The Relationship Between Absenteeism and the Amount of Overtime Worked in Various Job Classifications in a Metal Fabrication Plant

Thomas D. Hopkins
Western Michigan University

Follow this and additional works at: https://scholarworks.wmich.edu/dissertations

Part of the Educational Assessment, Evaluation, and Research Commons, and the Educational Leadership Commons

Recommended Citation
THE RELATIONSHIP BETWEEN ABSENTEEISM AND
THE AMOUNT OF OVERTIME WORKED IN
VARIOUS JOB CLASSIFICATIONS IN
A METAL FABRICATION PLANT

by

Thomas D. Hopkins

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Educational Leadership

Western Michigan University
Kalamazoo, Michigan
April, 1990
THE RELATIONSHIP BETWEEN ABSENTEEISM AND
THE AMOUNT OF OVERTIME WORKED IN
VARIOUS JOB CLASSIFICATIONS IN
A METAL FABRICATION PLANT

Thomas D. Hopkins, Ed.D.
Western Michigan University, 1990

A causal comparative study was conducted to test the relationship between absenteeism and the amount of overtime worked in various job classifications. The study was conducted in a metal stamping plant. The 4.5-year study tested absence percentage data for the three classifications of skilled, service, and nonskilled employees. The study supported the hypothesis that there is a relationship between absenteeism and job classification. The study could not support either a relationship between the amount of overtime worked and absenteeism or a relationship between the interaction of job classification and overtime worked on the absentee rate. Implications were discussed pertaining to the unique environment of the study and to possible additional study on absenteeism and its possible relationship to job classification and overtime in other environments.
INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI
UniversityMicrofilmsInternational
ABell&HowellInformationCompany
300NorthZeefRoad,AnnArbor,MI48106-1346USA
313-761-4700800-521-0600

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
The relationship between absenteeism and the amount of overtime worked in various job classifications in a metal fabrication plant

Hopkins, Thomas Dell, Ed.D.

Western Michigan University, 1990
DEDICATION

Within society there are those people,

... who possess the spark of ingenuity which begins creative thought. They originate conceptual images that give birth to change. These people have a unique gift.

To Dr. Walter Hoeksema, I dedicate a portion of this endeavor for he cultivated the idea to begin this task by insisting that I could achieve it.

... who possess the ability to take new ideas and innovate them into practical application. They are the "risk takers" who promote change. These people have a necessary gift.

To Mr. Preston Hopkins, I dedicate a portion of this endeavor because of his example and encouragement to "try!" He has taught me that there is no shame in failing to succeed, only shame in not making the attempt.

... who possess the spirit of individualism that forces them to step forward and be different. They are the evangelists who preach the gospel of change. These people have a significant gift.

To Mrs. Ruth Hopkins, I dedicate a portion of this endeavor because of her example of self-assurance and commitment. She taught me to be content with myself while always striving to improve. Growth is natural to life and education is a life-long quest.

... who possess that social awareness that makes them sincerely concerned for the rights and feelings of their fellow mankind. These people have a special gift.

To Mrs. Jenny Vollink, I dedicate a portion of this endeavor because she is truly the most caring person I know. Her example has taught me to temper my emotions and exploits by consideration for those around me.
... who possess the blend of creativity, innovation, self-reliance, and social consciousness. These gifts combined with the catalysis of charismatic managerial techniques can be transformed into direction that other people will follow. This is the essence of leadership. These people then assume responsibility.

To Peggy A. Hopkins, I do not dedicate but rather share this endeavor. Without our cooperative effort, the elements of leadership would be isolated from each other. You are the catalysis that transformed this endeavor into an accomplished task. It is as much yours as mine.

And to my children, Patrick and Libby, my hope is that this accomplishment will serve as an inspiration for them to strive toward their formal education and the pursuit of knowledge.

May God bless you all as you have touched my life.
I wish to thank the faculty and staff of Western Michigan University for their encouragement and efforts on my behalf during my participation in this doctoral program.

I am especially indebted to Dr. Charles Warfield for his continual optimism and unbending support for my program. Dr. Warfield displayed a unique understanding of the educational systems relationship to the industrial community which is such a large part of my life. A heartfelt thanks to Dr. Steven Rhodes and Dr. Robert Brinkerhoff for their advice, counsel, and direction, as well as support in working so well with me as the other members of my committee.

I am personally thankful to my family and friends who extended support and understanding.

Thomas D. Hopkins
# TABLE OF CONTENTS

ACKNOWLEDGMENTS ............................................ ii  
LIST OF TABLES ............................................ vii  
LIST OF FIGURES ............................................... viii  

CHAPTER  

I. INTRODUCTION AND STATEMENT OF THE PROBLEM ............. 1  
   Statement of the Problem ................................ 1  
   Operational Definition of Variables ....................... 4  
      Absenteeism ........................................ 4  
      The Amount of Overtime Worked ........................ 5  
      Job Classifications ................................. 5  
   Research Objectives ..................................... 7  
   Conceptual Framework ................................... 8  
      Introduction ...................................... 8  
      Job Satisfaction--Personal Characteristic  
         Themes ........................................ 8  
      Absence Culture .................................. 10  
   Organization of Study .................................. 12  

II. REVIEW OF THE LITERATURE ............................. 14  
   Assumptions and Absentee Theory ......................... 14  
   Job Satisfaction and Absenteeism ....................... 16  
      The Complexity of Job Satisfaction .................. 17  
      The Indirect Effect of Job Satisfaction ........... 20  
      Multivariate Analysis of Job Satisfaction .......... 21  
   Problem of Inconsistency ............................... 22
Table of Contents—Continued

CHAPTER

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Characteristics and Absenteeism</td>
<td>23</td>
</tr>
<tr>
<td>Introduction</td>
<td>23</td>
</tr>
<tr>
<td>Individual Trait Analysis</td>
<td>24</td>
</tr>
<tr>
<td>The Complexity of Personal Characteristics</td>
<td>26</td>
</tr>
<tr>
<td>Interaction Between Themes A and B</td>
<td>27</td>
</tr>
<tr>
<td>Attendance Motivation and Substitutability</td>
<td>28</td>
</tr>
<tr>
<td>Individuality Interactions</td>
<td>29</td>
</tr>
<tr>
<td>Organizational Interaction</td>
<td>31</td>
</tr>
<tr>
<td>Absenteeism and Other Forms of Withdrawal</td>
<td>32</td>
</tr>
<tr>
<td>Absenteeism and Organizational Influences</td>
<td>36</td>
</tr>
<tr>
<td>Absence Culture</td>
<td>36</td>
</tr>
<tr>
<td>Psychological Contract</td>
<td>41</td>
</tr>
<tr>
<td>Individual Organizational Relationship</td>
<td>43</td>
</tr>
<tr>
<td>Job Involvement</td>
<td>44</td>
</tr>
<tr>
<td>Introduction of Overtime</td>
<td>46</td>
</tr>
<tr>
<td>Overtime and Absence</td>
<td>48</td>
</tr>
<tr>
<td>Job Classification</td>
<td>51</td>
</tr>
<tr>
<td>III. DESIGN AND METHODOLOGY</td>
<td>54</td>
</tr>
<tr>
<td>Introduction</td>
<td>54</td>
</tr>
<tr>
<td>Operational Definitions of Research Design Variables</td>
<td>55</td>
</tr>
<tr>
<td>Populations</td>
<td>55</td>
</tr>
<tr>
<td>Absenteeism</td>
<td>55</td>
</tr>
<tr>
<td>The Amount of Overtime Worked</td>
<td>56</td>
</tr>
</tbody>
</table>
Table of Contents—Continued

CHAPTER

Job Classifications ............................................................ 56
Data Collection ........................................................................ 57
Methods of Analysis .................................................................. 58
Initial Design ........................................................................... 58
Expanded Design ....................................................................... 59
Operational Hypotheses .......................................................... 61
Validity .................................................................................... 63
Internal Validity ......................................................................... 63
Limitations of Design ............................................................... 64
Limitations in Data ..................................................................... 65

IV. RESULTS .............................................................................. 69

Introduction and Format .......................................................... 69
Comparisons of Absence Rates Across Job Classifications .......... 70
Correlation of Absenteeism and Overtime Worked ..................... 80
The Interaction of Classification and Overtime on Absenteeism ... 84

V. DISCUSSION .......................................................................... 90

Relationship Between Classification and Absenteeism ................. 92
The Relationship Between Absenteeism and the Amount of Overtime Worked ......................................................... 94
The Interaction of Overtime and Job Classification on Absence Rates ........................................................... 98

APPENDICES ............................................................................ 100

A. Overtime Versus Absenteeism, Department 11, 1986 .............. 101

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
# Table of Contents—Continued

B. Overtime Versus Absenteeism, Department 21, 1987 .... 103  
C. Overtime Versus Absenteeism, Department 61, 1986 .... 105  
D. Overtime Versus Absenteeism, Department 65, 1987 .... 107  
E. Letter From Human Subjects Institutional Review Board . 109  

BIBLIOGRAPHY .............................................. 111
# LIST OF TABLES

1. Example of Observed Data Displayed in Weeks  
   (Department 11—Pressroom—Nonskilled) .................. 58

2. Summary of Analysis of Variance of Absentee Percentage  
   for Skilled, Service, and Unskilled Job Classifications Including Holiday Weeks .................. 71

3. Summary of the Results of $t$ Test (LSD) for Absence  
   Mean Percentage by Job Classification Including Holiday Weeks .......................... 72

4. Summary of Analysis of Variance of Absentee Percentage  
   for Skilled, Service, and Unskilled Job Classifications Excluding Holiday Weeks .................. 73

5. Summary of the Results of $t$ Test (LSD) for Absence  
   Mean Percentage by Job Classification Excluding Holiday Weeks .................. 74

6. Comparison of Mean Percentage and Standard Deviation  
   With and Without Holiday Weeks by Classification ........ 75

7. Yearly Absence Percentage Mean by Classification ........ 78

8. Correlation Coefficients of Absenteeism and Overtime  
   by Departments Including and Excluding Holidays ........ 81
### LIST OF FIGURES

1. Absenteeism by Overtime for Three Classifications
   Demonstrating No Interaction Between Variables .......... 86

2. Absenteeism by Overtime for Three Classifications
   Demonstrating Interaction of Variables ................... 86

3. Absenteeism by Overtime for Three Classifications
   Based on Recorded Data .................................... 87
CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Statement of the Problem

In recent years unexcused absenteeism in industry has become a major expense for many companies. Last year, it is estimated that absenteeism drained between $30 billion and $40 billion from the nation's economy (Greene, 1988). Few companies face a larger challenge on this score than General Motors, which routinely loses 9% of employee payroll hours at a cost of $1 billion a year (Greene, 1988).

By its own admission, General Motors has reported that it operated with an average absentee rate of 8.8% in 1987. The financial implication of this amount of absenteeism was equal to nearly one-third of the auto maker's 1986 earnings ("Absenteeism Costs," 1988). These costs were created by the need to sustain productivity when absent employees must be replaced by supplemental workers or unscheduled overtime. The choice between hiring additional employees or working unscheduled overtime is often difficult. Both alternatives add cost and are therefore undesirable.

The domestic auto manufacturers, Ford, Chrysler, and General Motors, are limited with regard to adding additional employees as absentee replacements because of recent union/management agreements aimed at guaranteed employment in a shrinking work force (General Motors Corporation, 1987). Any additional manpower must not only
satisfy an immediate need, but also must be an integral part of future planning for manpower needs. The addition of a typical non-skilled production worker is an expense to General Motors of $45,000 in annual wages and benefits (General Motors BOC Kalamazoo, 1988). Once seniority is achieved, these employees are eligible for layoff benefits that can equal 95% of their normal compensation. Therefore, hiring personnel to replace an absent employee not only adds expense immediately but also adds possible liability in the future even if the rate of absenteeism would decrease.

The alternate choice of compensating for absenteeism by means of working overtime is equally unattractive. The obvious negative impact for the employer is to pay premium pay for work that was done normally for regular pay. But overtime, like personnel replacement, may have additional longer term costs when used regularly to complete quota deadlines and meet production schedules. Overtime and extended work weeks are not only expensive because of premium compensation but are also often perceived as a contributor to absenteeism (Ehrenberg, 1970). The extended hours cause general fatigue. Absenteeism is one way to relieve this fatigue. Also the extended hours result in premium wages. The premium pay is seen to alleviate the necessity of continual daily attendance to insure financial stability. Thus, absenteeism not only relieves the fatigue but does so with little or no monetary consequence if the employee receives premium overtime pay. Thus, it is easy to understand the emergence of the general assumption of managers that absenteeism and overtime propagate each other (Ehrenberg, 1970).
One purpose of this study will be to test the assumption that absenteeism and overtime are positively related. However, such a relationship does not insure that all groups of employees behave similarly with regard to overtime and absenteeism. Thus, it is necessary for this study to include the factor of job classification as an additional variable.

Employees can be grouped in an infinite variety of categories with reference to particular personnel characteristics. Group analysis by age, pay, sex, and job type or classification are common (Blau, 1985; Chadwick-Jones, Nicholson, & Brown, 1982; Clegg, 1983). Job classification is of interest in this study because differences have been observed between job classifications and other variables, such as absenteeism (Klein, 1986), job satisfaction (Steers & Rhodes, 1978), job involvement (Lawler & Hall, 1970), and employee withdrawal (Clegg, 1983). Since differences have been found between job classification groups on a variety of variables, including general absenteeism, and if a relationship exists between absenteeism and overtime, it is possible that there may be differences between that relationship and job classification groups.

If differences were found between the relationship of absenteeism and overtime across job classification groups, this would have implications on the decision-making policy regarding absenteeism. For example, if the increase in absenteeism were found to be associated with increased overtime for a particular job classification, the implication would be to add personnel to decrease overtime and help control one cause of absenteeism. Conversely, if decreased
absenteeism were found to be associated with increased overtime for a particular job classification, the implications would be to structure jobs with more overtime.

Therefore, the questions to be addressed in this study are whether significant differences in absenteeism exist across job classifications; whether absenteeism and overtime have a relationship to each other; and if this relationship exists, is this relationship different across different job classification groups. To clarify these questions, a working definition of each of these variables must be understood.

Operational Definition of Variables

**Absenteeism**

Absenteeism will be defined in terms of manageable absenteeism. This is the amount of missed time exclusive of sick leaves, bereavements, paid absence, holiday, union business, and vacation. Manageable absenteeism is often referred to as absent without leave (AWOL) absences in the literature ("Case of the A.W.O.L. Autoworker," 1970; Klein, 1986; Williams, 1972). The measurement of absenteeism is based on a combination of employee "in" punches and supervisor codings for appropriate absence reason. Although many studies (Muchinsky, 1977; Saal, 1978) used in the literature search state insecurities with regard to data collection on absenteeism, proper numbers, and supervisor coding, the process at General Motors validates data that are collected because of the contractual absenteeism
incentive plan that began in 1984 and is functioning at present. This program based rewards on decreased absenteeism and thus made coding a major concern for supervision and committee persons, as well as employees. This type of pressure has given new commitment to accurate records, which should lead to accurate data for the study.

