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**A MULTI-LEVEL INVESTIGATION OF ABSENCE CLIMATE:  
INDIVIDUALS, SUPERVISORY GROUPS, AND PLANTS**

by

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(ABSTRACT)

The study of absence from work has been of interest to organizational researchers for over 50 years. Most prior studies have considered absence behavior from the perspective of the individual employee only. The potential effect of a social unit in which an employee works has been given relatively little attention. This study examines the relationship between absence behavior and absence climate at the level of the supervisory group and plant, as well as the level of the individual.

Absence climate was defined as *the psychologically meaningful shared perceptions that workers hold concerning absence procedures and practices occurring within an organization*. These procedures and practices were categorized into three dimensions, i.e. Organizational Pressure to Attend, Explanations for Absence and Consequences of Absence. In order to assess employee perceptions of absence a questionnaire was administered to 1139 apparel employees, who were members of 46 different work groups embedded within 5 different plants of the same organization. Absence behavior was measured by both absence rate and absence frequency from attendance records over a 12 month period.

This study found (after controlling for gender, age and tenure) that Explanations for Absence was significantly related to absence behavior at the individual level of analysis

and that Consequences of Absence was significantly but not practically related to absence behavior at the level of the supervisory group. Hence, only the individual level of analysis was found to be appropriate for the study of absence climate in this study.

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awkwardness of long distance (State University of New York at Buffalo) and for largely developing the methodology I have used for examining absence climate. I am convinced that his concerns that both variables and entities be considered when testing theories will make a fundamental change in how research is accomplished.

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# Table of Contents

<b>Chapter 1: Introduction</b> .....	<b>1</b>
Purpose .....	2
Significance of the Study .....	3
Summary .....	5
<b>Chapter 2: Literature Review</b> .....	<b>7</b>
Overview .....	7
Theoretical Models of Absence .....	8
Withdrawal Model .....	8
Decision Model .....	9
Adjustment Model .....	10
Social Model .....	12
Conceptual Model .....	15
Absence Behavior .....	17
Absence Climate .....	19
Organizational Pressure to Attend .....	21

Explanations For Absence .....	23
Consequences of Absence .....	25
Control Variables .....	27
Gender .....	28
Age .....	29
Tenure .....	31
Level of Analysis .....	33
Summary of the Conceptual Model .....	35
Research Hypotheses .....	36
Hypothesis 1 <sub>IND</sub> .....	37
Hypothesis 2 <sub>IND</sub> .....	38
Hypothesis 3 <sub>IND</sub> .....	38
Hypothesis 4 <sub>SUP/PLT</sub> .....	39
Hypothesis 5 <sub>SUP/PLT</sub> .....	40
Hypothesis 6 <sub>MULT</sub> .....	42
Summary .....	44
<b>Chapter 3: Methodology and Expected Results .....</b>	<b>45</b>
Setting .....	45
Measures .....	46
Absence Behavior .....	46
Absence Climate .....	47
Organizational Pressure to Attend .....	48
Explanations for Absence .....	49
Consequences of Absence .....	50
Control Variables (Gender, Age and Tenure) .....	51

Analytical Techniques .....	51
Initial Analyses .....	51
Hypotheses 1-3 .....	52
Hypotheses 4-6 .....	54
Summary .....	61
<b>Chapter 4: Results .....</b>	<b>62</b>
Overview .....	62
Initial Psychometric Analyses .....	63
Hypothesis 1 <sub>IND</sub> , Hypothesis 2 <sub>IND</sub> , and Hypothesis 3 <sub>IND</sub> .....	66
Organizational Pressure to Attend and Absence Behavior (Hypothesis 1 <sub>IND</sub> ) .....	69
Explanations for Absence and Absence Behavior (Hypothesis 2 <sub>IND</sub> ) .....	72
Consequences of Absence and Absence Behavior (Hypothesis 3 <sub>IND</sub> ) .....	74
Hypothesis 4 <sub>SUP/PLT</sub> and Hypothesis 5 <sub>SUP/PLT</sub> .....	80
Differences on the Dimensions of Absence Climate (Hypothesis 4 <sub>SUP</sub> ) .....	81
The Absence Climate and Absence Behavior Relationship (Hypothesis 5 <sub>SUP</sub> ) .....	85
Organizational Pressure to Attend and Absence Behavior (Hypothesis 5:1 <sub>SUP</sub> ) .....	88
Explanations for Absence and Absence Behavior (Hypothesis 5:2 <sub>SUP</sub> ) .....	91
Consequences of Absence and Absence Behavior (Hypothesis 5:3 <sub>SUP</sub> ) .....	95
Differences on the Dimensions of Absence Climate (Hypothesis 4 <sub>PLT</sub> ) .....	100
The Absence Climate and Absence Behavior Relationship (Hypothesis 5 <sub>PLT</sub> ) .....	102
Hypothesis 6 <sub>MULT</sub> - Multiple Levels of Analysis .....	102
12-Month Absence Rate and the Absence Climate Variables .....	109
12-Month Absence Frequency and the Absence Climate Variables .....	113
Summary of the Results for the Control Variables .....	118
Individual Level of Analysis .....	119



Supervisory Group Level of Analysis .....	122
Summary of Results for Absence Behavior .....	124
Summary .....	127
<b>Chapter 5. Discussion and Conclusions .....</b>	<b>128</b>
Overview .....	128
Organizational Pressure to Attend .....	129
Conclusions Related to Organizational Pressure to Attend .....	138
Explanations for Absence .....	139
Conclusions Related to Explanations for Absence .....	146
Consequences of Absence .....	147
Conclusions Related to Consequences of Absence .....	154
Summary for the Three Dimensions of Absence Climate .....	154
Methodological Limitations of the Study .....	157
Implications of the Research .....	159
<b>REFERENCES .....</b>	<b>163</b>
<b>Appendix 1 .....</b>	<b>171</b>
Factor Analysis .....	171
<b>Appendix 2 .....</b>	<b>173</b>
Correlation Matrix at the Individual Level of Analysis (N = 1139) .....	173
<b>Appendix 4 .....</b>	<b>175</b>
Descriptive Statistics at the Individual Level of Analysis .....	175

<b>Appendix 3</b> .....	<b>176</b>
Descriptive Statistics at the Supervisory Group Level of Analysis .....	176
<b>Appendix 5</b> .....	<b>200</b>
Descriptive Statistics at the Plant Level of Analysis .....	200
<b>Appendix 6</b> .....	<b>203</b>
Relationship between 12-Month Absence Rate and the Absence Climate Variables with Controls for Gender, Age and Tenure .....	203
<b>Appendix 7</b> .....	<b>204</b>
Summary of WABA Equation utilizing 12-Month Absence Rate as the Dependent Variable .....	204
<b>Appendix 8</b> .....	<b>206</b>
Relationship between 12-Month Absence Frequency and the Absence Climate Var- iables with Controls for Gender, Age and Tenure .....	206
<b>Appendix 9</b> .....	<b>207</b>
Summary of WABA Equation utilizing 12-Month Absence Frequency as the De- pendent Variable .....	207

## List of Illustrations

Figure 1.	A Conceptual Model of Absence Climate	16
Figure 2.	Multiple Regression Model for Absence Climate at the Individual Level of Analysis	53
Figure 3.	Multiple Regression Model for Absence Climate at the Supervisory Group or Plant Level of Analysis	59
Figure 4.	Absence Climate Scales and Their Coefficient Alphas	64
Figure 5.	Variance Inflation Factors for the Absence Climate Variables	67
Figure 6.	Multiple Regression Model for Absence Climate at the Individual Level of Analysis	68
Figure 7.	Inferences for Two-Variable WABA Analysis	87
Figure 8.	Inferences for Two-Variable WABA Analysis	105
Figure 9.	Possible Inferences for Multiple Levels of Analysis	107

