) is a possible explanation for the increase in morale being lower for the first-line supervisors compared to the non-supervisory employees.

Flexible Working Hours and Sick Leave Usage

Proponents of flexible working hours have proposed sick leave usage would be reduced under flexible working hours. The explanations include ability to adjust work schedule for personal appointments such as doctor/dentist or to arrive late without having to use sick leave. While this study did not specifically research why sick leave usage would be reduced, one of the conclusions is that the utilization of sick leave is lower.

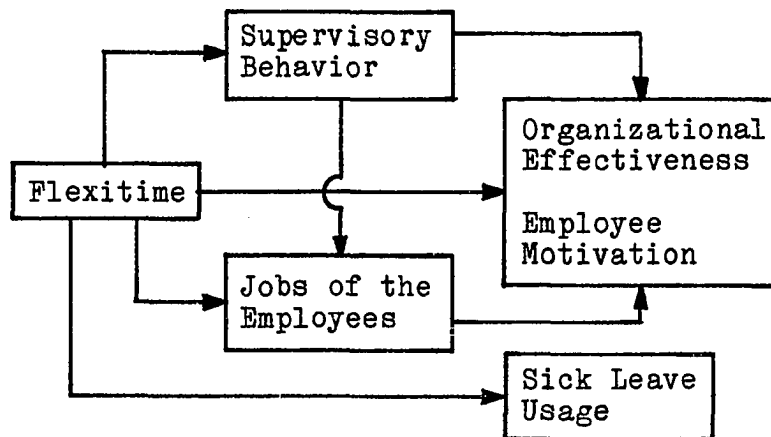
One aspect of this study did examine the impact on the individual job of flexible working hours. The results of this study are that the jobs of the employees have been improved by flexible working hours. If the employees have better jobs, they should be more satisfied on the job and

therefore, use less sick leave.

Relationship between (1) Changes in Supervisory Behavior
and the Nature of the Jobs and (2) Changes in
Sick Leave Usage, Organizational Effectiveness
and Employee Motivation

While no significant relationship existed between supervisory behavior or nature of the jobs and sick leave usage, there were significant positive relationships between (1) supervisory behavior, and nature of the jobs and (2) organizational effectiveness and employee motivation. This would indicate the manner in which the first-line supervisor reacts to the implementation of flexible working hours does impact on the employees' perceptions of how effectively the organization functions and how motivated they are. This would also indicate changes in the employee's jobs due to flexible working hours impact on the employees' perceptions of organizational effectiveness and employee motivation.

The revised model in Figure 6 describes more accurately the relationship between flexible working hours and the variables than the original model proposed in Chapter 3.



Revised Research Model

Figure 6

Recommendations for Future Research

The present study has examined some of the popular conceptions about flexible working hours. Additionally, it examined the relationship of supervisory behavior and the nature of these jobs to these areas. However, this study may have raised more questions than it answered.

Future flexible working hours research should include a longitudinal study that has both pre-test/post-test measures not only of the variable of the present study but additional measures as well. The development of additional positive quantitative measures about flexible working hours would aid in clearing up the mystery of how much flexible working hours can aid an organization.

The utilization of control groups which were compatible to the experimental groups would also allow for more

meaningful measures. The items listed above were not obtainable in this study because of management objections to the cost and time requirement.

A replication of the present study using the above concepts would be particularly meaningful if conducted at a similar facility.

One outcome of the research which would merit additional inquiry was that productivity was considered least improved of all the effectiveness indices while adaptability was the most improved. Additional research could determine if this is always true and why.

This study also determined the jobs of both the first-line supervisor and the non-supervisory employee had been improved by the implementation of flexible working hours. Additional research in how flexible working hours changes the jobs of employees needs to be accomplished.