The Amount of Overtime Worked

The amount of overtime worked will be based on the amount of hours worked in excess of 40 hours a week as a mean for the employees in a specific job classification. The amount of overtime hours worked will be categorized into three groups: minimal, heavy, and maximum. Minimal overtime will be defined as a classification mean rate of overtime worked of 0 to 4 hours per week. Heavy overtime will be defined as a classification mean rate of overtime worked of 4 to 10 hours per week. Maximum overtime will be defined as a classification mean rate of overtime worked of 10 hours or more per week. The overtime as well as the amount of absenteeism was measured weekly over a 4.5-year period from 1985 through 1989. This time period was chosen because of currency of the data as well as the capacity to contain fully a more or less complete business cycle of high and low demand for production.

Job Classifications

The term job classification is defined as a subset of the term personal characteristic. Personal characteristics such as age, race, tenure, job type or job classification, sex, education level, etc.
are often used as variables in studies to find causal relationships for absenteeism. These studies will be discussed in the literature review. Job classification is a personal characteristic. Job classification definition can differ with the populations studied. Job classifications for purpose of this study will be grouped into three categories: production, service, and skilled. The classifications will only address unionized hourly employees in metal fabrication plants. Descriptive titles for jobs range widely from plant to plant with one common understanding. The skilled trade classifications, whatever their plant titles, have all completed or are engaged in formalized employee in training (EIT) or apprenticeship training programs. Upon completion, they attain certification as journeymen tradesmen. Their job descriptions include support service for production, construction, and mechanical tryout. Examples of typical skilled trades employees include: (a) toolmaker, (b) diemaker, (c) machinist, (d) electrician, (e) millwright, (f) welder maintenance, and (g) pattern maker. The functions of these groups of employees are mutually agreed upon by General Motors and United Auto Workers.

The unskilled classifications are those employees normally associated with the direct production activity. Examples of typical unskilled employees include: (a) punch press operator, (b) stock laborer, (c) productive helper, (d) salvageman, and (e) welder operator.

The service classifications are those employees normally associated with supportive production functions. There are classifications that require little or no formalized training, yet are not
specifically tied to the production of a product. Examples of typical service employees include: (a) material handling personnel, (b) inspectors, (c) shipping personnel, (d) janitors, and (e) machine cleaners.

Research Objectives

As has been suggested above, absenteeism is a costly problem. It is a problem that may be related to overtime; but even that relationship may be affected by another variable, such as the personal characteristic of job classification. It is the relationship among these three variables and the interaction among these three variables that is significant. For the purpose of this study, absenteeism will be the dependent variable and overtime and job classification will be the independent variables.

This study is designed to answer the question of the existence of differences in absenteeism across the independent variables of job classification and the amount of overtime worked as operationally defined. The objectives of the study are to determine whether (a) different job classification groups do have a difference in absentee rates, (b) if the amount of overtime worked is related to absentee rates, and (c) what possible interaction between amount of overtime worked and job classification may result in absentee rate changes and effect staffing stability.
Conceptual Framework

Introduction

In an attempt to understand how the research objectives of this study blend with and evolve from the literature of absenteeism, it is necessary to discuss the conceptual framework of the existing absence literature. Such a discussion will not only establish a logical framework for this paper's objectives but also be helpful in the literature review to follow.

The literature review is somewhat diversified. It has developed out of various theories and themes. The review begins with some assumption theories because of these theories' early chronological order. The assumption theories were based on organizational assumptions. They were also relatively isolated concepts until after the main two themes of absentee literature were firmly established.

Job Satisfaction—Personal Characteristic Themes

Reviews of the literature (Muchinsky, 1977; Steers & Rhodes, 1978) suggest that two main themes have dominated research of absenteeism. These themes are categorized as, (a) the relationship between job satisfaction and the absence rate, and (b) the relationship between personal characteristics and absence rate.

The job satisfaction relationship theme is based on the assumption that employees will be absent from any organizational or individual function that is abrasive or dissatisfying (McShane, 1984). Job satisfaction may, however, be different for different employees.
Johnson and Peterson (1975) suggested that among the factors that influence job satisfaction are such concepts as job enrichment, ownership, supervisor interrelations, and sense of employee participation.

Significant relationships between absence and personal characteristics such as race, sex, tenure, job function or classification, and many other characteristics seem to be universal but are extremely difficult to understand (Nicholson & Johns, 1985). Because there is no theory that underlies these associations, they have not stimulated any profound sophisticated research. Even though no theoretical mainstream has been developed, relationships exist. The relationship between the personality characteristics of job classification and absence rate is particularly significant.

Thus both job satisfaction and personal characteristics become more diverse concepts due to the complexity of the factors and subsets of factors that can be included in each of these themes. The complexity of definition would be one rational explanation for the apparent contradiction in results often seen in parallel studies. The studies of Dittrich and Carrell (1979) and Nicholson, Brown, and Chadwick-Jones (1976) give examples of this apparent contradiction in the analysis of the relationship between absenteeism and job satisfaction.

These two central themes of absenteeism also interact between themselves as demonstrated in Porter and Steers (1973) where the same sample displayed positive relationships between personal factors and withdrawal and job satisfaction and absenteeism. Yet, the authors
made no attempt to establish an interaction relationship in this study. Subsequent studies (Clegg, 1983; Steers & Rhodes, 1978; Youngblood, 1984) have demonstrated the interrelationship and interaction of personal factors and job satisfaction within a variety of definitions and contexts.

The interrelationship of these two themes is important because for the first time absenteeism was observed as both an individual and organizational behavior. The organizational or group influence of a particular job classification (personal characteristic subset) may affect normal job satisfaction driven behavior to attendance. This type of behavior caused by organizational, group, or common job classification group was evident in the literature of absenteeism and organizational withdrawal.

The progression is made, therefore, from two unique themes of absenteeism that were evaluated separately with seemingly contradictory results to a more complex model of interaction between personal satisfaction and a personal characteristic, such as job classification. This interaction was an outgrowth of the organizational concept of group behavior or group culture.

Absence Culture

Perhaps because of the complexity of the absence two-theme approach and the dissatisfaction for verified causal results, a variety of new theoretical approaches have been introduced. Absence from work has been identified as a stress reaction (Parkes, 1987), an economic response for increase demands for nonwork time (Youngblood,
1984), and almost everything else from marital and transportation problems to the need for extended time off for modern hair styling ("Absenteeism Just Won't Quit," 1970). However, recent research shares with traditional theme oriented research a common limitation—the identification of absenteeism as a personal act in isolation from the cultural conditions of the organization within which the individual functions. Nicholson and Johns (1985), in an attempt to introduce the social aspect of absenteeism to complement the individual differences approach, initiated the two concepts of absence culture and psychological contract.

Some patterns of behavior are common to members of a particular culture and certain behaviors are interpreted similarly by them. Hill and Twist (1955) first used the concept of culture to explain how absences of different types are associated with different phases in employee tenure. The relationship between tenure and absenteeism resulted in learned understanding of operational rules, norms, and expectations from within the organization. Absence culture is defined as "the set of shared understandings about absence legitimacy . . . and the established 'custom and practice' of employee absence behavior and its control" (Johns & Nicholson, 1985, p. 398).

Thus, absence culture within the framework of the social organization could and no doubt does effect both the relationship of absenteeism to job satisfaction and personal characteristics, such as job classification.

This study builds upon this conceptual framework by introducing a third variable, the amount of overtime worked. The variable of
overtime would also be affected by both the individual job satisfac-
tion theme and the organizational personal characteristic theme.
That is, for specific personal characteristics different groups may
react differently to overtime. Therefore, particular job classifica-
tions may react differently to overtime with regards to absenteeism.
It is the affect of overtime on absence rates for different absence
cultures that is of particular interest in this study. Such an
analysis should help to clarify seemingly contradictory results from
past studies and give implications for conceptual ideas of the future
as well as practical applications in the work place. To achieve
these goals, an understanding of the literature from which the con-
ceptual framework was established is necessary.

Organization of Study

Presented in Chapter I are an introduction to the study, the
statement of the problem and its significance, the operational defi-
nition of key variables, the conceptual framework into which the
study fits, and the organization of the study.

Chapter II is a selective review of the literature as it per-
tains to the variables of absenteeism, overtime, and their relation-
ship to job classifications.

Chapter III contains the operational hypothesis and the methods
and techniques used to collect and analyze the data, including a
discussion of the research design, the populations used, and safe-
guards of validity.
Presented in Chapter IV are the analysis of data and the testing of the operational hypothesis.

Chapter V contains the conclusions about the purposes of the study in reference to results of the tested hypothesis and recommendations for future research.
CHAPTER II

REVIEW OF THE LITERATURE

Assumptions and Absentee Theory

The literature of absence analysis has been approached in various formats. Goodman and Atkin (1984) categorized the literature by the underlying theoretical assumptions made about absence behavior. This analysis, by assumptions made, is discussed first because it developed from some of the earlier literature (Hill & Twist, 1955; Vroom, 1964) that is still influential. The assumption literature does not fit neatly within the two main themes of job satisfaction and personal characteristics, but is prevalent enough that it should be discussed. Goodman and Atkin (1984) along with Nicholson, Brown, and Chadwick-Jones (1977) suggested a combination of the following four categories of assumptions:

1. Absence is an approach/avoidance behavior. Approach-avoidance behavior is associated with job satisfaction studies such as Adler and Golan (1981), Cheloha and Farr (1980), Lawler and Hall (1970), and Steers and Rhodes (1978). All the above studies attempt to relate job satisfaction with absentee rates.

2. Absence is a result of a decision process. The decision-making assumption is based on the individual's decision on any given day whether to attend work. Authors such as Allen and Higgins (1979), Dilts and Deitsch (1986), and Vroom (1964) all advocated the
belief that individuals make decisions based on value "trade-offs." These trade-offs can be as simple as work versus leisure or more complicated by attitudes and expected behavior.

3. Absence is an outcome of an adjustment process. As the job conditions change, one renegotiates the psychological contract in response to the job changes. Hill and Twist (1955) equated absenteeism with changing length of service, while Johns and Nicholson (1982) equated absenteeism with social controls by means of rewards and punishment by group members.

4. Absence is a habit. Goodman and Atkin (1984) suggested that a few workers (the absence prone) are responsible for most absences occurring because of an absentee habit. Garrison and Muchinsky (1977) and Waters and Roach (1979) were unable to substantiate a direct habit to absence correlation even though the concept is intuitively appealing.

The categorization of studies by assumptions was redefined by Popp and Belohlav (1982). These authors suggested several problems that seem to exist in the prevailing body of absentee literature. The main concerns relate to the methods of analysis used and the basic assumptions on which the research was based. Steers and Rhodes (1978) as well as Popp and Belohlav (1982) suggested that research studies have largely employed bivariate correlational analysis. This makes illumination of extraneous variables almost impossible. A second analytical problem was the definition of absenteeism itself and thus its measurement. Other literature has provided some clarification showing at least three ways in which absences can be
measured: total days lost, frequency of absences, and attitudinal or 1-day absences (Nicholson et al., 1976).

Regardless of how the literature of absence is categorized, there is "little in the way of comprehensive theory building" (Steers & Rhodes, 1978, p. 392). Each study reflects only on the variables analyzed in isolation from the other studies and without a logical conceptual framework. Indeed it is difficult to unite two dimensional analyses to account for seemingly contradictory, or at least non-supportive, data from various studies.

Because of this lack of generalized theory building ability, a more traditional categorization is explored. These traditional categories are examined with reference to the attempt of Nicholson and Johns (1985) to explain variation in absence behavior within and between organizations and their subunits. In the process of this analysis, an historical understanding of what Muchinsky (1977) and Steers and Rhodes (1978) identified as the two major themes of absentee literature are reviewed. The first is the relationship between job satisfaction and absence. The second involves the relationship between personal characteristics, such as job classifications, and absence. In addition, the interaction of these two themes must be understood for further clarification.

Job Satisfaction and Absenteeism

The notion that there is a significant relationship, indeed an almost causal relationship between job satisfaction and absenteeism, is very easy to believe. There is something innately logical in the
mind set that employees who were satisfied should want to participate in work and those employees who were not satisfied with their work would not desire to participate. The early literature, which contained untested theory, expanded on this seemingly rational concept. Although not necessarily documented, literature (Champagne & Tausky, 1978; Kilbridge, 1961; May, 1979) popularized the absentee-job satisfaction linkage. This type of nondocumented literature is very common reading in most industry or commercial settings and can be found in most office waiting rooms or in corporate correspondence across the nation. The belief that frequent absence from work is a consequence of job dissatisfaction was widespread among managers and social scientists. Chadwick-Jones et al. (1982) stated that it "made sense" for managers to believe that happy workers will be at work more regularly and that unhappy workers would avoid work because it complemented the then current rise in humanistic management. Thus, it was normal for not only extensive studies on the relationships of absenteeism to work content, but also to (a) satisfaction of co-worker attitudes, (b) satisfaction of supervisor-employee relations, (c) satisfaction of wages and compensation, (d) satisfaction of personal growth within the job and skill development, and (e) satisfaction with the organizational policies and mechanisms that demonstrate organizational concern for personal growth and placement.

The Complexity of Job Satisfaction

In their analysis of the satisfaction absenteeism literature and their own data, Metzner and Mann (1953) gave one of the first
axioms of absenteeism interpretations. They summarized that there is no simple relationship between absence and work attitudes for all employees. Metzner and Mann went further to state that they found no data that attitudes toward any aspect of the work situations related to absenteeism for any group of people. They postulated that certain aspects of work related satisfaction might result in presence or absence on an individual basis. Regardless of this early 1953 study, most researchers spent the next two decades attempting to justify a causal relationship or at least correlational relationship between absenteeism and some form of satisfaction. The results are inconclusive; sometimes job satisfaction and absenteeism are correlated, other times they are not (Porter & Steers, 1973). In their literature reviews (Muchinsky, 1977; Porter and Steers, 1973), the numbers of seemingly professional studies with contradictory results were puzzling. In an effort to explain the confusing data, Ilgen and Hollenback (1977) suggested two theoretical explanations to account for the low correlations observed in most studies involving absenteeism and job satisfaction. The first considered absence behavior as a function of job satisfaction. These were described as internal (the individual's value system) and external (co-workers and job structure), as well as demographic variables. The three variables were considered as moderators of the absenteeism-job satisfaction relationship. The second explanation considered absenteeism as a function of role pressures and job satisfaction in an additive rather than a moderated fashion. Only the second explanation, the additive consideration, was supported.
The significance of this study was that it approached job satisfaction in a more macroanalysis instead of a bivariate concentration. What was important is that job satisfaction was a very complex term and not easily isolated into aspects of or components of job satisfaction. This concept was inadvertently revealed by Ilgen and Hollenback (1977) in attempting to reason away the lack of correlation and stating that job satisfaction was extremely complex and all the moderating variables could not or may not have been adequately identified or measured.