## List of Tables

Table 1a. Sum of Squares "F" Test for Organizational Pressure to Attend and 12-Month Absence Rate at the Individual Level of Analysis . . . . .	71
Table 1b. Sum of Squares "F" Test for Organizational Pressure to Attend and 12-Month Absence Frequency Individual Level of Analysis . . . . .	73
Table 2a. Sum of Squares "F" Test for Explanations for Absence and 12-Month Absence Rate at the Individual Level of Analysis . . . . .	75
Table 2b. Sum of Squares "F" Test for Explanations for Absence and 12-Month Absence Frequency at the Individual Level of Analysis . . . . .	76
Table 3a. Sum of Squares "F" Test for Consequences of Absence and 12-Month Absence Rate at the Individual Level of Analysis . . . . .	78
Table 3b. Sum of Squares "F" Test for Consequences of Absence and 12-Month Absence Frequency at the Individual Level of Analysis . . . . .	79
Table 4a. ANOVA for Absence Climate Dimensions: Supervisory Group . . . . .	83
Table 4b. WABA I for Absence Climate Dimensions: Supervisory Group . . . . .	84
Table 5a. Regression: Organizational Pressure to Attend and 12-Month Absence Rate at the Supervisory Group Level of Analysis . . . . .	90
Table 5b. Regression: Organizational Pressure to Attend and 12-Month Absence Frequency at the Supervisory Group Level of Analysis . . . . .	92
Table 6a. Regression: Explanations for Absence and 12-Month Absence Rate at the Supervisory Group Level of Analysis . . . . .	94
Table 6b. Regression: Explanations for Absence and 12-Month Absence Frequency at the Supervisory Group Level of Analysis . . . . .	96
Table 7a. Regression: Consequences of Absence and 12-Month Absence Rate at the Supervisory Group Level of Analysis . . . . .	98

Table 7b. Regression: Consequences of Absence and 12-Month Absence Frequency at the Supervisory Group Level of Analysis .....	99
Table 8a. ANOVA for Absence Climate Dimensions: Plant .....	101
Table 8b. WABA I for Absence Climate Dimensions: Plant .....	103
Table 9a. WABA II: 12-Month Absence Rate and the Absence Climate Variables	110
Table 9b. Summary of Inferences Related to 12-Month Absence Rate .....	112
Table 10. Multiple Levels of Analysis for 12-Month Absence Rate Utilizing WABA II .....	114
Table 11a. WABA II: 12-Month Absence Frequency and the Absence Climate Variables .....	115
Table 11b. Summary of Inferences Related to 12-Month Absence Frequency ...	116
Table 12. Multiple Levels of Analysis for 12-Month Absence Frequency Utilizing WABA II .....	118
Table 13. R-Square of Regression Models at the Individual and Supervisory Group Levels of Analysis .....	126
Table 14. Summary of Results for the Absence Climate Dimension of Organizational Pressure to Attend .....	130
Table 15. Summary of Results for the Absence Climate Dimension of Explanations for Absence .....	140
Table 16. Summary of Results for the Absence Climate Dimension of Consequences of Absence .....	148
Table 17. Full Summary of Hypotheses Results for the three Absence Climate Dimensions .....	156

# Chapter 1: Introduction

While the phenomenon of absence from work has been widely studied during the past thirty years, Steers and Rhodes (1984) noted that the large number of variables (over 209) which have contributed to the prediction of absence at one time or another have left uncertainty regarding what is known about absence behavior. This is because the relationship between absence behavior and any of the many variables studied has generally been weak and often inconsistent. Johns and Nicholson (1982: 162) reached a similar conclusion and provided the following additional insight: "One reason why the individual level approach often accounts for relatively little variation in absence may be the fact that there are many work settings in which there *is* little variation in absence among employees." This lack of variance could be explained by the presence of an "absence climate"<sup>1</sup> at the group, plant or organizational level. Absence climate is de-

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<sup>1</sup> While Johns & Nicholson (1982) make no distinction between absence climate and absence culture, such a distinction is made in this study for two reasons. First, this distinction is in accord with the recent review of organizational behavior by Schneider (1985: 598), who notes that researchers of organizational culture focus on the "norms and value systems that give rise to policies and activities," whereas researchers of organizational climate focus on the "dimensions or facets" of those organizational policies and activities. This research focuses on employee perceptions of a company's absence policies and activities, rather than on the norms or value systems which could have created such policies and activities. Second, the distinction is in accord with the different ways that climate and culture have been measured. Since culture is frequently seen as a "deeper construct" than climate (Schneider, 1985: 596), cultural researchers have favored more qualitative approaches, such as case studies (Gregory, 1983; Schein, 1985, 1987). Climate

*defined as the psychologically meaningful shared perceptions that workers hold concerning absence procedures and practices occurring within an organization.*

## ***Purpose***

This study has two purposes. The first purpose is to investigate whether absence climate is related to absence behavior. The proposed model of the relationship between absence climate and absence behavior controls for the personal variables of gender, age and tenure, all three of which have been found to have a significant bivariate relationship with absence (Muchinsky, 1977; Steers & Rhodes, 1978; 1984) and may confound with absence climate. By controlling for these variables, it will be possible to discern the unique contribution of absence climate toward the prediction of absence.

The second purpose of this study is to investigate whether individuals, supervisory groups and/or plants are appropriate levels of analysis for the examination of absence climate. Climate is confirmed at the individual level of analysis when a significant relationship is found between employees' perceptions of absence climate and their individual absence behavior. Currently, the existence of absence climate at a higher level of analysis is inferred from the presence of different absence rates in units such as supervisory groups, departments, plants and/or industries (Chadwick-Jones, Nicholson & Brown, 1982; Nicholson & Johns, 1985). This study will use two criteria suggested by Joyce and Slocum (1984: 722) for validating aggregate climate. The first criterion is

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researchers have generally used survey methods (Schneider, 1975). This study follows the climate research method by measuring employee perceptions of absence procedures and practices with a questionnaire.

“discrimination,” i.e. the demonstration of differences between averaged perceptions of climate across units. The second criterion is the finding of a relationship between climate and the related behavior, which in this case is absence behavior. Satisfaction of both criteria would confirm that the appropriate level of aggregation was chosen. The analytical technique used to test for these two criteria will be Within and Between Analysis, WABA (Dansereau, Alutto & Yammarino, 1984). The first criterion, discrimination, will be tested with WABA I (where the focus is on a single variable). The second criterion, predictability, will be tested with WABA II (where the focus is on the relationship between two variables). Confirmation of the appropriate level of analysis also provides empirical support for the validity of the absence climate construct.

These two purposes, one involving relationships among variables and the other involving selection of organizational entities,<sup>2</sup> together form what has been called the “varient paradigm” (Dansereau et al., 1984: ix). The varient framework is used in this research as the basis for both conceptualizing and examining absence climate.

## *Significance of the Study*

This study has both theoretical and practical significance. The theoretical significance of this study is that it extends the work of those researchers concerned with the effect of the social context on behavior. It does this in two ways.

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<sup>2</sup> Dansereau, Alutto & Yammarino (1984: 9) “use the term *entity* to refer to specific objects of interest to a researcher (persons such as Sam, Harry, or Jane; collectivities such as General Motors, Chrysler, or Ford.)”



First, it identifies absence procedures and practices which discriminate between organizational units (supervisory groups and plants) with low absence behavior and those with high absence behavior. Identification of these procedures and practices is valuable because most absence research to date has focused on distinguishing between individuals with low versus high absence behavior. Consequently few tools exist with which to examine differences between organizational units.

Second, this study analyzes the construct of absence climate from multiple levels of analysis. Few studies consider relationships between variables at more than one level of analysis. Thus, they may ignore the effects of the system within which an organizational unit is embedded. The study of climate within organizations has lacked a methodology by which to measure the degree of shared perceptions among employees within a given organizational unit and between organizational units (cf. Dansereau et al., 1984). This study uses a methodology that allows for the investigation of variance both within and between organizational units.

The practical significance of this study is that it provides a new perspective from which to approach the control of absence. Organizations are made up of employees whose presence is needed to accomplish the goals and purposes of the organization. While some absence is presumably unavoidable and may in fact be beneficial (e.g., recovery from illness), excess absence is a problem. If employees' perceptions of the absence procedures and practices in the organization are influenced by membership in an organizational unit, then interventions to control excess absence may need to take into consideration the unit directly affecting employees' perceptions. Thus, incentives for attendance might be most effective when applied at multiple levels, i.e. organizational

units such as supervisory groups, rather than just individuals, as is presently the custom in most organizations.