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Appendix 1
Sick Leave Usage Rates

	J	F	M	A	M	J	J	A	S	O	N	D
75	6.8	6.5	5.7	5.9	5.8	5.4	4.8	4.9	5.1	5.6	5.3	4.3
76	6.0	6.9	6.6	6.4	6.5	4.7	4.8	4.8	5.2	5.3	5.0	5.2
77	4.8	5.4	5.0	4.4	4.2	3.9	3.7	4.2	4.3	4.6	4.7	4.6
78	6.2	5.0	4.3	4.3	4.8	3.3	3.8	3.7	3.9	4.3	4.2	4.3
79	4.7	4.7	4.5	4.5	4.8	4.7	4.6	4.6	4.5	4.3	4.6	4.7
80	4.5	5.6	4.9	4.5								

Mean = 5.4 before flexible working hours

Mean = 4.4 under flexible working hours

Mean = 4.6 after modification of flexible working hours

QUESTIONNAIRE ON THE JOB OF THE FLEXTIME EMPLOYEE

This questionnaire is designed to find out the important changes in your job since you have changed from regular working hours to flexible working hours. All information in this questionnaire will be held in strict confidence; no one in your organization will have access to individual responses. Please indicate:

1. How long you have held your present position (approximate number of months and years).
2. In your present position, how long you have worked under flexible working hours.

INSTRUCTIONS:

In the questionnaire that follows, a number of questions will be asked to determine how your job has changed since the change from regular working hours to flexible working hours. There are seven possible answers to each question. You are to answer each question by circling the number that most nearly represents the effect of this change on your job.

Since the change was made to flexible working hours,

- | | | | | | | | |
|---|-------------------|-----------|-----------------------|-----------|-----------------------|-----------|-------------------|
| 1. Some people are completely involved in the job, they are absorbed in it night and day. For other people, their job is simply one of several interests. How involved do you feel in your job? | 1
much
less | 2
less | 3
slightly
less | 4
same | 5
slightly
more | 6
more | 7
much
more |
| 2. How often are you required to stay past the time you are due to depart to accommodate upper level management? | 1
much
less | 2
less | 3
slightly
less | 4
same | 5
slightly
more | 6
more | 7
much
more |
| 3. How often does your supervisor establish the starting time of employees to insure the workload is accomplished? | 1
much
less | 2
less | 3
slightly
less | 4
same | 5
slightly
more | 6
more | 7
much
more |

Since the change was made to flexible working hours,

4. How much time does your supervisor spend in setting the amount of work that has to be put out by the subordinates?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
5. How often does your supervisor encourage your initiative when common problems arise? (for example, the supervisor might say, "Because you have shown that you can run your machine, feel free to co-rect the minor problems that crop up without getting my "OK")	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
6. How often has your supervisor set up definite step-by-step procedures for you to follow on different things?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
7. How often does your supervisor change rules and/or add new rules that affect you?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
8. How often do you find yourself thinking about problems that might come up today, tomorrow, or next week?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
9. On most days of your job, how often does time seem to drag for you?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
10. How much work are you able to accomplish?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
11. How much responsibility do you have?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more

Since the change was made to flexible working hours,

12. How difficult would you say it is to coordinate your work with other workers in your unit?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
13. How many decisions do you make in comparison to the number your supervisor makes?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
14. How often does your supervisor talk with you about a problem before making the necessary final decision?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
15. How often do you find it necessary to make decisions without first talking with your supervisor?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
16. How often does your supervisor take disciplinary actions (written warning, oral warning, layoff, firing) against employees?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
17. How much self direction do you exercise in your work when you consider the specific directions you receive from your supervisor?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
18. How often do you do some extra work for your job which isn't required of you?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
19. How many written memos or other written communications do you receive from, or send to your supervisor?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more

Since the change was made to flexible working hours,

20. How often do you communicate face-to-face with your supervisor?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
21. How often does your supervisor <u>personally</u> inspect or evaluate your work to make sure you are doing satisfactory work?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
22. How many special check points has your supervisor set up (like special forms to be completed) to make sure employees are performing their assigned tasks well?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
23. How much control do you have over your job when you consider the control exercised by your supervisor?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
24. How much autonomy is there in your job? That is, to what extent does your job permit you to decide <u>on your own</u> how to go about doing the work?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
25. To what extent does your job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more
26. How much <u>variety</u> is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?	1 much less	2 less	3 slightly less	4 same	5 slightly more	6 more	7 much more