The complexity of absence and job satisfaction was broadened by the study of Nicholson et al. (1976). Results of this study showed, in separate correlation matrixes between satisfaction and job attendance, the lack of relationship was not attributable to artificial or extraneous influences. It was concluded that the job dissatisfaction theory of absenteeism was empirically unsupportable. The results demonstrated only negligible relationship after the partialling out of personal factors. It was further concluded (Nicholson et al., 1976) that absence itself can take a multitude of forms and that "motivational withdrawal" from the workplace is not fully exposed by the commonly understood term of absenteeism. The common view of absence as a pain-reductive response was naive, narrow, and unsupportable. Thus, the problem of documenting the relationship between absenteeism and satisfaction was not simply a matter of measurement, but more a problem of complexity.
The Indirect Effect of Job Satisfaction

An alternative hypothesis was then advanced by Cheloha and Farr (1980), Clegg (1983), and Steers and Rhodes (1978), that the relationship between job satisfaction and employee absenteeism is not direct. Instead, these authors suggested personality characteristics, biographical and situational variables, such as job involvement, moderate the effect of job satisfaction. These studies confirmed and expanded Ilgen and Hollenback (1977). The term job involvement is defined by the authors as an emotional attachment or commitment to the job. This commitment is a combination or some function of personality traits, employment relationship, work orientation, and work involvement.

The original concept of job satisfaction has been greatly enriched over an extended period of time. Unfortunately, even this expanded view of job satisfaction did not always produce consistent results.

 Concurrent with the previously mentioned studies, which found significant correlation between absenteeism and this new enriched definition of job satisfaction, Dittrich and Carrell (1979) presented a longitudinal study that examined the relationship between absenteeism and job involvement in the field setting. Little support was given to job satisfaction on any description or aspect as a predictor of absenteeism with one exception, perceived equitable treatment of supervisors correlated negatively.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Multivariate Analysis of Job Satisfaction

In an attempt to salvage the job satisfaction theme, Saal's (1978) studies took an even broader approach. Saal enlarged the concept of job involvement beyond the bivariate correlations to multivariate analysis. The multivariate analysis suggested, however, that job involvement was better understood by dividing "personal" characteristics into personal demographics (age, sex, etc.) and personal-psychological (higher order needs, Protestant work ethic endorsements, etc.) variables.

The definition of job satisfaction had now evolved into such a multiaspect and multidefined term that contradictory results were probably inevitable. Scott and Taylor (1985) reasoned that sampling errors, scale inadequacies, and the use of different measures of types of job satisfaction and absences were the reasons for inconsistencies in previous empirical research that examined any relationship between absenteeism and job satisfaction. Their findings suggested the strongest association seems to be between employee absenteeism, measured by both frequency and direction, and satisfaction with the work itself. However, no causal relationship could be inferred as the correlation explained only slightly over 2% of the recorded variance. This correlation was found through a meta-analytic procedure designed specifically to be rigorous with regard to measurement.
Problem of Inconsistency

Throughout the literature the problem of measurement continues to plague researchers. Hackett and Guion (1985) questioned the validity and reliability of most past studies, stating that little or no work has been done on the assessment of validity of absence measurement with the exception of the work done by Chadwick-Jones et al. (1982). Hackett and Guion (1985) also discussed the term definition problem as well as the seemingly contradictory finding of bivariate versus multivariate studies.

Even as some authors were attempting to make rational order out of an ever broadening theme and somehow reform back to simpler definition and more precise measurement, other authors such as Brooke (1986) and Saal (1978) continued to broaden classification adding complexity while giving minimal results. Brooke expanded job satisfaction into the elements of: (a) routinization or task repetitiveness; (b) centralization or the concentration of power within an organization; (c) pay, referring to money or its equivalent; (d) distributive justice or the relationship between performance and rewards; (e) role ambiguity or the clarifications of expectations; (f) role conflict or the degree of incompatibility of roles; (g) role overload or amount of time exceeded by work demands; (h) work involvement or a personal code of ethics with regard to work; (i) organizational permissiveness or the degree absenteeism is accepted by the organization; (j) kinship responsibility or obligations outside the organization; (k) job satisfaction of the actual work; (l) health
status or the physical and mental health of the individual; and (m) organizational commitment or loyalty to the firm.

This is probably the most expanded view of the theme of job satisfaction and it is apparent from the above definition that any term that is this complex would be difficult to measure, isolate, or correlate with any other variable.

Saal (1978) described the not too appealing but conceivable state that many of the correlational results, both bivariate and multivariate, reflect nothing more than shared error variance. A relative consideration is that the absence of an involvement performance relationship may be pragmatically (although not theoretically) irrelevant. The review complements Chadwick-Jones et al. (1982) on the theme of job satisfaction and absenteeism and reveals that it is not possible to establish more than a weak connection between the two variables; the evidence is mixed, even confusing. Some studies have reported significant inverse relationships between absence and job satisfaction, but there are others showing null or positive relationships. Even where the variables are significantly related, the relationships are invariably tenuous.

Personal Characteristics and Absenteeism

Introduction

The second theme of historical significance from the literature of absenteeism is the relationship of absenteeism with personal characteristics. As with the literature concerning absenteeism and job
satisfaction, the literature on personality characteristics such as sex, age, and tenure, although abundant, seem to be poorly understood. Nicholson and Johns (1985) believed this lack of understanding is because no theory underlies the pursuit of these characteristic associations. The current studies have not stimulated more sophisticated or informative study. Thus, the literature does not build a theoretical network within itself. Instead, the data seem to be pooled and conclusions somehow withdrawn from this data pool.

Few studies make a conscientious effort to isolate a particular variable from all extraneous or mediating variables. In the early study by Baumgartel and Sobol (1959), the author's attempt to predict that absenteeism was related to the size of the organization and that absenteeism was related to other characteristics of age, wage rate, seniority, and job classification is typical. This study produced many results and conclusions. Personnel from large organizations were absent more than personnel from small organizations. There were significant differences in male versus female, white collar versus blue collar, and short-term employees versus long-term employees. Yet minimal interaction of these variables was discussed. Also, no attempt was made to theorize as to which selective traits were necessary to predict favorable absentee behavior in employees.

**Individual Trait Analysis**

Some attempts were made to isolate one particular variable. Sellett (1964) studied age and absenteeism but could support only a slight tendency for older employees to be absent less frequently than
younger employees. However, in contrast to this conclusion, Cooper and Payne (1965) in three studies found that there was no support for the hypothesis that the frequency of absence decreases with age; in fact, in two samples there was an increase in absence frequency with age.

As with the theme of absenteeism and job satisfaction, the theme of satisfaction and personal characteristics received support and recognition from many less than professional studies through trade journals and industrial magazines. Halperin (1963) listed causes for absenteeism that ranged from married women and younger employees to older employees and personal affairs. "Absent Workers" (1972) reinforced women, youth, job classification, and size of organization as key characteristics in absenteeism. Although undocumented, these studies had definite impact on the thought processes of industry managers. Goodman and Atkin (1984) referred to these generally accepted "truths" as the things managers think they know about absenteeism. Most studies, based on such speculation rather than knowledge, produce results that are often weak, tentative, and contradictory in nature. However, a few studies demonstrate correlation that seem to be unchallenged. Parkes (1987) showed significant curvilinear relation between relative body weight and absenteeism. Interestingly, smoking had minimal effect on the same sample. An attempt to isolate the traits of age and tenure demonstrated only age was a viable predictor of absence. However, the nature of the organization had a significant effect on the relationship (Nicholson et al., 1977).
The Complexity of Personal Characteristics

Studies became popular where a variable was measured against multiple personal characteristics with relationship to absenteeism. Garrison and Muchinsky (1977) compared absenteeism with pay and without pay via seven biographical variables. The results indicated that paid absences were basically unpredictable, while unpaid absences could be predicted to some degree by certain variables (age, sex, tenure, and satisfaction with job) consistently identified across several studies. Similarly, Bernardin (1977) supported the hypothesis that personality characteristics (age, pay, and sex) together with level of satisfaction showed a relationship to absence rate.

The studies by Blau (1985) analyzed the relationship of extrinsic, intrinsic, and personal characteristics to various types of withdrawal behavior. Although the study did not analyze the interaction between these variables, it did suggest that absenteeism behavior was a function of both the individual and the situation. This study hinted that the interesting question becomes determining the relative importance of the individual characteristics versus the organizational characteristics versus satisfaction and which controlled, if any, absentee behavior.

Thus, even as the absence theme of satisfaction evolved from the simple to the complex, the personal characteristics also evolved from simple to nebulous. Muchinsky (1977) summed up the research on personal characteristics and absenteeism by stating that an occasional variable, such as family size, has given consistent results; but the
majority of the variables show a much greater amount of inconsistency in results.

Interaction Between Themes A and B

Perhaps as a result of dissatisfaction with the two themes of traditional absenteeism research, Nicholson and Johns (1985) suggested that later studies have invoked a variety of new theoretical approaches. Absenteeism has been addressed as a maintenance mechanism (Staw & Oldham, 1978), a stress reaction (Parkes, 1983), and an economic response for increasing nonwork time (Youngblood, 1984). These varied approaches have one common element; they blend both personal characteristics and job satisfaction together and expect an interaction between these two sets of variables.

The concept of using both variable themes is not that new. Kerr, Koppelmeier and Sullivan (1951) borrowed from both personal characteristics traits and job satisfaction elements when describing the 18 variables of absenteeism, hoping to interrelate and analyze absence occurrences randomly borrowed from both personal characteristics traits and job satisfaction elements. However, in their analysis the authors laboriously separated each of the 18 variables and investigated each in relative isolation. Key traits such as sex and tenure showed significant Pearsonian coefficients toward absenteeism but the authors were reluctant to compare variable interaction.

The necessity to understand the interreaction of variables becomes more important as authors suggest plans for control of absenteeism. Descriptive control (understanding absentee behavior
situations that cause undesirable absentee behavior) was defined by Johnson and Peterson (1975) as attempts to determine what types of situations and interactions cause undesirable behavior concerning attendance. The authors described 12 key variables and again analyzed them separately; but in their hypothesis of three methods of absentee control, addressed all the variables together. Each of the three methods of absentee control was designed to address a multi-variable causal situation.

**Attendance Motivation and Substitutability**

Steers and Rhodes (1978) defined interaction of two absence themes much more directly. Their hypothesis stated that attendance is directly influenced by attendance motivation and the ability to come to work. Further, attendance motivation is largely influenced by satisfaction with the job situation and various internal and external pressures to attend. The authors made special note of instances where personal characteristics can effect satisfaction that often do affect attendance. An example was given of women's sex and age corresponding to family obligations and role stress that could greatly influence the individual work ethic with regard to coming to work or not. In this line of reasoning the authors concluded that the importance of the various influences on the decision and ability to come to work may be very different for particular individuals. Also, these influences emerge both from the individuals themselves, through their personal work ethic and unique demographic factors, and from the work environment, which included such things as group norms,
job satisfaction, and incentive/reward systems. For instance, one employee may be intrinsically motivated to attend because of a challenging job; this individual may rise to the challenge and attend because he or she likes the job and the risk. Another employee, however, may have a distasteful job and yet may come to work because of other pressures such as financial needs. Both employees would attend but for very different reasons.

Steers and Rhodes (1978) went on to conclude that this interaction suggests some substitutability of influences up to a point for some variables. A manager concerned with reducing absenteeism on particularly monotonous jobs (job satisfaction) may change the incentive/reward system for a selective group of employees known to be highly concerned with compensation (personal characteristics). Support for this substitutability principle can be found in Ilgen and Hollenback (1977), who found some evidence that various factors influence attendance in an additive function. Thus, the strength of attendance motivation would be expected to increase as more and more major influences, or pressure, emerged and interacted.

Individuality Interactions

Similar in the interaction of the two main themes of absentee research but different in its model was the study done by Porter and Steers (1973). The authors listed four categories of factors, each representing one "level" in the organization. These categories were: (a) organization-wide factors (e.g., pay and promotion policies), (b) immediate work environment factors (e.g., unit size,
supervision, and co-workers' relations), (c) job related factors (e.g., type of work, stress, and margin of error allowed), and (d) uniquely personal factors (e.g., age and tenure). Several variables were found in each category that were related consistently to absenteeism. The study concluded by attempting to allow the variables to interact together under the approach of role expectation and role fulfillment. The significance in this study was not so much the "what" that constituted the categories, but the "how" the multiple variables interreact. This interaction is then transmitted as a set of expectations. These expectations are of course unique to any individual. For some employees, the most important factor may be challenging work, while for others due to a particular blend of personal characteristics and satisfaction needs, it may be the status attached to one's job; for others it may be a combination of both. Therefore, absenteeism was perceived as an individual or private behavior that was analyzed more or less without regard for its social context. Unfortunately, this individual splinterization made any relationship tentative at best.

In addition to the individuality concept, Porter and Steers (1973) also implied that: (a) the negative consequences for the individual involved in casual absenteeism are considered far less than those associated with turnover; (b) absenteeism is more likely to be a spontaneous and relatively easy decision to make on a day by day basis than termination; and (c) absenteeism may sometimes represent a substitute type of behavior that takes the place of termination, particularly where alternate employment is unavailable. In
this sense absenteeism may become a short-term escape or temporary avoidance from a social or organizational unrewarding situation without the loss of the benefits of employment. Surprisingly, no social context was discussed by the authors.

Organizational Interaction

Youngblood (1984) expanded the individualistic view of absenteeism as an interaction between work (organizational) and nonwork (extra organizational) behavior. In this framework absence is viewed as dynamic, temporal behavior that makes decisions on attendance based on time allocations between nonwork and work environments. These decisions are based on the perceived consequences of the use of time in both environments. This perceived consequence is an outgrowth of the degree of attachment the individual employee has with both the work and nonwork domains. The degree of attachment is then derived from employee characteristics and job satisfaction themes in the broadest definition as described by Porter and Steers (1973). The themes have now developed to include environmental pressure outside the organization as well as direct organizational influences. In addition to the ever expanding definition of the original themes of absenteeism (job satisfaction and personal characteristics), Youngblood admitted that the relative importance of both the inside and outside organizational environmental influence may vary over time and that this condition is consistent with the unstable character of absenteeism. Thus, the decision to attend or not attend work is made by means of conflict for the perceived scarcity of time. Both the
work domain and the nonwork domain vying for attendance is process through the motivational and personal traits of each particular individual. It is not difficult to understand why Youngblood had only tentative relationships when using such a broad framework for absenteeism.