## ***Summary***

*Chapter 1* has provided an introduction to the background for the study, discussed the purposes of the study, and indicated why this study is significant for both theoreticians and practitioners.

*Chapter 2* begins by discussing the literature related to the theoretical models which have been developed to assist in explaining absence behavior. From the literature on the social (or cultural) explanation of absence, a conceptual model is developed which relates absence climate and absence behavior. Literature relevant to each of the components of the conceptual model is reviewed. Finally, the research hypotheses derived from the conceptual model and the literature are introduced and discussed.

*Chapter 3* presents the methodology used in this study. It includes a discussion of the survey site, the measures used, and the statistical analyses followed.

*Chapter 4* presents the results of the initial psychometric analyses performed on the absence climate measures. Next, it reports the results from the analysis of the six hypotheses. Then it reports and examines the results related to the control variables and the measures of absence behavior.

*Chapter 5* examines the results of the six hypotheses, presents conclusions and limitations. Finally, it discusses the implications of this study for future research.

## **Chapter 2: Literature Review**

### ***Overview***

This chapter reviews the relevant absence literature and presents the study's hypotheses. The chapter begins with an examination of the various theoretical models which have been used to help understand absence. It is within the last theoretical model reviewed, i.e., the social model, that the concept of absence climate can more clearly be understood. The next section outlines a model of the relationships to be investigated in this study. The components of the conceptual model are absence behavior, absence climate, the control variables (gender, age and tenure), and a consideration of the appropriate level of analysis for absence climate. Finally, the hypotheses derived from the conceptual model and the literature are presented.

## *Theoretical Models of Absence*

Various theoretical models of absence have been developed over the past thirty years. Nicholson (1977: 232) has categorized such explanatory models into three types: pain-avoidance (a.k.a. withdrawal), decision, and adjustment models. Chadwick-Jones et al. (1982) have proposed a fourth type, the social model. Literature pertinent to each of these models is reviewed below.

### **Withdrawal Model**

The withdrawal model of absence behavior developed out of job satisfaction research (Nicholson, 1977). It was based upon the idea that dissatisfied workers would withdraw themselves from the work place. Absence behavior provided a temporary means of withdrawing without risk to one's continued employment (assuming that management tolerated a certain level of absence). Using meta-analytic procedures, the relationship between job satisfaction (or its purported inverse, job dissatisfaction) and absence behavior has been more critically analyzed (Hackett & Guion, 1985; Scott & Taylor, 1985). The results have indicated that there is a significant inverse relationship between job satisfaction and absence behavior. When Hackett and Guion (1985) corrected for the unreliability of absence measures (but not satisfaction measures), they found that the estimated correlation of the empirical studies examined was  $-.09$  between all measures of absence and all measures of satisfaction. Scott and Taylor (1985) found a Pearson product moment correlation of  $-.15$ . They estimated that the mean product moment correlation between absence behavior and job satisfaction would be  $-.29$ , if perfectly re-

liable instruments were used. The authors conclude from their meta-analysis that there is more support for a significant relationship between job satisfaction and absence than previous research would indicate.

Johns (1986) speculates that the relationship between job satisfaction and absence is not larger, because employees (whether satisfied or not) may be present at work to avoid loss of pay or other organizational sanctions. The withdrawal model implies that absence behavior is a result of a single function, i.e. avoiding dissatisfaction. The next model considered, which is the decision model, allows for absence behavior to serve a variety of possible functions, such as recovering from illness, obtaining more leisure time and/or conducting one's personal business. The decision model is discussed in the following section.

## **Decision Model**

The decision model evolved from two different perspectives, that of expectancy theory (Vroom, 1964) and that of economic analysis (Allen, 1981b; Chelius, 1981). Each of those perspectives assumed that workers followed a rational process in deciding whether or not to be absent from work. Pinder (1984) reviewed research on expectancy theory and concluded that, given the flaws in the research designed to test the theory, it was impossible to conclude whether or not the theory itself had any merit. The economic perspective has recently yielded especially positive results. When Youngblood (1984) asked workers to indicate how much leisure time and how much money they were willing to pay for various benefits, he found higher absence rates for those workers who valued leisure more highly than additional benefits. Several other studies showed that as bene-

fits increased, so did absences (Allen, 1981a; 1981b; Cheluis, 1981). Allen (1981a: 208) suggested that this was because increases in “nonwage income lead workers to demand more leisure.” Finally, a relationship between unemployment and absence behavior has also been demonstrated (Leigh, 1985; Markham, 1985). When unemployment is high, absence behavior decreases. This may be a function of workers deciding that if unemployment is high, they can be readily replaced by other workers. Their improved attendance would therefore be designed to avoid such a possibility.

The economic model points out that nonwork (leisure) time has value and that loss of pay may be acceptable in exchange for personal time. It also makes one aware that factors in the environment (such as unemployment) impact on the individual decision-making process. While the economic model shows the trade-offs employees make in evaluating the pros and cons of being absent, the adjustment model of absence suggests that individuals accommodate themselves to the demands of the work environment by absence.

## **Adjustment Model**

The adjustment model was traced by Nicholson (1977) to the work of Hill and Trist in the early 1950's. Hill and Trist (1962) suggested that once new employees decide not to quit their jobs, they then used absence to reduce job stress. Moreover, Hill and Trist's (1962) longitudinal data suggested to them that as workers were socialized into the organization, the type of absence they reported changed from “unsanctioned” to “sanctioned.” Workers with increased tenure “learned the rules of the game” and adjusted their reasons for absence to correspond with company expectations.

Gibson (1966) also proposed an adjustment model to explain absence behavior. He believed that there was a formal contractual relationship between employees and the organization. Employees accommodated themselves to the expectations of the organization in exchange for desired satisfactions. Thus, employees identifying with the company would be absent less frequently, as would those holding positions of authority. In both cases, employees would feel a contractual obligation to be present. Gibson was criticized by Nicholson (1977: 235) for neglecting "the issue of motivation and the purposive and goal-directed functions of absence" in his absence model.

More recently, Rosse and Miller (1984) proposed a model of adaptation which posited that dissatisfied workers would use various strategies (including absence, lateness, and retaliatory responses) to improve their situation. They argued that a wide range of adaptive behavior should be considered. A preliminary test of the model (Rosse & Hulin, 1985) indicated that adaptive behaviors such as absence and turnover were responses to various dissatisfying work conditions and not to just a single source of irritation.

The adjustment model reflects how individuals accommodate themselves to the demands of their job. Hill and Trist (1962: 36) were the first to use the term "absence culture"; however, they meant by it the firm's standards of what was sanctioned and unsanctioned absence. Thus, the culture was not dependent upon employees' perceptions, but rather was an environment created by the firm to which employees had to adapt. While Hill and Trist tested for the effect of the department in which employees worked, the level of analysis was primarily that of the individual. It was not until the 1970's that a social (cultural) model of absence behavior developed. While similar to the adaptive model, the social model considers more fully the impact of group membership upon an individ-



ual's perceptions and behavior. It is based on the social model, which is described below, that the current study was developed.

## **Social Model**

The social (or cultural) model of absence suggests that workers are influenced by the context in which they work (Chadwick-Jones et al., 1982). Individuals are influenced by what others say or do and adjust their behavior to conform to group demands. Social influence is a function of such factors as occupation, technology, and office design (Johns, 1986), and these factors result in different "absence cultures" (Chadwick-Jones et al., 1982; Johns, 1984; Johns & Nicholson, 1982). The existence of such cultures has been inferred by finding between-unit differences in absence levels. Three such studies are described below and are particularly relevant to the current research.

In the first study, Chadwick-Jones et al. (1982) examined absence patterns in six industries. The sample consisted of 6,411 employees in the following industries: clothing manufacture (N=991), foundries (N=1,215), automated process (N=1,372), public transport (N=1,226), banking (N=666), and hospitals (N=941). A total of 21 organizations was represented. The existence of differing norms between industries was inferred from differing absence profiles among the six industries. Thus, the authors (1982: 18) reported a norm in the blue-collar industries for "relatively infrequent short absences but a greater number of longer ones," and in the banks and hospitals for "widely distributed and frequent short absences." Histograms and trend analysis were utilized to indicate the between-industry differences. Tests of statistical significance were not re-

ported; therefore, it is impossible to know the degree to which the profiles differed from one another.