Since the change was made to flexible working hours,

27. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

28. To what extent does doing the job itself provide you with the information about your work performance? That is, does the actual work itself provide clues about how well you are doing -- aside from any "feedback" co-workers or supervisors may provide?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

29. How often does the job provide opportunities for you to figure out how well you are doing?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

30. How simple and repetitive is your job?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

31. How often is your job one where a lot of other people are affected by how well the work gets done?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

32. How often does your job provide you the chance to completely finish the pieces of work you begin?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

33. How much does your job give you the opportunity for independence and freedom in how you do the work?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

34. Thinking now of the things produced by the people you know in your unit, how much are they producing?

1	2	3	4	5	6	7
much	less	slightly	same	slightly	more	much
less		less		more		more

Since the change was made to flexible working hours,

35. How good would you say is the quality of the services or products produced by the people you know in your unit?

1	2	3	4	5	6	7
much lower		slightly lower	same	slightly higher	higher	much higher

36. How would you rate your work unit on effeciency? That is, what kind of output do they have compared to the resources they have available?

1	2	3	4	5	6	7
much lower		slightly lower	same	slightly higher	higher	much higher

37. From time to time emergencies arise, such as crash programs, schedules moved ahead, or a break-down in the flow of work. When these emergencies occur, they cause work overloads for many people. Some work groups cope with these emergencies more readily and successfully than others. Since the change was made to flexible working hours, how good a job do people in your unit do at coping with these situations?

1	2	3	4	5	6	7
much lower		slightly lower	same	slightly higher	higher	much higher

38. How good a job is done by the people in your unit in anticipating problems that may come up in the future and preventing them from occurring or minimizing their effects?

1	2	3	4	5	6	7
much lower		slightly lower	same	slightly higher	higher	much higher

39. We have received both positive and negative comments about the impact of a flexible lunch period. How much has other people's lunch period A. Aided/B. Interfered with the accomplishment of your job?

						very
A. Aided	none	slightly	moderately	greatly	greatly	
B. Interfered	none	slightly	moderately	greatly		
					very	
					greatly	

Appendix 3

<u>Variable</u>	<u>Question Numbers</u>
<u>Effectiveness</u>	
Productivity	34
Quality	35
Efficiency	36
Adaptability	37
Flexibility	38
<u>Change in Motivational Potential of Jobs</u>	24, 25, 26, 27, 28, 29, R30, 31, 32, 33
<u>Motivation</u>	1, R9, 10, 18
<u>Supervisory Behavior</u>	
Freedom	11, 17, R21, 23
Control	3, 4, 6, 7, 16

R = Reverse Scored

Appendix 4

Organizations	Sick Rate	Freedom	Control	Jobs
1	.036	4.0	2.2	5.5
2	.049	4.4	4.1	4.0
3	.030	4.8	4.1	4.1
4	.035	4.4	4.0	4.2
5	.028	6.8	4.0	5.2
6	.044	4.9	4.1	4.7
7	.036	4.3	2.0	5.0
8	.027	4.0	4.0	4.4
9	.029	4.0	3.8	4.2
10	.014	4.3	4.0	4.2
11	.030	4.3	4.2	4.4
12	.051	4.3	4.0	4.1
13	.035	4.9	3.6	4.3
14	.035	4.0	4.0	4.0
15	.038	4.1	3.2	4.2
16	.053	4.3	4.0	4.1
17	.026	4.1	3.8	4.2
18	.036	4.9	3.9	4.8
19	.034	4.0	4.0	4.3
20	.036	4.6	3.7	5.0
21	.017	4.4	3.6	4.3
22	.037	4.6	3.3	5.2
23	.028	4.5	4.0	4.8
24	.029	4.5	4.0	4.1
25	.029	4.0	4.0	4.0
26	.032	4.9	3.2	5.0
27	.039	5.4	1.9	5.5
28	.014	4.8	3.6	5.2
29	.056	4.0	4.0	4.0
30	.012	4.0	4.0	4.0