To this point the discussion has traced the absentee literature from basic fairly simple managerial assumptions to complex individual and organizational behavior patterns. The basic assumptions and the theories evoked by these assumptions developed into two separate themes of absenteeism—job satisfaction and personal characteristics. Job classification or job type was on personal characteristic. Eventually the interaction between these two themes became apparent and the relationship between specific personal characteristic like job classification and satisfaction was important. The interactions between personal characteristics and job satisfaction were further complicated by both individual forms of interaction and organizational forms of interaction. Because of the complexity of absence behavior it is important to briefly discuss absenteeism within the broader scope of withdrawal behavior.

Absenteeism and Other Forms of Withdrawal

As dominant as the two themes of absenteeism are in the literature, any discussion of absenteeism would not be complete without a review of the shared correlates and relationships of absenteeism and other forms of employee withdrawal: turnover, lateness, and unemployment. Although not directly a logical concept construction, the
number of studies that address multiple forms of withdrawal make such a discussion necessary. The literature reflects three basic assumptions about absenteeism. Lyons (1972) suggested the view that (a) absenteeism, lateness, and turnover are progressive in that lateness and absenteeism appear to be an early form and that turnover and unemployment is the final stage of withdrawal; (b) absence is really a more socially acceptable alternative to turnover or unemployment; and (c) lateness, absenteeism, turnover, and unemployment have common causes. Current studies, however, show less positive results. The Adler and Golan (1981) study demonstrated no support for the relationship between lateness and absenteeism as progressive. Further, the study indicates that job satisfaction and work tedium were generally significant predictors of lateness but not absenteeism. This contrasting finding for lateness and absenteeism cast doubt on the assumption of communal causes for different forms of withdrawal. The author conceded that some studies yield correlations that seem to support the progressive theory (Garrison & Muchinsky, 1977; Waters & Roach, 1979). But analysis indicates that quite possibly the pre-termination absences stem from days off employees take after they have already decided to quit. Absenteeism may reflect job search activities or simply the use of days off that employees have accumulated (Mobley, 1977).

Interestingly, both the studies that supported a relationship between different forms of withdrawal and those studies that did not support any relationship were questioned by additional studies. Clegg (1983) claimed that any empirical investigation of the
psychology of employee lateness, absenteeism, and turnover were methodologically flawed insofar as they failed to consider systematically the presence of either reverse causation or third factors. The author gave an extensive review of the literature on the relationship of absenteeism, lateness, and turnovers pointing out that most if not all studies were lacking in controlling various third variables. The list of third variables is extensive, including age, sex, tenure, job satisfaction, job content, job classification, shift, number of dependents, marital status, etc. Obviously these stated third variables can be grouped into biographical or personal characteristics and job related or job satisfaction. Thus, Clegg has enveloped the withdrawal literature into the structure of the two major themes of absenteeism. Clegg's (1983) study revealed three patterns of findings. First, all six of the biographical and situational variables were significantly related to one or more of the measures of affect and, therefore, required to be controlled to avoid statistical confusion. Second, there was a relationship between the affective and behavioral variables. Thus, if absenteeism was related to any personal characteristic or the particular satisfaction of a job situation, this relationship could have, and probably did have, at least a mediating affect on any absentee/lateness interrelationship. Third, any former relationships could have significant influence on current relationships. With regard to actual findings, Clegg's study could not demonstrate any more than a tentative relationship between lateness, absenteeism, and turnover when affected by various personal traits and job satisfaction situations. Only age had a significant
behavioral relationship. This finding was consistent with the work done by Nicholson et al. (1977), whose explanation is in terms of a growth in "attachment to work" with age. This notion encompasses the idea that older people become "socialized" into a particular work behavior and are pulled into their work by their own needs or as a result of fulfilled social expectations. These expectations can be caused by either personality characteristics or job satisfaction needs.

In the literature of absenteeism and withdrawal, the absenteeism-unemployment relationship has been studied very little. However, Steers and Rhodes (1978) included unemployment in their discussion of withdrawal behavior. Markham (1985) suggested that there appears to be no studies of the relationship between absenteeism and unemployment reported in the literature after the late 1950s. In his analysis of national data, Markham found a significant relationship between the two variables, but only at a national level. This same relationship was not evident when absenteeism was compared with the local district rate of unemployment or the organizational unit's unemployment rate. Markham postulated that a possible reason for local nonconformity to the hypothesis is that the perceived level of unemployment might act as a moderating variable for such relationships as those between absenteeism and satisfaction. Another possible reason for local nonconformity could be the collective personal attributes and attitudes (characteristics) of the work force. By the author's admission, the possibilities remain highly speculative and cannot be substantiated without further empirical study; however, the
general theme appears to be consistent with the literature. These studies would accelerate our understanding of the psychology of lateness, absenteeism, turnover, and unemployment and will promote consideration of the processes by which different people choose to attend or not attend, paying particular regard to the role of individual needs and values and their own particular personal traits.

The importance of the studies of the relationship between absenteeism and other forms of behavior is that these studies support the complexity of influences on absenteeism. The withdrawal theories complement the two-theme interaction concept of absenteeism as individual behavior that has relationship to both individual satisfaction and personal characteristics but also influenced by organizational satisfaction and characteristics. Thus, an organizational unit like job classification becomes an important and possible pivotal factor in individual behavior.

Absenteeism and Organizational Influences

Absence Culture

In contrast to the two themes of absenteeism previously discussed that portray an absence as an individual, "private" behavior, a variety of theoretical approaches analyze absenteeism within a social context. These approaches are derived from the theory that some patterns of behavior are common to members of the culture, and these behaviors are interpreted similarly by them. The notion of an absence culture was conceived by Hill and Twist (1955) to explain how
different types of absences were associated with differences in tenure within the organization. This implies that it takes some amount of time before an employee becomes sufficiently sophisticated in the understanding of the operational norms, rules, and supervisor expectations of absentee behavior. Over time the employee can substitute acceptable behavior and sanctioned excuses in place of unsanctioned, unexcused absences. The sanctioned absenteeism may be vacation or sick days not available early in employment or attending only to be called out on "emergencies." Lateness that exceeds several hours can also substitute for missing a whole day. Obviously, this type of behavior is not in compliance with organizational goals but may be acceptable to avoid absentee sanctions. Thus, Johns and Nicholson (1982) defined absence culture as "the set of shared understandings about absence legitimacy . . . and the established 'custom and practice' of the employee absence behavior and its control" (p. 136).

An absence culture may effect the behavior of employees directly by establishing a specific norm regarding the tolerated level of absenteeism within a department or organization. Chadwick-Jones et al. (1982) stated that such norms may be responsible in part for restrictive variance in absence within departments, plants, or organizations and greater variation between departments, plants, and organizations.

Absence cultures may also affect absenteeism in less direct methods. Salancik and Pfeffer (1978) stated that the social information processing mechanism may be very subtle and not a specified norm. The information processing may be nothing more than
observations of fellow employees' behaviors and the reaction of the organization, peers, and subordinates as well as management to those employees' behaviors. These observations are then internalized and patterns or levels of acceptable behavior are adopted. This form of absence may be less concrete but are still reflective of social influences (Johns, 1984).

Absence culture may also operate as a constraint or to facilitate the extent to which an individual's job satisfaction or personal characteristic would normally influence the absentee rate. The absence culture would in essence moderate the normal base rate of a given population so as to distort the expected absentee behavior due to a specific variable (Nicholson & Johns, 1985). Such responses modified could explain the seemingly contradictory conclusions from many studies. One absence culture, for example, could contain norms that make good attendance imperative no matter what level of job satisfaction any particular individual may have in a particular situation. The absentee level would predictably be different from a culture that would dictate a norm of absence as a "legitimate" response to lack of job satisfaction.

Absence culture is best depicted graphically by Steers and Rhodes (1984) in the example of a rather striking cross-national differentiation of absentee level from 1% in Switzerland to 3% in the United States to 14% in Italy. The point is made that such variation in range would be highly unlikely to be the sole function of a difference in job satisfaction level. Rather, it is much more logical to assume that these differences are more closely aligned with a
social consensus concerning the legitimacy of absence as an acceptable behavior.

Absence culture is not, however, limited to country, organization, plant, or department. Any group large enough to effect the norms of its individual members can be a culture. Management itself can be guilty of supporting the cultural phenomenon by expecting people to take sick days when they are not sick and accepting it as a cost of doing business. Absenteeism is so commonplace that employers budget around it, make allowances for it, and hire more workers than they need to make up for those not present (Allen & Higgins, 1979). The epitome of this type of corporate insensitivity to cultural norm was the establishment of paid personal absentee days by General Motors in 1979 (General Motors Corporation, 1979). The paid personal absence days not only legitimized cultural absence but also made monthly absence mandatory. The agreement specified that employees who inadvertently come to work on their paid personal absence day were sent home.

Allen and Higgins (1979) suggested that an absentee culture can only be made more in line with organizational goals if the culture is changed. They suggested a variety of approaches including: (a) leadership commitment to attendance goals; (b) consistent policies and procedures that are understood and expressed by immediate supervisors; (c) employee recruitment, selection, and training based partially on attendance norms expectations; and (d) attention to the job itself to design the work to alleviate boredom and the lack of employee self-esteem and feeling of nonimportance. All these
approaches are meant to involve the employee at every level within the organization and create a culture that encourages attendance.

A particular element of absence culture was studied by Morgan and Herman (1976) pertaining to the relationship between consequences of absenteeism and the past and future absenteeism. Predictions were based on an expectancy model of behavior. The results support the concept of an absence culture. This culture of nonattendance for some employees provides an opportunity to experience positive consequences that may encourage absenteeism to the extent that organizationally negative consequences designed to control absence behavior are negated. The difficulty in this study is ascertaining the extent of the correlation caused by the culture of the individual and the extent of the correlation caused by the individual, job satisfaction, and personal characteristics.

A different approach at absence culture involved the amount of employee involvement as an element to modify the cultural absenteeism. Marks, Mirvis, Grady, and Hackett (1986) hypothesized that the impact of participation of employees in quality circle (QC) programs would have a relationship to attendance due to improved attitudes and productivity. The results supported a positive and substantial impact of QC participation on employee attendance. A positive correlation was also shown for attitudes and productivity as well as quality of work life scores. This suggests a major shift in the cultural norm of the subjects.

These studies suggest a major role in attendance is attributed to organizational impact in the form of an absence culture. This
absence culture interacts with personal characteristics and job satisfaction motivation. Parkes (1987) described this type of interaction on culture and personal attributes in her analysis of the relationship between relative weight and absenteeism. Results indicate not only support for this relationship, but a linear interaction between social dysfunction and relative weight was also found; particularly high levels of absence occurred among those of high relative weight who also reported high levels of social dysfunction. This finding can be interpreted that a capacity to maintain a body weight conducive to good health and good work attendance may also be conducive to psychological resilience and psychosocial resources for managing stress. Also, since overweight individuals tend to attract less favorable responses from others, they may receive little social support when they experience difficulties at work and, therefore, may be more prone to be absent. Consistent with this explanation, coping by withdrawal is more common when the work environment is perceived as being nonsupportive (Newton & Keenan, 1985).

The significance of the existence of an absentee culture is that any study must take into account not only the individual but also the work group from which the individual is a member.

**Psychological Contract**

An extension of the absence culture is the concept of a psychological contract. Psychological contract has been developed most fully by Schein (1980) when he defined it as a set of unwritten reciprocal expectations between an individual employee and the
organization. The contract is in essence a link between organization and individual because continued employment entails an implicit exchange of ideas, beliefs, and expectations about what constitutes proper and legitimate behavior by either party. Nicholson and Johns (1985) described the difference between absence culture and psychological contract by defining absence culture as a mechanism for the reinforcement of social order within the organization as it imprints on the employee through the social context. By comparison, the psychological contract emerges from communication and day to day interaction that effectively dictate how the culture will be "acted out." Thus, the contract is the individual behavior that is translated from collective social influences. These influences may then follow pattern according to particular job classifications. Klein (1986) discussed the variation in absence rates by industry and occupations. The results of his study showed trends among goods-producing and service-producing industries. His analysis reflect the fact that service-producing industries (made up largely of educational and medical service providers) usually have an allotment of personal days off that are guaranteed by contract. This contract even replaces the absenteeism with hired substitute teachers and on-call nurses.

In contrast, Klein (1986) reported that goods-producing industries have lower absence rates for executives whose absence could cause a high degree of competition and visibility among peer professionals.

Such a comparison is easily explained in the framework of a psychological contract. The service-producers have not only a
psychological contract, but a legal contract that states in essence—use your "earned" absence or lose it. Conversely, the goods-producing professional has observed an absence culture that reinforces competitive loss as a consequence of absence and the resulting psychological contract with the organization is attendance.

Baum and Youngblood (1975) built on the concept of "legal compliance" as a psychological contract. Their study was based on the assumption that if an organization allowed or encouraged a specific level of absenteeism, the internalization of organizational goals would build a psychological contract of absenteeism at the organizationally recommended level. Behavior could then be modified in accordance with any adjusted rate established by the organization. By controlling the absentee policy for reward and consequence for attendance, the rate of absenteeism should be reflective. Results confirmed that absenteeism was effectively reduced by using a control strategy based on legal compliance in contrast to a laissez-faire control policy. These results not only were significant to absence control policy for organizations but also gave further evidence that a psychological contract is very definitely a two part contract. Both the individual and the organization must agree to avoid instability that will influence the other party's behavior.

Individual Organizational Relationship

Additional studies by Hammer, Landau, and Stern (1981) support the individual organizational relationship. The authors suggested the most important predictor of absenteeism was the pressure to
attend work in the forms of organizational and financial commitment. This commitment was an outgrowth of both internal pressure to attend and external pressure to attend. The internal pressure included such factors as the commitment to the organization and its welfare in partnership with the personal work ethic of the individual. This partnership is similar to the psychological contract of Schein (1980). The real significance of this particular study was demonstrated when the company transferred from privately owned to employee owned with no significant change in absentee rate. The authors concluded that the psychological contract and resulting behavior are robust and changes only when the previous mutually agreed upon level of acceptance is no longer agreeable by either or both parties resulting from a significant emotional event.

Job Involvement

Lawler and Hall (1970) focused their study on a more in-depth view of this commitment. They zeroed in on job involvement, defined as psychological identification with one's work. Involvement is, therefore, explained as the degree to which the work situation is an important part of the employee's life. The job may be important as a place to satisfy his or her important needs (e.g., his or her need for self-esteem or social acceptance). Thus, motivation to attend can be thought of as the degree to which attaining higher order need satisfaction depends upon performance, and satisfaction as the degree to which the needs are actually satisfied. This implies that groups such as highly skilled technicians, who are generally very high on
motivation, value their own skills and have a high degree of autonomy from a relatively intense bond with their organization. Any psychological contract by such a group would be on a much more professional plane than any contract between the organization and nonskilled or general labor classification of employee who would be less highly motivated. Lawler and Hall (1970) suggested that the greater the chance the job holders have to use their abilities, be creative and do what they do best, the higher the level of psychological contract achievability. The obvious conclusion reached is that absenteeism will be manifest by the level of psychological contract made with regard to this behavior. Thus, the more intense the highly skilled group becomes the more attendance binding their psychological contract.