It should be noted that the blue-collar industries were located in England and the white-collar industries (banks and hospitals) were located in Canada. Consequently, a confounding of nationality and industry could have occurred. Moreover, the time period under investigation was 1970-71 for the industries sampled in England and 1977-80 for the industries sampled in Canada. Thus, temporal events, including fluctuations in the economy, could have influenced the differences found between industries. Despite these limitations, differences in the patterns of absence in the blue-collar industries could be graphically seen (although not statistically shown). This would offer some further (albeit weak) support for the importance of social context.

The second study was also conducted by Chadwick-Jones et al. (1982) and extended the first study. The subsample used in England was from the original larger sample of blue-collar workers. However, the sample used in Canada was not a subsample from the original group, due to problems the Canadian researchers encountered in obtaining permission to conduct interviews. A total of 488 blue-collar workers were interviewed in England. They included 165 “women machine operators” in clothing manufacture, 62 “molders and fettlers (metal dressers)” in foundries, 120 “high grade operators” in automated plants, and 141 “drivers, conductors, and one-man operators” in public transport (1982: 38-39). The Canadian sample consisted of 151 office workers in “a variety of organizations” and 40 nurses and 40 bank employees (1982: 39). The purpose of the interviews was to explore the reason why workers are absent. While the authors reported being no closer to making a link between reasons for absence and absence behavior, they did find that the results from the interviews were “consistent with and even

explicitly supportive of the social exchange explanation of absence” (1982: 30). Chadwick-Jones et al. found significant group patterns in the reasons for absence. For example, they found that “personal or episodic feelings - feeling bored, feeling tired, wanting a break” occurred least often in automated plants and most often in clothing manufacture where jobs were more repetitive (1982: 39). Workers in automated plants also judged taking an occasional day off when a break was needed as less justifiable than did workers in the clothing factories or foundries. Among office workers, women (44%) rated “serious domestic problems” more frequently than men (29%) as a reason for not attending work (1982: 44). This difference was not found between women and men blue-collar workers, although women in that sample did report more pressure by their families to stay at home. Thus, the results of this study indicated that intergroup differences could be occurring.

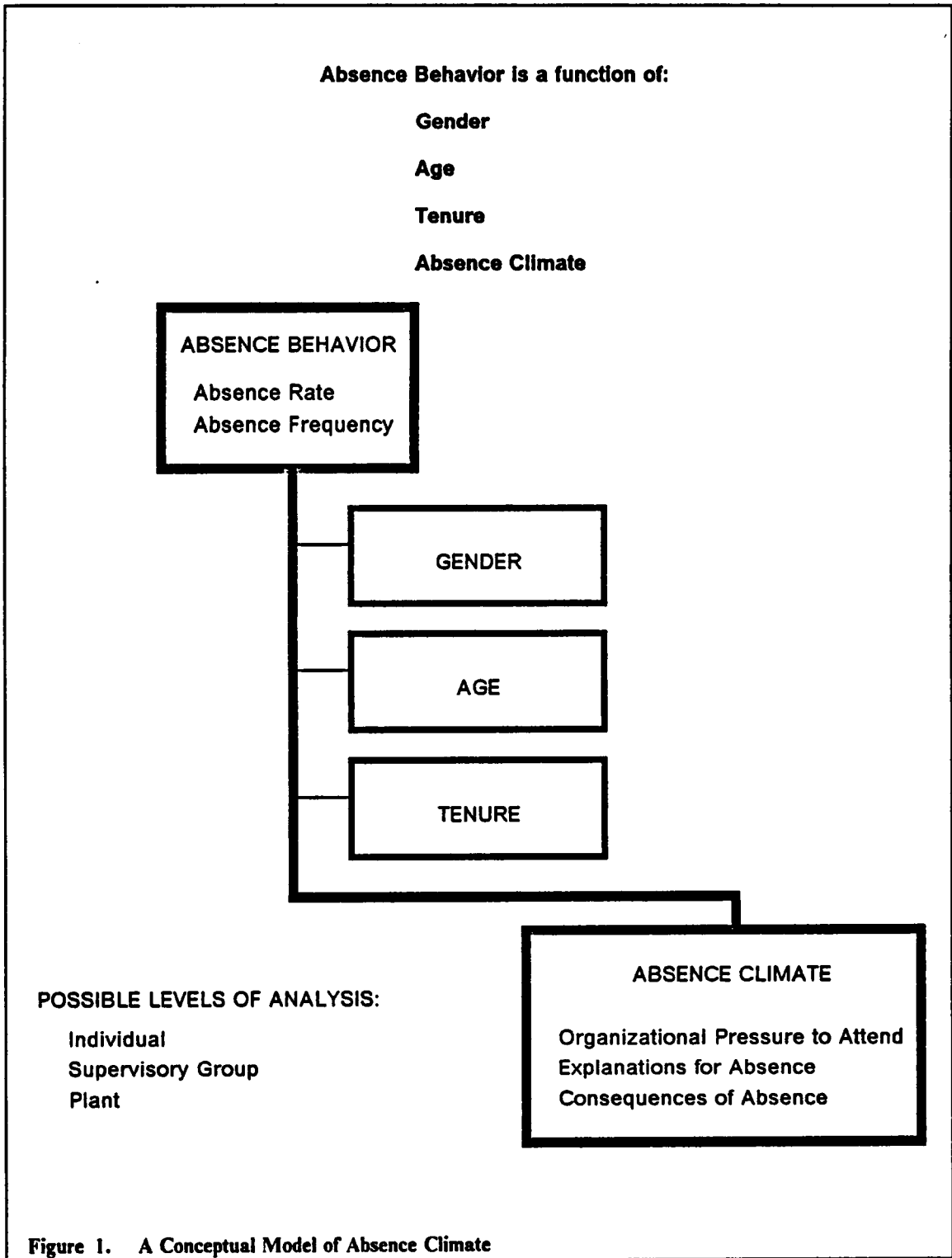
In the third study, Nicholson and Johns (1985) made a post hoc examination of results from a study by Hammer, Landau and Stern (1981). Nicholson and Johns interpreted from a cultural perspective the changes found in absence behavior before and after employees assumed ownership of their plant. In their explanation they hypothesized an absence culture consisting of two dimensions. The first dimension, “psychological contract,” was operationalized as a continuum of high to low trust levels between employees and management. The second dimension, “cultural salience,” was operationalized as a continuum showing how much the culture influenced the individual (1985: 402-403). A rise in absence behavior after the announcement of the plant closure was attributed to a culture with increased salience and low trust of management, i.e. a conflict-ridden culture. A return to the previous volume of absence but with more “involuntary” absence (acceptable excuse according to company policy and/or union contract) and less “voluntary” absence (personal reason or no reason) occurred after employee ownership.

This was attributed to a culture with high salience and high trust, i.e. a culture in which morals influenced behavior.

The following section presents a conceptual model of absence developed from the social model of absence. It examines whether employees' perceptions of absence procedures and practices in an organization are affected by their membership in supervisory work groups and plants within that organization.

## ***Conceptual Model***

The conceptual model proposed will examine whether there is support for using the social theory of absence to interpret absence behavior. It will do this at the individual level of analysis by examining whether there is a significant relationship between absence behavior and absence climate. A determination of whether absence climate exists at the level of the supervisory group and/or plant will be contingent upon meeting the criteria of "discrimination" (significant and practical differences between-units) and "predictability" (a significant between-unit relationship for absence behavior and absence climate). This model, shown in Figure 1, consists of four parts: (1) *absence behavior*, which is the dependent variable being investigated; (2) *absence climate*, which is hypothesized to explain some variance in absence behavior over and above that explained by demographic variables; (3) *demographic variables* used as controls, including gender, age and tenure of employees; and (4) *levels of analysis*, including individual, supervisory group, and plant. The appropriate level of analysis will be confirmed by examining the configuration of the data.



## **Absence Behavior**

Absence behavior is a term used to mean “the allocation of time across nonwork activities when an individual is expected to be working” (Fichman, 1984: 20). Absence behavior is most commonly measured by its frequency and/or its duration. Frequency is measured by counting the number of incidents (occurrences) during a specified time period. Each consecutive run of absence is counted as one occurrence, regardless of length. Duration is measured by counting the number of days absent (time lost) divided by the number of scheduled workdays. (See Atkin & Goodman, 1984 for a further discussion of these two different measures of absence.)

There has been a considerable debate in the absence literature about what these two measures represent (Steers & Rhodes, 1984). Chadwick-Jones, Brown, Nicholson and Sheppard (1971: 470), replicating an earlier study by Huse and Taylor (1962), found that the frequency measure of absence was the best general indicator of “voluntary absence levels.” Chadwick-Jones et al. (1982: 54) considered absences which could be “chosen by the individual in a trade-off with the organization” to be voluntary. In other words, absences were voluntary if an individual made an instrumental choice whether or not to be absent. The implication is that voluntary absence is short-term, whereas involuntary absence is long-term and more apt to be a result of a serious physical illness. Chadwick-Jones et al. (1971: 467) measured absences of longer duration by a time-lost index, which was found to be insensitive to voluntary absence “to the extent that its variance may be attributable to seasonable sickness trends.”

While not addressing the question of “voluntary” versus “involuntary” directly, Smulders (1980) reported that researchers at the Netherlands Institute for Preventive

Health Care found frequency of absence and duration of absence to be only partly determined by the same variables. Thus, Smulders argued for a theoretical distinction between the two measures. Further empirical support for this distinction was found by Hammer and Landau (1981: 574), who showed that “frequency measures are more stable and less susceptible to skewness and leptokurtosis than are time-lost measures.” This was because the frequency measure contained fewer extreme outliers in the sampling distribution than did the duration measure.

These findings indicate that it is useful to differentiate between measures of absence frequency and absence duration. However, the validity of distinguishing between voluntary and involuntary absence utilizing absence frequency for the former and absence duration for the latter has been questioned (Hammer & Landau, 1981; Nicholson, 1977). Hammer and Landau (1981) cautioned that frequency measures should not be unquestionably accepted as voluntary absence, nor should time-lost measures be unquestionably accepted as involuntary absence, since each was subject to errors of misclassification by company officials, by researchers, or by employees themselves.

A more fundamental position regarding the distinction between voluntary and involuntary absence was taken by Nicholson (1977), who argued that the idea of voluntary absence be abandoned. Nicholson’s rationale was that the concept of voluntary absence assumed some “will” to be absent and thus supposed an internal state on the part of the employee. Instead, Nicholson (1977: 242-243) proposed a continuum of absences, from unavoidable (at the ‘A’ end of the continuum) to avoidable (at the ‘B’ end of the continuum). In this way Nicholson hoped that attention would be focused on the constraints to attendance, rather than on the “unreliability” and the “arbitrariness” of ab-

sence classifications by some “legitimizing” agent (1977:240). Operationalizing such a measure would, however, be difficult.

Smulders (1980: 369) noted that terms like “legitimate” and “illegitimate” or “certified” and “uncertified” were arbitrary and culture-bound and therefore should not be unquestioningly accepted. On the other hand, he indicated that such terms provided qualitative measures of absence, which would not be available if measures of attendance were used instead of measures of absence.

In summary, while there is empirical support for distinguishing between absence frequency and absence duration, there is no theoretical support for stating that the former is purely voluntary absence and the latter is involuntary absence. The theoretical issues are currently irresolvable, since there is no way to operationalize and therefore to measure when an individual is actually choosing to be absent from work. While it is interesting to speculate on whether or not a person may avoid being absent, this is a philosophical issue rather than one subject to empirical validation. Hence, absence frequency and absence duration will both be included in this study for conceptual completeness, but *not* to infer either voluntary or involuntary absence.

## **Absence Climate**

In order to understand absence climate, it is helpful to examine the roots of the climate approach to the study of organizations and to arrive at a general definition of climate. The study of climate may be traced to the work of Lewin, Lippitt & White (1939), who were able to infer the existence of authoritarian, democratic and laissez-faire social climates and to observe their effects on the behavior of their subjects. The concept of cli-



mate was introduced into the fields of industrial psychology and organizational behavior by researchers in the late 1950's and early 1960's, including such researchers as Argyris, Gellerman and McGregor, who were concerned about the effectiveness of organizations and managers. These researchers believed that the practices and procedures followed in organizations could influence employees' perceptions regarding the purposes of the organization (Schneider, 1983). Organizations (or the people therein) could thus create a certain climate or climates by virtue of what was emphasized in the organization. After reviewing the climate approach of how context affected work behavior, Schneider (1975: 474) proposed the following definition of climate:

Climate perceptions are psychologically meaningful molar descriptions that people can agree characterize a system's practices and procedures. By its practices and procedures a system may create many climates. People perceive climates because the molar perceptions function as frames of reference for the attainment of some congruity between behavior and the system's practices and procedures.

It is from the above statement that a definition of absence climate is derived.

A major conceptual advance in the study of organizational climate is the realization that "work settings have numerous climates, as many climates as there are psychologically connected clusters of events, practices and procedures" (Schneider, 1983: 109). Thus, there have been studies looking at climates for service (Schneider, Parkington & Buxton, 1980), for safety (Zohar, 1980), and for innovation (Abbey & Dickson, 1983). In this study the criterion of interest is absence behavior. Therefore, *absence climate is defined as the psychologically meaningful shared perceptions that workers hold concerning absence procedures and practices occurring within an organization.*

What, then, are the absence practices and procedures upon which employees base their perceptions? In order to answer this question a review of the absence literature was undertaken. The following three sections discuss studies which investigated the way in which employees perceived the absence practices and procedures in their place of work.

Studies are also discussed which indicated absence practices and procedures differentiating organizations with high absence behavior from those with low absence behavior. These absence practices and procedures were then categorized into three dimensions of absence climate:

- (1) organizational pressure to attend,
- (2) explanations for absence, and
- (3) consequences of absence.

A description of each dimension and the literature related to it is provided below.

### ***Organizational Pressure to Attend***

*Organizational Pressure to Attend* is conceptualized as an external pressure arising from within the organization, which is directed toward good attendance. It is conceptualized as an antecedent of absence behavior; it includes the pressure placed on employees by management's attendance goals, as well as the pressure for attendance applied by co-workers. Another component is the general support by management of good attendance.

Chadwick-Jones et al. (1982: 48), using chi square analysis, found significant differences between blue-collar workers in two different industries on the question of "Reported Compliance with Pressure to Be at Work from Supervisors" ( $p < .001$ ). Twenty-two percent of those working at automated plants reported complying with supervisory pressure to attend, while only seven percent of those employed by public transport reported such compliance. Unfortunately, no breakdown of the response category "Other Replies" was provided. Nor were absence rates available for this subsample in order to determine if the reported compliance was reflected in the absence rates of the interviewed

workers. While supervisory pressure to attend did not appear to influence a majority of the employees, it could be that such pressure was only applied to those employees with an absence problem. Supervisory pressure could therefore have had an indirect, albeit important effect on the absence behavior of the other employees by encouraging them to maintain good attendance (avoidance of supervisory pressure). The data from this study were insufficient to make clear inferences.

Markham, Spencer and Scott (1984) measured employee perceptions of encouragement to attend by managers and supervisors (Organizational Control Scale) and found no significant correlation with absence. However, this could have been due to testing for significance at the individual level of analysis, when testing at the supervisory group or plant level of analysis might have been more appropriate. Finding meaningful results would depend upon selection of the proper level of analysis (Dansereau & Markham, 1987).

The work of Ilgen and Hollenback (1977) provided some empirical support for the importance of co-worker pressure in influencing the absence behavior of employees. They investigated co-worker pressure with a four-item scale (two items of which measured perceived loyalty toward other co-workers as a result of getting a job accomplished). While co-worker pressure did not correlate with either sick leave or total absence, it did correlate at .20 ( $p < .01$ ) with unexcused absence. This correlation was in the opposite direction to the expected relationship. Ilgen and Hollenback (1977: 153) reasoned that the strongly perceived peer pressure to only use "sick leave" for sickness resulted in employees substituting "unexcused absence" when they needed to miss work for reasons other than sickness. Thus, strong peer pressure affected the *type* of absence reported.