As work loads become very intense, these same jobs commonly fight schedules and are restricted in resources of money and planning causing overtime to be worked by the employees involved in this tense interaction. The intensity level may cause enlargement of job involvement and stronger psychological contracts to attend, or fatigue could destroy normal attendance behavior.

Thus, the literature review has progressed from assumption theory to organizational job involvement and psychological contracts by particular groups, such as members of unique job classifications. Yet, through this progression the literature builds upon previous studies. The two themes of absentee literature, job satisfaction and personal characteristics, developed from assumption theories. The theme of job satisfaction and personal characteristics were found to
interact with each other. These interactions were of an individual and organizational nature. The organizational influence on absenteeism was cultural in nature as displayed in the withdrawal and absentee literature. This organizational or cultural aspect of absenteeism could progress to a psychological contract that governs behavior of a particular group, such as members of a unique job classification with regard to absenteeism. The job involvement, as a subset of job satisfaction and the job classification, as a subset of personal characteristic, is extremely vital to the absence culture and psychological contract. Also, as the employee becomes more involved and the intensity level increases, the more influential these factors may become on absentee behavior. The intensity level is often seen in the increase of overtime levels. It is the inclusion of overtime in this study that allows this study to be the next level of research beyond the existing level. The inclusion of overtime allows an analysis to see if any relationship exists between absenteeism and overtime by job classification.

Introduction of Overtime

Overtime has been traditionally defined as hours worked in excess of 40 hours per week. For the purpose of this study and this review of the overtime literature, the term overtime will be defined as all hours worked in excess of the normally scheduled 8 hours per day. By this definition the influence of daily overtime can be included with regard to overtime worked and its relationship to absenteeism. If overtime were defined as a weekly phenomena, an employee
could work up to 8 hours of overtime, be absent one day, and show no relationship between the two variables. Such data collection would obviously skew any results and produce unreliable conclusions.

Carr (1986) stated that on a typical week in May 1985 about 10% of all American workers received overtime pay for hours worked. This large percentage equates to 10.5 million persons working 94 million hours of overtime for the typical week in May at a cost in premium pay to employees in the multimillions of dollars. The reasons that employers are willing to pay these premiums according to Carr are:

1. Over the short term, employers use overtime to fill rush orders, to meet seasonal peaks in demand, replace production loss due to mechanical breakdown, and maintain production schedules.

2. Overtime may be used to supplement production when employers are unable to hire workers with specific skills or training required for a job.

3. Overtime may result if uncertainty of product demand in the future dictates that the cost of training and hiring may not be offset.

4. In the long term, employers use overtime when normal scheduling practice requires additional output of product and the employer elects to pay overtime premium rather than hire new employees. Employers tend to use this approach, according to Ehrenberg (1971), when they perceive the cost of overtime premiums to compare favorable with the quasi-fixed, employee-related expenses such as benefit packages, pension funds, training, and expanded payroll.
The working of overtime tends to be universal and crosses industrial, personality traits, and job classification. However, Carr (1986) stated that men tend to work more overtime than women; whites tend to work more overtime than blacks or Hispanics; and most importantly for this study, among the various occupational groups, the highest proportion of workers reporting some work at overtime rates was in the precision production, craft, or skilled group. This skilled classification worked overtime at a rate in excess of 2 times the norm or about 22%.

Overtime and Absence

The relationship between working overtime and absenteeism has often been perceived as causal. Ehrenberg (1971) discussed the popular notion of this relationship as a common management conception that large firms attempt to account for absenteeism by hiring standby workers; however, because absentee rates are so dynamic in nature it is impossible for companies always to have the correct number of replacements available. Hence, overtime must be worked by existing employees in order to meet production schedules. The logical conclusion from this agreement is that the randomness of absenteeism is a cause of overtime. Therefore, if the absence rate were known with any certainty, management could plan their manpower levels accordingly and avoid the premium expense of overtime. Ehrenberg suggested that this popular mentality could not be supported and his findings concurred.
In addition to the management conception that absenteeism causes overtime is the equally popular management conception that excess overtime or extended working hours cause absenteeism. This causal hypothesis is equally unsupported, yet popularly believed.

In attempts to combat both productivity deficiencies and absenteeism some companies have an almost obsessive concern with increasing labor hour flexibility. In a study of 72 big firms representative of manufacturing and service industries, Atkinson and Meager (1986) concluded that companies address flexibility of working hours by introducing changes to manning practices. These changes were of four major types: more temporary workers, more part-time workers, more overtime, and more flexibility of actual time on the job. Their study indicated that overtime was common and on the increase with little affect on organizational operations that would include absenteeism.

Another approach aimed at more flexibility in labor hours spent on the job is the shortened work week. This is accomplished by either working the same hours in fewer days or fewer total hours per week. The rationale being that if a form of the shortened work week had a relationship to absenteeism then it may be proper to hypothesize that a longer work week caused by overtime would have a reciprocal relationship to overtime. Ivancevich and Lyon (1977) examined the relationship between the 4 day-40 hours a week employee and various dimensions of self-actualization, job satisfaction, anxiety-stress, self-esteem, and absenteeism. Their study indicates that in the short term (the first 12 weeks) there is a positive correlation,
which demonstrated a reduction of absenteeism. However, in long term analysis the positive relationship was short lived and no reduction of absences was found.

Several analysis of the effects of a 38.5-hour week have been made in Europe ("Bonn," 1985) and America ("Reduction in Hours," 1984) with both articles concluding that the reduction in hours worked per week is not an influence on productivity of employment behavior. Employment behavior includes the various forms of withdrawal. Thus, changes or at least reduction of overtime or even straight time show no relationship to absenteeism in a universal sense. Conversely, Lincoln Electric has adopted the managerial strategy to be permanently manned under the normal staffing numbers in order to insure guaranteed levels of employment. Lincoln systematically utilizes overtime as a normal 10% of its total time worked. This allows about 10% reduction in sales with only the elimination of overtime. The contrived shortage of workers at regular volume in sales also eliminates the demotivating effects of slack time which other companies experience (Sharplin, 1985).

The lack of significant relationships between absenteeism and number of hours or days worked per week is further supported by studies that tested fatigue. Nelson and Ladan (1976) found that the weekly fatigue produced by the 5-work-day and the 4-work-day employees were very similar. The authors concluded, based on similar patterns of behavior of both work schedules, that fatigue has a motivational basis and due to its cyclical patterns suggests a learned behavior not a linear relationship. This not only supports a nonworked
time relationship but also hints at a connection with absentee cultures as learned behavior. These learned behaviors are similar to the learned behaviors of certain absence cultures. Since absence cultures are unique to specific groups, such as particular job classification members, it is important for this study to review this particular personal characteristic subset.

Job Classification

The final section of the literature review involves the possible relationship between absenteeism and different job classifications when irregular hours are worked. The implications from research on this subject may give insight to possible relationships when overtime is introduced as a variable. The irregular hours represented by overtime is similar to irregular hours worked by shift rotation and off shift working.

Jamal (1981) found a positive correlation between absenteeism rate and workers who were employed on a fixed schedule. Employees on a rotating schedule had higher rates of absence for comparable job classifications. These findings are consistent with Nicholson and Jackson (1978) studies, which demonstrated similar relationships. These studies also demonstrated a relationship between absenteeism and weekend work. As Saturdays and Sundays were scheduled, absences increased. However, the interaction between weekend work and rotating schedules was less than significant. What was significant in the study was the delayed effect of absence when weekends were worked. In essence the weekend days were worked and the absences occurred at
a later date implying a cumulative build up of absence behavior.
This phenomenon was explained by conceiving rest days as "infecting" the working days by the employee selecting a rest day at a later date within the proximity of the weekend worked.

Based on the aforementioned studies, it would be logical to speculate that if indeed working irregular shifts and weekends effect absence rates then overtime would also cause irregular hours and weekend work and thus effect absence rate.

In addition Baumgartel and Sobol (1959) showed relationships of absenteeism and job classification across general categories. Nicholson et al. (1977) also verified significant differences associated with different groups of employees. This study concedes variation from personal characteristic to personal characteristic, yet groups are surprisingly similar. These groups were more defined by Kilbridge (1961) as repetitive workers, batch repetitive, and non-repetitive. For this paper's purpose, these groups have been re-defined as unskilled, semiskilled, and service. Of interest is the possible relationship between the job classification and amount of overtime worked with absenteeism. If overtime does indeed effect absences rate, then will job classification enhance or influence these absence rates?

Throughout the literature review, great pains were taken to stress the many variables that threatened internal validity of most studies because of the difficulty to controlling these significant third variables. Because of the nature of the population the isolation of variables is almost impossible (Watson, Driver, & Watson,
1985). Therefore, the research that does exist is often flawed to the point where the ability, if not the validity, of the results is questionable. In light of this, it is logical to ask what might lead research to be more productive and useful. Clegg (1983) suggested that causality is impossible due to the inadequate designs of most studies. He suggested it may make more sense to look for patterns of behavior to operate or manage from. The purpose of this study is not so much to establish relationships to prove causality, but to enlighten management to behavior patterns important to managerial decision making that could dictate corporation policy based on relationship and not common misconception.
CHAPTER III

DESIGN AND METHODOLOGY

Introduction

The research design of this study was intended to analyze the possible relationship between absenteeism and the amount of overtime worked across different job classifications. That is, does absenteeism decrease or increase with an increase in the amount of overtime worked by specific job classifications? Also, if a relationship did exist between absenteeism and the amount of overtime worked for specific job classifications, was the relationship observed for one job classification significantly different from the relationship observed in another job classification?

To clarify the purpose, this chapter will explain the research design in terms of the operational definitions described in Chapter II. The data collection will be described in terms of these operational variables as it relates to the design. Expanded or additional analysis may be necessary, depending upon the findings and preliminary data analysis. Any design change necessary after the initial design will be discussed. The final complete design will then be described and discussed in reference to the research questions previously defined. The chapter will conclude with a discussion of the possible design limitations.
Operational Definitions of Research Design Variables

Because of the magnitude of possible combinations of absentee rates, overtime rates, and job classifications that could be found in a comparative study such as this, it is necessary to define and limit the variables under analysis.

Populations

Populations addressed by this study are those hourly employees skilled, nonskilled, and service within the metal stamping and fabrication plant of Kalamazoo, Michigan. The function of the Kalamazoo metal fabrication plant is primarily construction of sheet metal body parts for use in automobile assembly. The samples under study consist of total subpopulations of this plant during the time period of 1985-1989. These subpopulations are clearly divided into job classifications. Attendance records are computed by classification by department within the plant. The integrity of numbers by classification is very accurately maintained because of the payroll function with regard to pay rate.

Absenteism

Absenteism will be defined not in terms of excused or unexcused absence, but in terms of manageable absenteism. This is the amount of missed time exclusive of sick leaves, bereavements, paid absence, holiday, union business, and vacation. The measurement of absenteism is based on a combination of employee "in" punches on the time clock and supervisor codings for appropriate absence reasons.
The Amount of Overtime Worked

The amount of overtime worked will be based on the amount of hours worked in excess of a mean of 40 hours a week for the employees in a specific job classification. The measurement of overtime hours worked are also based on the employee "in" punches on the time clock and are referenced to the weekly overtime authorization schedule published by each working department on a weekly basis.

Job Classifications

Job classifications for the purpose of this study will be grouped into three categories: skilled, service, and unskilled, or production. The skilled trade classifications, whatever their plant titles, have all completed or are engaged in formalized employee in training (EIT) or apprenticeship training programs. Upon completion, they attain certification as journeymen tradesmen. Their job descriptions include support service for production, construction, and mechanical tryout. Examples of typical skilled trades employees include: (a) toolmaker, (b) diemaker, (c) machinist, (d) electrician, (e) millwright, (f) welder maintenance, and (g) pattern maker. The functions of these groups of employees are mutually agreed upon by General Motors and United Auto Workers.

The unskilled classifications are those employees normally associated with the direct production activity. Examples of typical unskilled employees include: (a) punch press operator, (b) stock laborer, (c) productive helper, (d) salvageman, and (e) welder operator.
The service classifications are those employees normally associated with supportive production functions. These are classifications that require little or no formalized training, yet are not specifically tied to the production of a product. Examples of typical service employees include: (a) material handling personnel, (b) inspectors, (c) shipping personnel, (d) janitors, and (e) machine cleaners.

Data Collection

The data were collected from the payroll audit sheets by departments which automatically subdivided the data by job classification. Each job classification was a combination of many department totals. The data were accumulated in terms of number of persons working and number of persons not in attendance. Any absences not within the definition of absence for this paper were deleted from the data. A percentage was then calculated for each department and cumulatively for each job classification. The absentee data were then displayed weekly over a time table. (See Table 1.)

The amount of overtime worked was collected from the weekly payroll audit reports. The total hours of overtime worked by each department was divided by the number of employees within the department and recorded as a weekly average. These averages were combined by job classification for an average amount of overtime worked by job classification. The mean overtime amounts were displayed in Table 1 by weekly intervals.
Table 1

Example of Observed Data Displayed in Weeks
(Department 11—Pressroom—Nonskilled)

<table>
<thead>
<tr>
<th>Week ending</th>
<th>11-10-85</th>
<th>11-17-85</th>
<th>11-24-85</th>
<th>12-1-85</th>
<th>12-8-85</th>
<th>12-15-85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent absence rate</td>
<td>4.1</td>
<td>4.9</td>
<td>3.7</td>
<td>1.9</td>
<td>5.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Overtime hours worked</td>
<td>10.3</td>
<td>10.5</td>
<td>12.4</td>
<td>4.5</td>
<td>10.8</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Methods of Analysis

Initial Design

The original research design was to be done over the life of the 4.5-year study. The design was intended to answer the research objectives described in Chapter I. The relationship between absence rate and the amount of overtime worked was to be analyzed by the Pearson product-moment correlation test. The relationship between job classification and absence rate was to be tested by an ANOVA test for means. Possible interaction between job classification and amount of overtime worked on absenteeism was to be tested by a two-way ANOVA.

Each of these tests will be discussed in detail within the framework of the corresponding operational hypothesis later in this chapter. The results of these tests will be discussed for each job
classification as either similar to other job classifications or different from other job classifications.

Expanded Design

Because of the length of time in the study, patterns of behavior may be lost in the averaging of such a large amount of data. The question must be asked as to the significance of these patterns of behavior and the usefulness of the data in analysis of short-term relationships between absenteeism and overtime by job classification. A pattern of behavior may be any visible data alignment that shows a trend over a period of time. An example of a pattern would be a sudden rise in absentee rate every July from year to year.

Such short-term patterns may give insight to possible seasonal effects, such as normal high absenteeism during the heat of the summer, cyclic business patterns, annual management absentee prevention programs, or actual relationships that exist. Each observed pattern of data will have to be scrutinized independently because it may not be relevant to the rest of the data. Each pattern will have to be explained in terms of a predictable or expected extraneous variable. Seasonal variability is the most common extraneous variable that may and most likely did affect the data.

However, even if the results are affected by the seasonal extraneous variable, conclusions drawn from these data may be just as valuable for staffing decisions needed for that particular season. These conclusions may even be the opposite from conclusions made on staffing because of the data over the full 4.5 years. For example,
if the amount of overtime and absenteeism correlate positively under normal conditions and a summer was worked with little overtime the predicted absence rate would be low. However, absence rate may be recorded as high due to a seasonal reaction to the extraneous variable of summer heat. Therefore, staffing just for the summer months on a part-time basis would have to take absenteeism into consideration. Staffing for an extended period or for the indefinite future may not consider the absenteeism factor. Also, over the long term, absenteeism may have a positive relationship with overtime worked for one classification and decisions about staffing could be made accordingly. That same job classification working heavy overtime over a short seasonal period that reoccurs yearly for a short time span may not cause an increase in absenteeism; and therefore, staffing decisions may and probably would be different.

Any peculiar pattern will then be analyzed for correlation of absentee rate and amount of overtime worked by means of a Pearson product-moment correlation test. The mean absence rate comparison by job classification will be analyzed by means of an ANOVA test for means. To test for possible interaction between job classification and amounts of overtime worked on absence rate, testing will be done using a two-way ANOVA testing for interaction. These analyses will be an extension of the initial design. Therefore, the study will not only test the long-term effects on absenteeism by overtime worked and job classification but also the short-term effects of the same combination of variables.
Such an expanded design allows the study to compare as well as identify long-term and short-term results. By testing data for the 4.5-year period, the results over time can be tested against periodic cycles. Also, the influence of periodic cycles can be observed against the long range of the study. The results of the complete time study and periodic study could have useful information for personnel staffing policies even if the results are not consistent with each other. Staffing policies would have to be reflective of the length of staffing needs and the corresponding results associated with that length of time.

Operational Hypotheses

The operational hypotheses are directly related to the research questions of this study. For the sake of clarity, each research question of this study is listed with the operational and corresponding null hypothesis intended to demonstrate the relationship described in the objective.

**Question 1:** Is there a significant difference in the rate of absenteeism by classification?

**Hypothesis 1:** For the job classifications of skilled, service, and nonskilled, the mean absentee rate will be significantly different (.5%) and will decrease in accordance with the skill level performance.

**Null Hypothesis 1:** For the job classifications of skilled, service, and nonskilled, the mean absentee rate will be equivalent.
The relationship between job classification and absence rate will be tested by an ANOVA test for means. A comparison will be made between the mean percentage of absenteeism for each job classification: skilled, service, and nonskilled. The null hypothesis will be tested to see if the means of all classifications are equal. The failure of this null hypothesis would give support to the operational hypothesis that a relationship exists between absence rate and job classification.

Question 2: Is there a relationship between the amount of overtime worked and the absentee rate?

Hypothesis 2: There is a relationship between the mean rate of absenteeism for any classification of employees and the mean rate of the amount of overtime worked on a weekly basis.

Null Hypothesis 2: The correlation coefficient between the variables of absenteeism mean rate and the amount of overtime worked on a weekly basis is zero.

The relationship between the mean rate of absenteeism for any job classification and the mean rate of the amount of overtime worked by that job classification will be tested by the Pearson product-moment correlation test. The null hypothesis will be tested to see if the correlation coefficient between absence rate and the amount of overtime worked is equal to zero. Failure to prove the null would support the operational hypothesis that a relationship exists between the amount of overtime worked and the absence rate for a particular job classification.
Question 3: Is there an interaction of overtime and job classification on absentee rate.

Hypothesis 3: For the job classifications of skilled, service, and nonskilled as defined in this study, the mean absence rate will have a relationship to the amount of overtime worked but will be significantly different (.5%) from each other in accordance with the particular classification of work.

Null Hypothesis 3: For the classifications of skilled, service, and nonskilled as defined in this study, the mean absence rate no matter how affected by the amount of overtime worked will remain constant for all job classifications independently.

The interaction between overtime and job classification on absence rate will be tested by a two-way ANOVA. Absence rate will be the dependent variable with amount of overtime worked and job classification the independent variables. The null hypothesis will be tested to show that interaction between job classification and amount of overtime worked on absence rate will be zero. Failure to prove the null would support the operational hypothesis of the existence of interaction between the independent variables.

Validity

Internal Validity

The internal validity of the data is enhanced by several factors. First, the data involved are used daily by payroll systems within the plant that are continually audited and corrected by
supervisors, union officials, local payroll auditors, and corporate auditors to ensure accuracy. Second, since these are archival data, they are not subject to adjustments made by any member of the populations that may desire specific results. Third, since the study spans 4 years, the amount of overtime and absenteeism are near the norm and any normal cycle should be included. Fourth, the number of employees in each group is large enough (400 or more) to insure a mix of other personal characteristics that could skew results.

Limitations of Design

This study has several limiting factors. First, it is limited to the population being studied. Similar studies would have to be done with other populations to infer statistical significance. Second, the skilled trades group will be older and predominately male in makeup as compared with the service and production groups. Third, the overtime periods for each group may not necessarily match for specific time intervals due to the nature of work. Fourth, as with all causal-comparative studies, the researcher can conclude only that a relationship between two variables exists. The researcher cannot infer that overtime causes absenteeism or that absenteeism causes overtime. Interpretations of causal-comparative findings are limited because one variable could be either the cause or the result of another variable.
Limitations in Data

In data analysis special care must be taken because of a unique plant policy concerning holiday pay. General Motors BOC Kalamazoo has a policy that holiday pay is earned by employees only if they are in attendance on the day preceding and the day after a regularly scheduled holiday. This policy excludes absences that are contractual, such as vacations, paid absence allowance days, union business, etc. Therefore, the type of unexcused absence (AWOL) that is defined in this paper as recordable absence would have a consequence of loss of holiday pay. The net effect of this policy is a large reduction in absentee rates on the days immediately adjacent to a holiday.

Holidays also affect the amount of overtime worked. Since compensation is based on triple time for holiday work, holiday hours are strongly discouraged when scheduling work. It is also an unwritten plant policy that employees should spend the holidays with their families and relax away from the workplace. The net effect is a significant drop in overtime during the holiday weekends. Thus, an expected conclusion would be that weeks containing holidays would display low rates of absenteeism and overtime. Such data would taint the results of any relationship of overtime and absenteeism in the normal work sequence.

In order to guard against the holiday variable, the data were analyzed both with and without holiday affected totals. Both sets of data must be studied because raw scores in some classifications show definite holiday variation while some classifications do not.
In addition to unique effect of holidays on the data, there is the common concern for stability within the population. The more constant the population studied the more consistent the data. Obviously, large changes in the population could cause many personal characteristic variable changes as the makeup of the group changes. Fortunately, during the life of this study, the population has been very stagnant. Mainly as a result of the continual trend of automation replacing manual labor and the general market penetration decrease of the product, the work force has remained constant. The only changes to the work force level has been absorbed by attrition with very little hiring being done.

Since the work force remained constant, the need for classification changes was also minimal. There was little need to move personnel from one job classification to another. Also, the classification movement between skilled and both nonskilled and service is very limited due to the extensive training required and limited need for skilled personnel. The classification movement between nonskilled and service, although less difficult, is surprisingly low. The amount of classification change that were hand counted in the departments between these two groups accounted for only 9% at the Kalamazoo General Motors plant in 1987 according to actual departmental transfers. The classifications as previously defined are easily distinguishable and coded on all personnel files, payroll functions, and union documentation.

The final concern about the data is if the data are a true measurement of what is supposed to be measured. Integrity of the data is
maintained by automatic cross verification of the numbers by payroll, supervision, and committee representation of the union. The absentee numbers and amount of overtime figures are well documented and audited. The data are, therefore, as accurate as possible.

The percentage of daily noncontractual absenteeism was recorded from the employees' time statements and verified by both the immediate supervisor and the hourly payroll department. The data were verified against the actual "in and out" punches made by the employee. Since the same record keeping is used within payroll, the security of the data is very well documented. Any changes or alterations must be signed by a supervisor.

The amount of overtime worked must be verified in advance of overtime scheduled and validated against the "in and out" punches of the employee. Again, these data are used within the payroll department; and therefore, security of these data is very well documented. It would be difficult to misuse the payroll system and generate inconsistent data.

Each department realized that its own population was a unique study within itself and gave full cooperation. Since only anonymous numbers of attendance and absences were recorded, the protection of human rights was not an issue.

Thus, each limitation in data and design is recognized and precautions are taken in the design to minimize any risk to skew the results or interpretations. The design is structured to address the hypotheses stated. The results obtained should answer the question
of the relationship of overtime worked and job classification upon absenteeism.
CHAPTER IV

RESULTS

Introduction and Format

The intent of this dissertation was to test the existence or nonexistence of a relationship between absenteeism and the amount of overtime worked by various job classifications. The testing for such a relationship followed the three research questions and their corresponding hypotheses as stated in the previous chapter. The results of the testing will be displayed within the same format. Each research question will be analyzed in respect to the test data observed for that question. In this format the results of the means comparisons and the ANOVA test of means for absenteeism between different job classifications will be reviewed first. Second, the correlation data between absenteeism and the amount of overtime worked will be reviewed. Finally, the results of the two-way ANOVA will be reviewed.

The data for these tests will be examined including the holiday weeks on a weekly basis for the 4.5 years of data. The data for these tests also will be examined excluding the holiday week for the same period of time. Special mention will be made of any significant differences observed due to the inclusion of the holiday weeks.

In addition, any observable pattern of data over a shorter time period may be analyzed if the pattern of data seems to warrant
further analysis. Such a pattern might be a seasonal occurrence that would be predictable year after year. An example would be an annual rise in absence rate due to the extreme heat in the hot summer months. Another pattern might be a sudden observable change in data trends because of the introduction of an extraneous variable. Extraneous variables, such as new product introductions, major process changes, shifts in customer demands and expectations, or conscious managerial overtime controls, might sharply affect one or more variables in an artificial manner. Such extraneous variables could cause a sudden shift in the mean of the affected group's variable. For example, a managerial decision to cut all overtime by a mandated percentage might affect the mean overtime hours and also might interact with the absentee percentage rate.

It is important to investigate abnormal patterns in the data because they could reflect behaviors over the short term that differ from expected norms. Therefore, to keep seasonal or specific extraneous variables from biasing the data in this study, each abnormal pattern of data will be analyzed separately as well as analyzed within the total data set. It is possible that some data pattern might be meaningful both short term as well as long term in relation to one of the three research questions.

Comparisons of Absence Rates Across Job Classifications

The data were initially observed and recorded with reference to the first research question: Is there a relationship between absenteeism and job classifications? In other words, is there a
significant difference in the rate of absenteeism between the job classifications of skilled, service, and nonskilled employees?

The data are first presented to answer the research question of relationship. The data are then listed to compare mean scores with and without inclusion of the holiday weeks. Finally, the data are displayed to show consistency year to year.

The results of the one-way ANOVA to test the null hypothesis that the mean absence rate for the three classifications of skilled, service, and nonskilled including holiday weeks are listed in Table 2.

Table 2
Summary of Analysis of Variance of Absentee Percentage for Skilled, Service, and Unskilled Job Classifications Including Holiday Weeks

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>1380.64</td>
<td>2</td>
<td>1655.92</td>
<td>.0000</td>
</tr>
<tr>
<td>Week</td>
<td>329.88</td>
<td>230</td>
<td>3.44</td>
<td>.0001</td>
</tr>
<tr>
<td>Weekly overtime</td>
<td>1.67</td>
<td>1</td>
<td>3.99</td>
<td>.0400</td>
</tr>
<tr>
<td>Weekly overtime x classification</td>
<td>1.48</td>
<td>2</td>
<td>1.78</td>
<td>.1700</td>
</tr>
</tbody>
</table>

It was evident from both the large \( F \) value of 1655.92 and the probability of .0000 that the null hypothesis was rejected. The hypothesis that there would be a significant difference in the rate of absenteeism between the job classifications including holiday weeks was therefore supported.
Follow-up testing to find out which classifications were different from each other was done by way of the LSD test. The LSD test was chosen because it is conservative and yet robust enough for many applications. The LSD test also has the advantage of not requiring equal sample sizes. The results of this test are listed in Table 3.

Table 3

Summary of the Results of $t$ Test (LSD) for Absence
Mean Percentage by Job Classification
Including Holiday Weeks

<table>
<thead>
<tr>
<th>Job classification</th>
<th>Mean</th>
<th>SD</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled</td>
<td>1.24</td>
<td>.042</td>
<td>Yes</td>
</tr>
<tr>
<td>Service</td>
<td>1.62</td>
<td>.042</td>
<td>Yes</td>
</tr>
<tr>
<td>Nonskilled</td>
<td>4.41</td>
<td>.042</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The $t$ test demonstrates that when comparing the means for skilled and service classifications, the $t$ value of 6.43 ($df = 230$) is significant at the $p < .05$ level. When comparing the means of skilled and nonskilled classifications, the $t$ value of 52.80 ($df = 230$) is significant at the $p < .05$ level. Also, when comparing service and nonskilled classifications, the $t$ value of 46.36 ($df = 230$) is also significant at $p < .05$. Therefore, significant differences exist between all three classifications with respect to each other. The absentee means for all three classifications for the data including holiday weeks are different.
The results of the one-way ANOVA to test the null hypothesis that the mean absence rate for the three classifications of skilled, service, and nonskilled excluding holiday weeks are listed in Table 4.

Table 4

Summary of Analysis of Variance of Absentee Percentage for Skilled, Service, and Unskilled Job Classifications Excluding Holiday Weeks

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>1288.90</td>
<td>2</td>
<td>1523.36</td>
<td>.0000</td>
</tr>
<tr>
<td>Week</td>
<td>304.27</td>
<td>209</td>
<td>3.44</td>
<td>.0001</td>
</tr>
<tr>
<td>Weekly overtime</td>
<td>2.55</td>
<td>1</td>
<td>6.03</td>
<td>.0140</td>
</tr>
<tr>
<td>Weekly overtime x classification</td>
<td>0.15</td>
<td>2</td>
<td>0.18</td>
<td>.8300</td>
</tr>
</tbody>
</table>

The null hypothesis for data excluding the holiday weeks can again be rejected based on the F value of 1523.36 and the probability figure of .0000. Again, the hypothesis that there would be a significant difference in the rate of absenteeism between the job classifications excluding holiday weeks was therefore supported.