Despite the theoretical importance of goal setting to improved performance, none of the studies discussed above was designed with goal setting in mind. Goal setting appears relevant to absence behavior because goal setting directs attention, mobilizes efforts, encourages persistence and fosters strategy creation (Locke, Shaw, Saari & Latham, 1981), all of which are desirable in meeting attendance goals. Latham and Kinne (1974) found that production was increased and absence decreased in logging crews which set production goals. In that case, absence was improved as a by-product of setting productivity goals. Kim and Hamner (1976) did a study in which attendance goals were set and the results monitored. (Note: This study was actually designed to study whether setting goals and providing different forms of feedback would be preferable to setting only attendance goals with no feedback.) The results indicated no significant differences between the four different treatments. However, this lack of significance was attributed to the extremely low initial absence rate (2.9%), which was actually below the regionally established attendance goal of 4.7 %. Consequently, the effect of setting attendance goals was not really measured. These studies point, however, to the potential of goal setting for the control of absence. This study will investigate further whether goal setting theory is relevant to understanding the relationship between absence behavior and organizational pressure to attend. It will do this by examining whether there is a relationship between employees' perceptions of Organizational Pressure to Attend and their absence behavior.

### ***Explanations For Absence***

The construct, *Explanations for Absence*, is conceptualized as an internal pressure for good attendance placed by employees on themselves. It includes employees' perceptions

about what are acceptable reasons for being absent and what is an acceptable level of absence. Thus, Explanations for Absence reflects employees' personal absence practices.

Ilgen and Hollenback (1977: 151) measured a similar variable they called "value system pressure." The variable was comprised of items to determine employee beliefs, e.g., "...once you accept a job, you are obligated to go to work" or "As long as I have sick leave days available, I see nothing wrong with using them as I wish." Ilgen and Hollenback (1977) found that "value system pressure" correlated at  $-.15$  ( $p < .05$ ) with sick leave.

When office workers ( $N = 151$ ) were asked which absences were justifiable and which were not justifiable, they were able to make distinctions between the two categories (Chadwick-Jones et al., 1982). The most frequently mentioned causes of "justified" absence were "serious domestic problems, accidents, minor ailments, and business reasons" (45 responses). The reasons most frequently mentioned as "unjustified" were "feeling bored or depressed (134 responses), waking up late (104 responses), disagreement with co-workers (70 responses), and disagreement with boss (66 responses)" (1982: 45). Blue-collar workers were also found to differ by industry in their response to whether or not an occasional day off to relieve the work routine was justifiable. Employees holding more repetitive jobs (e.g. those working in clothing manufacturing or foundries) found such occasional absences to be more justifiable than workers in automated plants or public transport. It was also in the automated plants that short, occasional absences were the fewest. Thus, there would appear to be initial evidence for the existence of some relationship between workers' beliefs and their absence behavior. Chadwick-Jones et al. (1982: 124) have also speculated that there might be an "accept-

able level of absence” which would be open to negotiation between management and workers.

Goal setting theory is also relevant to understanding Explanations for Absence. Employees may exert pressure on themselves for good attendance by the levels of absence they consider acceptable and by the reasons they may or may not use to rationalize absence behavior. Those employees, who have higher goals and allow themselves fewer acceptable explanations for being absent would be expected to have higher absence behavior for two reasons. First, rationalizations to be absent from work would diffuse energy directed toward attendance goals and second, a stated higher level of acceptable absence would make attendance goals less challenging. Thus, goal setting theory would suggest that a lower level of attendance would occur.

### *Consequences of Absence*

The third construct distinguishing organizational units having low versus high absence rates was *Consequences of Absence*. It is conceptualized as the results or consequences of absence behavior. While the use of consequences may involve a formal program of absence control, this need not be the case. Furthermore, consequences may be either positive or negative; both types will be discussed below.

Positive consequences or rewards for attendance have included such things as: reimbursement for unused sick leave (Schlotzhauer & Rosse, 1985); lottery participation (Scott, Markham, & Robers, 1985; Stephens & Burroughs, 1978; Wallin & Johnson, 1976); bonuses (Grove, 1968; Scott et al., 1985; Panyan & McGregor, 1976); and even being eligible (as a result of being present) to play poker and thus potentially win

(Pedalino & Gamboa, 1974). In a review of ten positive incentive programs, Schmitz and Heneman (1980) reported a subsequent reduction in absenteeism after implementation of the program in each of the ten studies. Scott and Markham (1982) found, in their survey of personnel managers, that organizations which gave employees public recognition for good attendance had lower rates of absence than organizations not using this method of absence control. An experimental field study (Scott et al., 1985) also demonstrated empirically that personal recognition resulted in decreased levels of absence.

Negative consequences have had mixed results when applied to controlling absenteeism. (Steers & Rhodes, 1978; 1984). Some negative consequences, which have reduced absenteeism have included detailed attendance records, requiring medical verifications, and strict disciplinary measures (Baum & Youngblood, 1975). These measures are frequently used in organizations, despite the lack of consistent empirical support for them.

In summary, a review of the literature on consequences for attendance indicated that absence behavior varies with consequences, particularly positive consequences. Of the three absence climate dimensions identified in this study, this one had the most empirical support. However, this may be simply because this dimension is the most frequently investigated after the introduction of an absence control program. Theoretically this dimension is justified as a part of absence climate, since it is through the reinforcement of behavior (Thorndike, 1911) that behavior is changed. Thus, employees' perceptions about absence procedures and practices of an organization will be changed by the favorable or unfavorable reactions others have to their attendance.

Each of the three dimensions of absence climate discussed above is based on absence practices and procedures occurring in an organization. Each dimension, in effect, places

pressure on employees to attend. Such pressure to attend is subject to control or influence by management. Thus, this study does not include extraorganizational factors such as the economy. It focuses instead on those practices and procedures within an organization which are potentially responsible for different levels of absence behavior in organizational units.

## **Control Variables**

As shown in Figure 1, the control variables of gender, age and tenure are part of the conceptual model. While a significant relationship between absence behavior and absence climate might be found, it could be that other variables were actually producing such an effect.

Steers and Rhodes' (1984) review of multivariate studies shows that a wide variety of personal characteristics (gender, age, tenure, number of dependents, educational level, previous military status, primary wage earner status) have been found to have a significant bivariate relationship with absence behavior. A wide variety of structural and environmental variables have also been found to be significant. However, not all of these will be considered in this study because it is believed that personal characteristics may confound the absence climate construct for the reasons discussed below and because there are practical limits on how much can be investigated in one study.

Some personal characteristics have been better predictors than others. The variables of gender, age and tenure have been most frequently examined, due to their recurrent and significant relationship with absence behavior. In addition, these three variables were chosen for controls instead of other personal characteristics because gender, age and



tenure appear most likely to influence perceptions which could be mistakenly attributed to an absence climate. For example, men and women have different roles and responsibilities both at work and at home, which could affect their perceptions of what type of absence is acceptable. Another example is that the aging process with its developmental crises could affect perceptions of pressures to attend. In this case such perceptions would not be a part of absence climate. A final example related to tenure is provided in the studies by Hill & Trist (1962), who found that the more senior organizational members did substitute sanctioned for unsanctioned absence. In summary, gender, age and tenure need to be controlled, so that the unique contribution of absence climate can be better evaluated. A brief review of the research regarding each of these variables is presented below.

### *Gender*

Steers and Rhodes (1978: 400) concluded from their review of seven studies examining gender and absence behavior, that "women as a group are absent more often than men." Steers and Rhodes went on to suggest that this difference might be due to the types of jobs held by women and/or to the family responsibilities expected of women. Data as of May, 1985, from the Bureau of Labor Statistics (Klein, 1986) confirmed that women still have higher absence rates than men, particularly during their childbearing years and when they have children under the age of six. Klein noted that marital responsibilities tended to push men toward a stronger commitment to their jobs, resulting in lower absence rates regardless of the number or age of their dependents. This could of course be the result of women taking primary responsibility for child care and of men taking primary responsibility for financial support, assuming there are two parents in a household.