The t test (LSD) was again used to determine which classifications were different from each other. The results of the t test for the weeks excluding the holiday weeks are listed in Table 5.

When comparing the means for skilled and service classifications, the t value of 5.80 (df = 209) is significant at the p < .05 level. When comparing the means of skilled and nonskilled
Table 5
Summary of the Results of t Test (LSD) for Absence Mean Percentage by Job Classification Excluding Holiday Weeks

<table>
<thead>
<tr>
<th>Job classification</th>
<th>Mean</th>
<th>SD</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled</td>
<td>1.26</td>
<td>.045</td>
<td>Yes</td>
</tr>
<tr>
<td>Service</td>
<td>1.63</td>
<td>.045</td>
<td>Yes</td>
</tr>
<tr>
<td>Nonskilled</td>
<td>4.46</td>
<td>.045</td>
<td>Yes</td>
</tr>
</tbody>
</table>

classifications, the t value of 49.31 (df = 209) is significant at the p < .05 level. Also, when comparing the means of nonskilled and service classifications, the t value of 44.80 (df = 209) is also significant at p < .05. Therefore, significant differences exist between all three classifications with respect to each other. The absentee means for all three classifications for the data excluding holidays as well as the data including holidays are different.

Additional comparisons of mean absentee data to compare yearly trends were made. These data, however, are listed in a different format to aid analysis.

The data listed previously have been taken from three classifications. The absence mean for each classification was a weighted mean average of the departments' means that make up the classification. That is, the mean absence rate for unskilled was the sum of the weighted means of Departments 11 and 21 divided by two. This should be noted because additional results listed use departmental
means that will therefore differ slightly from classification means.
This departmental format is used to review the importance of the
inclusion or exclusion of the holiday weeks. It is used to demon­
strate consistency of data from year to year and to explain some
particular variations.

A comparison table (Table 6) demonstrates the effects on both
the means and standard deviations of inclusion or exclusion of the
holiday weeks within the data.

Table 6
Comparison of Mean Percentage and Standard Deviation
With and Without Holiday Weeks by Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Dept.</th>
<th>Mean with holiday</th>
<th>Mean without holiday</th>
<th>SD with holiday</th>
<th>SD without holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonskilled</td>
<td>11</td>
<td>4.35</td>
<td>4.42</td>
<td>1.21</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>4.46</td>
<td>4.50</td>
<td>1.49</td>
<td>1.51</td>
</tr>
<tr>
<td>Service</td>
<td>31</td>
<td>1.68</td>
<td>1.62</td>
<td>0.77</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>81</td>
<td>1.60</td>
<td>1.68</td>
<td>1.40</td>
<td>1.37</td>
</tr>
<tr>
<td>Skilled</td>
<td>18</td>
<td>1.72</td>
<td>1.72</td>
<td>0.77</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>51</td>
<td>0.96</td>
<td>0.98</td>
<td>0.49</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>0.94</td>
<td>0.96</td>
<td>0.81</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>65</td>
<td>0.74</td>
<td>0.78</td>
<td>1.74</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>68</td>
<td>1.90</td>
<td>1.93</td>
<td>1.08</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>71</td>
<td>1.09</td>
<td>1.12</td>
<td>0.58</td>
<td>0.59</td>
</tr>
</tbody>
</table>
It appears that inclusion of the holiday weeks has a positive effect on the data by decreasing the absentee percentage mean. With the exception of Department 31 from the service classification, every department and, thus, all classifications showed an improvement in absentee percentage when holiday weeks were included in the data. The standard deviation also tended to be reduced although not as consistently as was the mean shift. Two of the 10 departments (Departments 31 and 51) demonstrated no standard deviation change. Two of the 10 departments (Departments 81 and 61) showed more variation when the holiday weeks were included. The remaining six departments demonstrated a decrease in variation when the holiday weeks were included.

It is obvious from Table 6 that the special plant policy with regards to payment for holiday pay based partially on absenteeism during the holiday weeks does in fact influence absentee rates even on an annual basis. It is also interesting that considering there are five holiday weeks per year and, therefore, about 10% of the calendar weeks are affected by this special policy, that the net effect is still very small. Also, the absence rate does not drop to zero or near zero on these holiday weeks but merely is lower than normal.

In addition to taking precaution to guard against the effects of the holiday policy, an attempt was made to discover any other variation in this study's data that might have been a result of some extraneous variable not yet identified. One check for variation was to compare the yearly absence percentage means for each classification.
and subsequent departments. These yearly means were then compared year by year as well as to the total mean for the classification over the 4.5 years of data. Any abnormal variation might then be explained on the basis of either an extraneous variable or research design flaw.

The means for each classification and subsequent department absentee percentage per year are displayed in Table 7.

It is significant that the data display consistency from year to year in that the means for departments and classifications avoid any radical swing away from what appears to be normal. The largest range is just in excess of 1% in the service classification, Department 81, due to a high point of absentee percentage in 1986. Also, the skilled classification, Department 68, varied just over a percent as absentee rates dropped from 1987 high to 1988. No abnormal extraneous variable could be associated with the drop in absentee percentage in Department 81 during the year of 1987. This variation was not evident in the other department (Department 31) within the service classification. It would seem more likely that the year of 1986 had a higher than normal, although unexplained, absentee rate. The drop in absence rate for Department 68 in 1988 coincides with the increase in absenteeism in Department 65. These absence rate fluctuations are reflective of a managerial decision that aligned some types of work formerly done by Department 68 to Department 65. This work realignment also caused personnel changes and a movement of approximately 20 employees from Department 68 to Department 65. This particular group of employees were apprentices and low seniority skilled tradesmen.
### Table 7

Yearly Absence Percentage Mean by Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Nonskilled</th>
<th>Service</th>
<th>Skilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>11 21</td>
<td>31 81</td>
<td>18 51</td>
</tr>
<tr>
<td>Mean absence %</td>
<td>1985</td>
<td>1986</td>
<td>1987</td>
</tr>
<tr>
<td></td>
<td>4.82 4.17</td>
<td>1.89 1.89</td>
<td>1.62 0.95</td>
</tr>
<tr>
<td></td>
<td>4.78 5.35</td>
<td>1.82 2.72</td>
<td>1.74 1.00</td>
</tr>
<tr>
<td></td>
<td>4.83 5.21</td>
<td>1.67 1.62</td>
<td>2.12 1.00</td>
</tr>
<tr>
<td></td>
<td>3.85 3.48</td>
<td>1.15 0.92</td>
<td>1.59 0.86</td>
</tr>
<tr>
<td></td>
<td>3.31 3.28</td>
<td>1.27 0.91</td>
<td>1.19 0.76</td>
</tr>
<tr>
<td>Mean absence %</td>
<td>1988</td>
<td>1989 (one half year)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.83 3.48</td>
<td>1.15 0.92</td>
<td>1.59 0.86</td>
</tr>
<tr>
<td></td>
<td>3.31 3.28</td>
<td>1.27 0.91</td>
<td>1.19 0.76</td>
</tr>
<tr>
<td></td>
<td>3.31 3.28</td>
<td>1.27 0.91</td>
<td>1.19 0.76</td>
</tr>
</tbody>
</table>

Mean absence % 1989 (one half year)

|                | 3.31 3.28  | 1.27 0.91 | 1.19 0.76 | 1.32 0.95 |
Although this movement of personnel may have caused departmental number to change, since they were all from one classification, the classification number remained consistent.

Special note should be made of the absentee percentage for Department 65 for the first 6 months of 1989. This department recorded 23 weeks of perfect attendance within the 25-week period. Although exceptional group behavior, the perfect attendance might be attributed to the introduction of an extraneous variable in the form of a unique psychological contract between the members of Department 65 and management. This unique psychological contract and its implications will be reviewed within the discussion portion of this paper.

It has been shown that the absentee percentage for each classification is very constant from one year to the next over the 4.5 years of data. It also is apparent that absenteeism is consistent within classifications from year to year when comparing data that include the holiday weeks with data that exclude the holiday weeks. It is also apparent that the absentee percentage mean is not only consistent for each classification group but that these classification groups are consistently different from each other.

Since classification as a variable has clearly been demonstrated to have a relationship to absenteeism in this work setting, classification can now be analyzed in relation to the amount of overtime worked. First, however, the relationship between the amount of overtime worked and absenteeism must be analyzed.
Correlation of Absenteeism and Overtime Worked

The second research question addressed in this study concerned the existence of a relationship between the amount of overtime worked and the absence rate. This question was tested by means of a Pearson product-moment correlation test. The variables used in the test were the mean absentee percentage per week and the mean amount of overtime worked in hours per week. The correlation coefficients were computed for the total weeks of the 4.5 years of data. The correlation coefficients were also computed for the total weeks of the 4.5 years of data minus the holiday weeks. These holiday weeks were excluded because of the aforementioned reasons pertaining to special plant policies that could affect both absenteeism and overtime rates for holiday weekends. The results of these correlations are listed in Table 8.

Within the data of the 10 departments tested, 6 departments demonstrated a significant relationship between absenteeism and overtime when the holiday weeks were included. Four departments showed no significant relationship. Within the data of 10 departments tested excluding the holiday weeks, 3 departments demonstrated a significant relationship between absenteeism and overtime worked. Seven departments showed no statistically significant relationship. Thus, the null hypothesis was rejected in some cases but not in all cases. Within the combined data for all 20 departments analyzed, there was a relationship for 10 cases and no relationship for 10 cases.

Although some cases of statistical significance are evident, these statistical significant cases might not be substantive. A
Table 8
Correlation Coefficients of Absenteeism and Overtime by Departments Including and Excluding Holidays

<table>
<thead>
<tr>
<th>Classification</th>
<th>Nonskilled</th>
<th>Service</th>
<th>Skilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>11 21</td>
<td>31 81</td>
<td>18 51 61 65 68 71</td>
</tr>
<tr>
<td>Coefficient with holidays</td>
<td>.13* .18*</td>
<td>-.07 .20*</td>
<td>-.03 .12* .08 -.04 .25* .15*</td>
</tr>
<tr>
<td>Coefficient without holidays</td>
<td>.07 .18*</td>
<td>-.06 .21*</td>
<td>-.04 .03 .05 -.05 .24* .10</td>
</tr>
</tbody>
</table>

*Alpha = .05, n < 200.

A substantive correlation would justify policy-making decisions. For example, a .30 correlation only implies a 9% variable association. This implies that 9% of increased absenteeism would be associated with overtime. Although this would be significant statistically, it would not be substantive as a policy or decision-making number. It would not be practical for managers to make decisions on policy that resulted from an association of two variables that affected less than 10% of the employees in a work group. Thus, even though some departments had a statistical relationship between absenteeism and the amount of overtime worked, no department had a substantive relationship.

It is apparent that there is no strong correlation either positively or negatively with respect to a relationship between
absenteeism and the amount of overtime worked. Both nonskilled departments were positive in what small correlation there was. The service classification departments and skilled classification departments were mixed with very weak positive and negative numbers. The largest correlation coefficient for any department was a positive .25 correlation coefficient for Department 68 of the skilled classification. Even this correlation is well below the least substantive coefficient of .30. It is also obvious from the other coefficient numbers of the skilled departments that Department 68 was somewhat unique in that the coefficient of .25 was not inherent to the classification, as the other skilled departments were almost nonexistent in correlation.

There seems to be no pattern to the data as concerned with classification. There is no evidence that one classification is different from another because no classification shows a substantive relationship. This lack of difference by classification is unlike the obvious differences in absentee percentage means previously presented in the first research question.

Also unlike the absence means which were all affected by the inclusion of the holiday weeks, the correlation coefficients for the data with regard to correlation between overtime and absenteeism demonstrated no effect. The coefficients for the data including holiday weeks and the coefficients for the data excluding the holidays seem to be similar. Six departments from various classifications showed less correlation, while four departments demonstrated slightly more correlation or remained the same. Thus, with such
slight mixed movement in the correlation coefficients and the fact that no coefficient changed to any degree it can be stated that the inclusion or exclusion of the holiday weeks is not significant to this research question.

Thus the correlation study expresses a lack of any substantive correlation (at least .30 correlation coefficient) and that inclusion or exclusion of the holiday week is not seen as a factor over the 4.5 years of data. However, it is necessary to attempt to find even a short-term relationship. To this end, various segments of time were analyzed for particular departments where possible patterns appeared in the data. Through a general eyeballing of the data, there appears to be patterns of data in Department 11 during 1986, Department 21 during 1987, Department 61 in 1986, and Department 65 in 1987. These blocks of data are displayed in scatterplot form in Appendices A-D.

Closer evaluation of these graphs and the correlation studies associated with them demonstrated that in all instances no strong correlation exists. The data for Department 11 for 1986 computed to a negative correlation coefficient of -.08 as compared to a positive .13 coefficient for the 4.5 years of data computed for Department 11. The perceived pattern may have resulted from the change in correlation from positive to negative rather than an emergence of a significant correlation coefficient. It may be interesting to attempt to understand why this particular year changed correlation, but it is not substantive enough to effect staffing decisions.

Department 61 for 1986 and Department 21 for 1987 demonstrate almost exact coefficients for the years as compared to the total
study coefficients for the same departments. The coefficient for Department 61 for 1986 was .05 as compared to .08 for the total of the study. The coefficient for Department 21 for 1987 was .17 as compared to .18 for the total of the study. Thus, the perceived pattern did not exist. The coefficients for a section of the study being so close to the total study's coefficient suggest a consistency in the data.

The final block of data analyzed because of perceived patterns when eyeballing the data was Department 65 for the year 1987. The coefficient for Department 65 for 1987 was -.22 as compared to a -.04 for the total of the study. This department showed a stronger correlation but was still not substantive (a correlation in excess of .30).

It is apparent that no substantive correlation exists between absenteeism and the amount of overtime worked. The lack of support for this type of relationship is evident in the study and in blocks of time that were analyzed because of perceived patterns that may have existed. The existence of actual patterns is not important in themselves unless they reflect a relationship between absenteeism and overtime. In each case analyzed no such relationship could be supported.

The Interaction of Classification and Overtime on Absenteeism

The third question addressed in this study asked if there was an interaction between job classification and amount of overtime worked
on absenteeism. That is to say, would the effects of working more and more overtime influence one classification of workers differently than another classification of workers with regard to absenteeism. This study addressed this question in regards to the three job classifications of skilled, service, and unskilled as they worked varied amounts of overtime.

The study tested the null hypothesis that for the classifications of skilled, service, and nonskilled workers, the mean absence rate no matter how affected by the amount of overtime worked would remain constant.