Hedges (1973) reported that sex differences in absence rates narrowed when comparisons were made within a particular occupational group. When job level, education and experience were held constant, Leigh (1983) found that fundamental differences between males and females still existed. Likewise, Markham, Dansereau, & Alutto (1982) found that in a sample of blue-collar males and females, females had consistently higher absence behavior than males. However, Markham et al. also found that "with the exception of the winter season, the females' absence patterns over time seem to match the males' patterns for year, season, and day of the week" (1982: 380). This latter finding suggested to the researchers that women and men may have been socialized into the "culture of the plant," and thus both men and women responded in a similar way to the demands of the work setting.

Reasons for the absolute differences in absence behavior between males and females remain unclear. Hedges (1973) noted that the presence of children influenced women's absence rates. Moreover, larger family size was found to be related to increased women's absence by Ilgen and Hollenback (1977) and by Nicholson and Goodge (1976). Thus, while the exact reason for women's increased rate of absence is unknown, it is expected that gender differences, or more precisely sex-role differences, would contribute to women developing different perceptions of absence practices and procedures than men.

### *Age*

Of the five studies examining the relationship between age and absence behavior which Muchinsky (1977) reviewed, two studies found positive relationships between age and absence, two found no relationship and one found a curvilinear relationship. In this last

case both younger and older workers were absent more than middle-aged workers. While Muchinsky (1977) concluded that the inconsistency was due to the various ways in which absence behavior was measured, Steers and Rhodes (1978) found inconsistent relationships when the same absence measures were used.

Nicholson, Brown and Chadwick-Jones (1977) examined 28 cross-sectional studies from 1945 to 1977 and grouped them by age, sex and type of absence to better understand the effects of these variables. They concluded that older males had a tendency toward a lower rate of “avoidable” absence while younger males had a higher rate of “unavoidable” absence. Relationships between the age of women and either type of absence measure were reported to be conflicting (Nicholson et al., 1977). This could be related to the finding by Hedges (1973) that the widest sex difference in absence rate in 1972 was in the 25-44 age group and that seventy percent of the working women with children under eighteen were in that age group.

Two longitudinal studies (Cooper & Payne, 1965; de la Mare & Sergea, 1961) reported a positive relationship between age and the duration of absence (but no significant relationship between age and the frequency of absence). Thus, as workers aged they had a larger total number of work days lost than did younger workers. Nicholson et al. (1977) argued that longitudinal studies of the relationship between age and absence behavior were limited by changes occurring in the culture and in workers’ skill and status levels with the passage of time. Consequently they favored cross-sectional studies of the relationship between age and absence behavior.

Spencer and Steers (1980) found in their cross-sectional study that age and absence duration were negatively correlated, that is older workers were absent less than younger ones. In a later study Rhodes (1983) found a positive relationship between age and ab-

sence duration, which was stronger for males than for females. In trying to understand the inconsistency of results found in the various studies, Spencer and Steers (1980: 571) suggested that it could be a function of researchers using different types of absence measures, different types of samples and different levels of aggregation or “because underlying causal variables of absenteeism have not yet been identified.”

When Chadwick-Jones et al. (1982) examined the relationship between age of employees and three measures of absence (time-lost, frequency and short-term) for 1,222 blue-collar employees, 215 bank employees and 825 nurses, they found numerous significant inverse relationships between age and the frequency and the short-term absence measures, but only a few significant relationships between age and the time-lost measures of absence. Thus, their hypotheses that “short causal absences (frequency and short-term)” would show an inverse relationship with age and that “‘involuntary’ or sickness absence (time-lost)” would show no relationship to age were confirmed (1982: 112).

On the other hand, utilizing data from the Bureau of Labor Statistics, Klein (1986) found an increase of absence behavior (measured as absence duration, i.e. time-lost) with age for both men and women with the exception of the 16-19 year-old age group, which showed exceptionally high absence behavior for both sexes. As suggested by Chadwick-Jones et al. (1982), characteristics of the organization could help to explain the contradictory findings on the relationship between age and absence behavior.

### ***Tenure***

Tenure (or length of service) has generally been found to have an inverse relationship with absence behavior. (See reviews by Nicholson et al., 1977; Steers and Rhodes, 1978;

1984.) This means that absence behavior was found to decrease as length of service to the company increased. However, the study of tenure and absence behavior also has inconsistencies. Contrary to other studies, Spencer and Steers (1980) found a positive relationship between tenure and duration of absence. The four-year longitudinal study by Hill and Trist (1962) of 289 employees at one organization in England provides some understanding for such inconsistent results. Hill and Trist (1962) found that with increasing periods of service, employees substituted sanctioned for unsanctioned absence. Thus, over a four-year period unsanctioned absences decreased from a high of 473 during the second six-month period to a low of 274 at the end of the eighth six-month period. The total number of sanctioned absences continued to rise successively from 246 during the first period to 343 at the end of the eighth period. Thus, a researcher would obtain different results depending upon the measure of absence used. If unsanctioned absence were used, an inverse relationship between tenure and absence behavior would be found, such that the longer the service the lower the absence rate. This was the most frequently reported result. If only the absence rate for sanctioned absence were used, then a positive relationship would be found. The measure of absence used by Spencer and Steers was that of duration, which according to Chadwick-Jones et al. (1971) would be less sensitive to voluntary absence. If the assumption can be made that duration of absence measures "sanctioned" absence, then the positive relationship found by Spencer and Steers (1980) would not be surprising. The directionality of the relationship would also then be the same as has been found in most findings on age and absence duration.

It should be noted again that longitudinal studies examining tenure (as well as age) may be confounded by other events happening during the time period in question. The difficulty of separating age and tenure was also pointed out by Johns (1978), who found a high correlation between age and tenure and therefore chose not to include tenure as a

predictor. When Chadwick-Jones et al. (1982) held age constant, they found that the relationship between absence behavior and length of service did not remain statistically significant. Therefore, they concluded that age and length of service could be seen as a “single indivisible factor” (1982: 113). Despite this one finding, tenure is included as a control variable in addition to that of age in this study. This is because tenure has been found to be significantly related to absence behavior and since the relationship between tenure and age has not been widely tested.

## **Level of Analysis**

The fourth part of the conceptual model is the issue of level of analysis. Rousseau (1985) suggested that levels of analysis is one of the most important new issues in organizational behavior. Three reasons for attributing such importance to it are discussed below.

First, specifying whether a variable manifests itself at a particular level (or levels) forces the researcher to conceptualize theoretically the basis for his/her choice. This requires that hypotheses be tied directly to theory and thus allows for systematic theory testing to occur (Dansereau, Alutto, Markham & Dumas, 1982). Second, the consideration of several levels of analysis means that the researcher must widen his/her perspective to consider several frequently conflicting theories to explain a phenomenon, rather than depending upon the researcher’s preferred theory (Dansereau et al., 1982). Third, the solution to a problem may be affected by the level of analysis (entity) chosen for study and indicated by the results (Dansereau & Markham, 1987). In other words, if it is found that a relationship exists at the level of the supervisory work group, but not at the

level of the plant, then attention can be focused at the level sustaining the relationship. As an example, if employees' absence behavior at the group level (but not at the plant level) is related to their perception of management's absence goals, then intervention efforts can be concentrated at the level of the supervisory work group, where the relationship has been found.

According to Rousseau (1985), multi-level research is scarce in organizational behavior for two reasons. First, organizational behavior has its roots in psychology and sociology and the variables studied reflect either the micro (psychology) or the macro (sociology) perspective, but not the two combined. Second, multi-level research is "messy" (1985: 3). Group or organizational data is used for macro issues and individual data is used for micro issues, and mixed level issues are virtually ignored.

In this study of absence climate, the researcher is immediately faced with mixed level issues. This is because it is theoretically possible for a climate to be found within different subsystems of the organization (Powell & Butterfield, 1978). Two mixed level issues a climate researcher must consider are 1) choice of the appropriate entity or unit of analysis and 2) conceptualization of how the study's variables relate to each other across different levels. Each issue is discussed below.

First, the choice of the appropriate entity in climate research has generally depended upon how the data were to be used and how the survey questions were worded (Schneider & Reichers, 1983). Thus, the possibility of subsystem climates has been commonly overlooked. This study of absence climate begins by ascertaining the individual member's perspective and analyzing whether absence climate exists at the individual level of analysis. Next, the necessary aggregation is made of individual perceptions to match the selected organizational unit. Two organizational units are ex-

amined: the supervisory group and the plant. While other social groups could have been selected the focus in this study is on the units in the formal organizational structure.