The probability value computed by the two-way ANOVA for the 4.5 years of data including holidays was .1701. This figure, when compared to the alpha level of .05, is not statistically significant. In addition, the probability value created by the same ANOVA test for the 4.5 years of data excluding holidays was .8371. Again, when this figure is compared to the alpha level of .05, it is not small enough to be statistically significant. Since the null hypothesis cannot be rejected, support was not given to the hypothesis that there would be an interaction effect between the job classifications of skilled, service, and nonskilled workers, and the amount of overtime worked.

To help clarify this research question a trio of figures will be used to demonstrate graphically the possible data that could be taken. Figure 1 represents a theoretical model of data taken with three different classifications showing constant but different levels of absenteeism (no interaction). As the amount of overtime worked increases, all three classifications' levels of absenteeism remain
constant with respect to each other (as represented by parallel lines on Figure 1). Such graphic parallelism depicts no evidence of interaction between classification and overtime.

![Graph showing parallel lines for Classification A, B, and C with respect to overtime worked.]

Figure 1. Absenteeism by Overtime for Three Classifications Demonstrating No Interaction Between Variables.

Figure 2 graphically depicts what an interaction between overtime and job classification on the absence rate would look like.

![Graph showing lines for Classification A, B, and C with respect to overtime worked, indicating different trends.]

Figure 2. Absenteeism by Overtime for Three Classifications Demonstrating Interaction of Variables.

Figure 2 demonstrates that as the amount of overtime worked increases the difference in absentee rates between the three
classifications was not constant. This graphic change shows what an interaction between the variables of classification and overtime worked would look like.

To answer the third research question of the existence or non-existence of interaction between job classification and amount of overtime worked on absenteeism, the same type of graphic figure was constructed. The data used to construct Figure 3 are the data results of the two-way ANOVA test for interaction.

```
4.5  Classification nonskilled
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5

--- Classification service
------ Classification skilled

--- = with holidays
------ = without holidays

Figure 3. Absenteeism by Overtime for Three Classifications Based on Recorded Data.
```

The three slopes of the lines on the graph represent the plotting of data for the three job classifications. As the graph visually depicts the three lines remain constant with regards to each
other. This demonstrates a lack of interaction between any job classification and amount of overtime increases with respect to absenteeism.

Figure 3 also represents a summary of the results of this study. It graphically demonstrates the support given to the hypothesis that there is a relationship between absenteeism and job classification. The data have shown unique levels of absenteeism consistent between different departments within the same classifications. It has also shown that the three job classifications of skilled, service, and nonskilled were not the same with regard to absenteeism. There was a significant difference between the absence rate of each of the three classifications.

Figure 3 also explains the relationship between absenteeism and the amount of overtime worked. The figure shows that absenteeism and overtime do not correlate. Figure 3 demonstrates the lack of support for a positive correlation by graphically displaying a constant or close-to-constant amount of absenteeism as the amount of overtime worked increases.

Finally, Figure 3 graphically shows the lack of interaction between the job classifications and the amount of overtime worked on absenteeism. This is illustrated by the parallel lines that represent the absentee data for the three classifications.

The results have addressed all three of the research questions and have addressed the study with and without the holiday factor. The results have also highlighted isolated patterns of behavior within the study. From all of these comparisons and their corresponding

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
data, certain conclusions can be made about the behavior of the three classifications of employees at BOC Kalamazoo. Also, from these conclusions, projections can be made, additional speculations can be made, and questions can be asked.
CHAPTER V

DISCUSSION

The data displayed in Chapter IV are used to provide insight into the question of the existence of a relationship between absenteeism and the amount of overtime worked by various job classifications. The discussion and conclusions based on this study and its data are formatted within the three research questions addressed; those being: (a) Is there a relationship between job classification and the absentee rate? (b) Is there a relationship between absence rate and the amount of overtime worked? (c) Is there an interaction between the variable of classification and the variable of the amount of overtime worked upon the third variable of absenteeism.

However, before addressing these three research questions, it is important to understand the framework or work climate in which this study was taken to avoid conclusions that may not be appropriate to any other work setting. It must be reemphasized that this study was done on data accumulated from the BOC Kalamazoo Metal Stamping Plant. It has been the practice of this facility that the vast majority (up to 90%) of the overtime worked is done on a voluntary basis. This policy is consistent with the local labor and management letter of understanding with regard to forced overtime (General Motors BOC Kalamazoo, 1989). Due to this policy any findings that this study may yield are unique to this type of facility or may be unique only
to this plant. It would indeed be difficult to find an exact set of labor practices and similar types of work in another facility outside the automotive field. In addition to the facility's uniqueness is the nature of the study; that being a causal comparative study. As stated during the discussion of the research design, the purpose of this study was to establish the existence or nonexistence of a relationship between absenteeism and the amount of overtime worked across job classifications. The study was not necessarily looking for specific causation. The existence or nonexistence of the relationship is enough to influence policy making decisions with respect to staffing and overtime for the plant population. The significance, however, is much more far reaching. The use of data to make sound management decisions about personnel behavior decisions as well as technical decisions rather than relying on unfounded or, at least, unproven assumptions would be a step in the way of progress in management thought. Significant findings in this study would make an impact not because they are inferential, but that significant findings would give impetus to further unique studies in similar settings as well as different work settings. As the data from additional studies formed a data, base patterns of behavior for types of organizational settings can be studied that can aid predictability. Therefore, as the data for this study are analyzed and conclusions made, the focus will be to make conclusions about this unique organizational setting and projections into nonunique organizations and different organizational climates. These conclusions and projections will be discussed within the three research questions posed.
Relationship Between Classification and Absenteeism

The results of this study give support to the hypothesis that there is a relationship between job classification and the percentage of absenteeism. In the BOC Kalamazoo environment this implies that staffing decisions should be reflective of the existing norm of absenteeism. Void of some systemic change or the inclusion of some other variable, it is reasonable to conclude that the consistent absentee figures shown in the results section in Table 7 will continue into the future. Further, there is some difference between the skilled classification and the nonskilled classification that results in higher attendance by skilled personnel. Perhaps the fact that absenteeism reduces as the level of professionalism (higher level skills and competency level) increases is reflective of the job involvement literature of Clegg (1983), Steers and Rhodes (1978), and Ilgen and Hollenback (1977). This job involvement professional concept is further supported when the skilled results are carefully analyzed.

The six skilled departments that make up the skilled classifications are not all the same functionally due to differences in their own work climate. Two of the six departments (Departments 18 and 68) are line service functions that bind these skilled tradesmen directly to the production line. These skilled tradesmen being tied to production lines are less interactive with their own group and possibly less subject to the existence of an absence culture of Salancik and Pfeffer (1978) if one is present. The data from Table 7 indicate
that Departments 18 and 68 are very similar to each other and defi-

nently not similar to the other skilled trade departments. The re-

maining four skilled trade departments concentrate on tool construc-

tion and facilities activities but are not limited by the constraints of production. Thus, these employees are more free to interact,

communicate, and form behavioral alliances with each other. It is,

therefore, not really surprising that the absence rates for the two skilled trades departments tied to production would be different from the four skilled trades departments involved with construction. It is interesting that the production service skilled trades absence percentage is very comparable to the service classifications, those tied to production but not skilled (Departments 31 and 81). This fact leads to speculation that job classification may be more aptly defined by the type of work within its work climate that allows professionalism and freedom for interaction. Such classification defi-
nition may be more meaningful than by traditional job description classification groupings.

The underlying issue, however, is that a definite behavioral difference exists between job classifications with regard to absen-
teeism. The importance as to why this is so may be necessary to improve performance, but not to manage and staff at current employ-
ment levels. The significance of this study is to insure proper staffing and managerial policies at current employment within the current job climate. The projection for other business situations is to shape the business climate and employment classification groups necessary so as to insure professional growth. The increase in
professional growth and favorable organizational climate is needed to encourage an absentee culture consistent with organizational goals. The unification of organizational and personal goals can therefore be reflective in overtime policies. Not only can organizations be more efficient by limiting the number of employees and therefore burden cost, the organization can develop a picture of the amount of overtime their employees want and expect and manage to that level. Thus, job classification becomes an even greater determinate in both staffing and overtime decisions.

The Relationship Between Absenteeism and the Amount of Overtime Worked

The lack of substantive correlation between the amount of overtime worked and the absence rate cannot support the hypothesis that such a relationship exists. It is also apparent by the consistent lack of correlation from classification to classification between the amount of overtime worked and absenteeism that this lack of relationship is universal to all groups studied. Thus, staffing decisions for BOC Kalamazoo should not be based on this relationship. It is obvious that at least up to the historical normal overtime load, this overtime does not increase absence from work. Overtime has become an accepted informal replacement for cyclic staffing needs. Since all overtime is voluntary, the employees' willingness to participate in working overtime could be taken as acceptance. Planning work loads and manpower planning should be planned with the employees' interest in mind. In this way organizational goals and employee needs are
mutually met. The question remains as to how high the overtime can go before either the employees no longer wish to participate or a reaction like increased absenteeism occurs.

This study's lack of support for a substantive relationship between absenteeism and overtime also is not aligned with the approach to cultural absenteeism that suggests employee participation and sense of need would be influential in absence behavior (Marks et al., 1986). This study cannot support the aforementioned authors' suggestion that organizational impact in the form of employee worth and need necessarily will affect the absence culture. This study's findings show that even if this need for the employee is evident by increased demands for overtime and pressure to perform, the employee may not increase their normal attendance percentage. Perhaps this is a result of the organization's need for overtime commitment and job involvement. This may not be shared by the employees. More probably this lack of correlation is a result of such a strong absentee norm that in a voluntary environment the job involvement variable is not significant.

This is not to imply that there is no evidence of an absentee culture. The absentee culture is very evident but is not connected with job involvement as defined by Marks et al. (1986). The absentee rates displayed in Table 7 do support a more general concept of an absentee culture as defined by classification rather than by the amount of overtime worked. The type of culture evident in this study is defined by Steers and Rhodes (1984) and Allen and Higgins (1979) as a group or social consensus concerning the legitimacy of absence
at a particular level for a particular group. Considering the definite levels of expertise and professionalism between the classifications and the definite cultural groups apparent within BOC Kalamazoo, it is not surprising to observe this type of behavioral data.

The almost complete lack of variation in the absence percentages from year to year for both department and classification suggests that a psychological contract exists between the individual employees and their group. This type of psychological contract is defined by Schein (1980) as a set of unwritten reciprocal expectations between the employee and the organization concerning a behavior. Thus, it is expected that skilled tradesmen be absent at a lesser level than nonskilled both by the organization and the individual tradesman. Any influence the amount of overtime worked has cannot compete with this norm. In fact, the norming effect of a special psychological contract may be the reason for the drastic reduction in absenteeism within Department 65 during the first 6 months of 1989.

The overtime level for Department 65 during the first 6 months of 1989 was very high, yet the absentee percentage was zero for 24 out of 26 weeks. This radical departure from the norm of the previous 4 years was caused by a conscious effort of the members of Department 65 to be present.

Upon investigation as to why the absence rate had dropped so drastically, the conclusion based on informal interviews with members of the department were consistent. The department members perceived an organizational push to add personnel to Department 65 because of the workload. The mutual fear of possible job turmoil, caused from
shift changes and loss of seniority preference due to the addition of higher seniority level employees, caused a psychological contract for zero absenteeism. The belief that zero absenteeism would produce enough output to inhibit staffing changes that had been proposed by management. This self-induced contract caused an artificial culture of nonabsence that was independent of the amount of overtime worked.

This type of psychological contract may be effective in a unique instance, but questions can be raised about the advantages of such a working climate over an extended period of time. It does, however, again demonstrate that overtime is not a factor in predicting absentee rates. It further implies that staffing and overtime policies should be more in tune to the employees' needs. It should be apparent that at least in Department 65 at BOC Kalamazoo the members of that work group would rather work the overtime necessary than disrupt their work group. The work group's culture and the goals of the organization can both be fulfilled. This is not to say that other work groups in other climates may not behave differently. Perhaps a work climate that mandates overtime would have different results. Only further study would show quantitatively that such conditions exist. Other climates may have less structured work groups with naturally more dynamic people movement through the work groups. This lack of group stability could result in absence behavior much different from at BOC Kalamazoo. Until tested, this is only speculation. Studies on different as well as similar climates are needed in order to make reasonable predictions about absence cultures in other organizations. This study relates one case study that shows that in this
particular climate overtime does not affect the absentee culture. The remaining question concerns the more indirect influence of overtime on absenteeism. The question involves the interaction of overtime with job classification and this interaction's effect on absenteeism.

The Interaction of Overtime and Job Classification on Absence Rates

The results displayed in Figure 3 cannot support the hypothesis that there is an interaction between the amount of overtime worked and the different job classifications on absenteeism in BOC Kalamazoo. Since such a relationship cannot be supported, staffing and overtime policies can be planned according to the cultural norm of the different classifications at BOC. The implication is that working overtime for at least a limited time may be much more in harmony with the employee group preference and more economical for the organization than the high cost of either hiring and training new employees or supplementing with contract employees. It is rather obvious that reducing overtime will not help the absence rate in any classification. The behavioral response to absenteeism and overtime is fixed within the cultural norms of the particular classifications within BOC Kalamazoo.

The conclusions that this study generates are thus consistent with the three research questions. There is a relationship between absentee rate and job classification at BOC Kalamazoo. There is no support for a relationship between the amount of overtime worked and
absenteeism at BOC Kalamazoo. There is no support for the interaction between job classification and the amount of overtime worked on the three job classifications studied. The uniqueness of this study to a specific organizational climate suggests the need to test other organizational climates that are similar to BOC Kalamazoo to see if these organizations when studied give similar results. If so, then predictions could be made about similar organizations. If similar studies do not produce similar results, the value of this study is not lost. Even if all organizations are truly unique, any organization large enough to support this type of study could use the data to manage more scientifically and be more in harmony with the personal goals of its employees. If, however, similar and different types of organizations and organizational climates produce similar behavior with regard to absenteeism, overtime, and job classification, then the predictive value would be well worth the expense of this type of study.
APPENDICES
Appendix A

Overtime Versus Absenteeism, Department 11, 1986
Appendix B

Overtime Versus Absenteeism, Department 21, 1987
Hopkins4 SAS: Overtime vs. Absenteeism, DEPT 21, 1987

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix C

Overtime Versus Absenteeism, Department 61, 1986
Absence vs. Absenteeism, DEPT 61, 1986

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix D

Overtime Versus Absenteeism, Department 65, 1987
Appendix E

Letter From Human Subjects Institutional Review Board
Date: September 11, 1989
To: Tom Hopkins
From: Mary Anne Bunda, Chair

It is the Board's opinion that the data which are collected are not from human subjects, but rather company information on aggregate groups of individuals. Therefore, the Board does not have to approve this archival study. However, you may want to retain this letter for the graduate college.

cc: C. Warfield, Educational Leadership
BIBLIOGRAPHY