Second, the issue of how variables relate to one another across different levels must be considered. In this study the concern is how the three previously discussed dimensions of absence climate relate to absence behavior at the level of the individual, the supervisory group and the plant. To understand the absence climate construct, one must examine the determinants of absence climate. How is it that employees might have similar (homogeneous) perceptions of absence practices and procedures? Schneider and Reichers (1983) suggest that climates emerge because employees 1) experience and react to common organizational characteristics, 2) have similar attributes by virtue of their attraction, selection and retention in an organization and 3) share perceptions and meanings as a result of interactions with one another. In addition to the above general reasons for the development of climate, an absence climate would be expected to develop because attendance is essential to meeting organizational objectives and employee absence could jeopardize meeting those goals. While supervisory group climates might vary because of different interactions within the group (Schneider & Reichers, 1983), it is anticipated that these differences will actually be a reflection of each plant's absence climate.

## **Summary of the Conceptual Model**

From a "variable" perspective, the proposed model suggests a possible relationship between absence climate and absence behavior above and beyond any relationship with the personal characteristics of gender, age and tenure. From an "entity" perspective, data



will be analyzed at three levels of aggregation: the individual level (using the responses of 1,139 employees), the supervisory level (using forty-six different supervisory groups), and the plant level (using five different plants). These three levels were chosen because they match the formal organizational structure. Each employee is a member of a supervisory group, which is part of (or embedded within) a particular plant. The five plants are all part of one organization. The appropriateness of each aggregation for absence climate will be empirically examined based on the criteria of discrimination and predictability of absence behavior (cf. Joyce & Slocum, 1984).

## *Research Hypotheses*

This research will test the six hypotheses<sup>3</sup> discussed below. The first three address the individual level of analysis. They investigate the relationship between absence climate and absence behavior, regardless of any social group to which employees might belong. The last three hypotheses investigate the appropriateness of using supervisory groups and plants as the social units for aggregation. The importance of choosing the appropriate level of analysis was confirmed by Hannan and Freeman (1976: 933), who noted that generally the "...choice of unit is treated so casually as to suggest that it is not an issue. We suspect that the opposite is true - that the choice of unit involves subtle issues and has far-reaching consequences for research activity."

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<sup>3</sup> The subscript of <sub>IND</sub> following a hypothesis number is used to indicate that the individual level of analysis is being examined. The subscript <sub>SUP/PLT</sub> following a hypothesis number is used when reference is to either the supervisory group or the plant level of analysis. The subscript <sub>SUP</sub> is used when the reference is to only the supervisory group level of analysis; the subscript <sub>PLT</sub> is used when the level of analysis is only the plant. The subscript <sub>MULT</sub> following a hypothesis number is used to refer to a comparison of results at two different levels of analysis.

## **Hypothesis 1<sub>IND</sub>**

**Hypothesis 1<sub>IND</sub>: Employees perceiving more pressure to attend will have lower absence behavior, after statistically controlling for gender, age and tenure at the individual level of analysis.**

This hypothesis is derived from goal setting theory (Locke, 1975; Locke, Shaw & Saari, 1981). Goal setting theory suggests that goals are something a person strives to achieve, and that goals and intentions directly influence human behavior. When goals are difficult and specific, performance has been found to be higher than when goals are easy or ambiguous (Latham & Yukl, 1975). This has been demonstrated in both laboratory (Locke, Cartledge, & Knerr, 1970) and field settings (Latham & Yukl, 1975). Employees who perceive that management has high attendance standards (i.e. perceive more external pressure) would therefore be expected to have lower absence behavior. This is in contrast to those employees who perceive that management has low or ambiguous attendance standards (i.e. perceive less external pressure) and therefore would be expected to have higher absence behavior.

## **Hypothesis 2<sub>IND</sub>**

Hypothesis 2<sub>IND</sub>: The more employees personally believe that absence behavior is acceptable, the higher their absence behavior will be, after statistically controlling for gender, age and tenure at the individual level of analysis.

This hypothesis is also derived from goal setting theory (Locke et al., 1981). While Hypothesis 1 examines employees' perceptions of management's absence goals, Hypothesis 2 focuses on employees' personal beliefs about what level of absence is acceptable and what type of absence is acceptable. Employees, who perceive less internal pressure as a result of rationalizing their absence and holding weak attendance standards would be expected to have more absences. On the other hand employees, who do not rationalize their absence and who hold challenging standards would be expected to perceive more internal pressure to attend (higher attendance goals) and thus have fewer absences.

## **Hypothesis 3<sub>IND</sub>**

Hypothesis 3<sub>IND</sub>: The more employees perceive either positive consequences for attendance or negative consequences for absence, the lower will be their absence behavior, after statistically controlling for gender, age and tenure at the individual level of analysis.

The third hypothesis is derived from reinforcement theory (specifically the Law of Effect [Thorndike, 1911]), which states that when a response to a situation has the desired results, then the behavior will be repeated. If the response creates discomfort, then the behavior will be less likely to recur. It follows that employees' absence behavior will be lower if they detect either positive consequences of having a good attendance record or negative consequences of having a poor one. Steers and Rhodes (1984) reviewed the absence literature on organizational control systems and concluded that both positive reinforcement programs and mixed programs (those including both penalties and rewards) could be powerful in controlling absence.

#### **Hypothesis 4<sub>SUP/PLT</sub>**

Hypothesis 4<sub>SUP/PLT</sub>: Supervisory groups (and plants) will be significantly different from each other in terms of the three dimensions of absence climate.

The fourth hypothesis examines whether "discrimination" between units<sup>4</sup> (Joyce and Slocum, 1984: 722) is found for the two aggregate levels of analysis being considered, (e.g., supervisory group and plant). Discrimination can be demonstrated by showing differences between the averaged perceptions of the social units. Leadership theory helps explain some of the expected differences between both supervisory groups and plants. During the 1940's, studies were conducted at Ohio State and the University of

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<sup>4</sup> The term "unit" refers to an aggregation or grouping. This usage allows for "unit" to mean either the supervisory group or plant. In contrast, the term between-supervisory group refers specifically to supervisory groups and between-plant refers specifically to plants.

Michigan (Fleishman, 1953, 1957; Likert 1961; Yukl, 1981) which showed that different leader behaviors had different effects on employee attitudes and behavior. Franklin (1975a, 1975b) recognized this impact by leaders and contended that the highest level managers established the climate within an organization by setting procedures and conditions. These procedures and conditions then served to influence and constrain the managers at the next lower level, who in turn influenced conditions and procedures for the levels of management below them. In this way differences in perceived climate would exist between units within the same organization, despite an overall organizational effect. A study by Pritchard and Karasick (1973) examined five regional subunits of an organization and found that they were significantly different ( $p < .05$ ) on five of the eleven dimensions measuring organizational climate. The authors cautioned that the finding of no difference on the other six dimensions may have been due to the small sample size which averaged nine managers per region. They also noted that superior-subordinate relations were related to three of the five scales in which significant differences were found. Their study demonstrated that the local environment, as well as the overall organizational practices and policies, can affect the climate of an organizational subunit and thus differences among subunits can be expected.

### **Hypothesis 5<sub>SUP/PLT</sub>**

Hypothesis 5<sub>SUP/PLT</sub>: Significant between-supervisory group (and plant) covariation will be found for the relationship between each of the three dimensions of absence climate and absence behavior.

This hypothesis is a re-examination of Hypotheses 1-3 utilizing the supervisory group (and then the plant) as the level of analysis. This re-examination is necessary in order to determine whether membership in either the supervisory group or the plant affects the relationship between the perceptions of absence climate by the organizational unit and that organizational unit's absence behavior. In other words, it is here that the second criterion (predictability) of Joyce and Slocum (1984) for determining the appropriate social unit for aggregation is addressed. That criterion is for a relationship to be found between climate and the dependent variable being predicted.

Very few studies to date have examined the perceptions of absence by members of a social unit and then related those perceptions to absence behavior. The primary study of employee perceptions toward absence is that of Chadwick-Jones et al. (1982), who interviewed 488 direct production workers in Britain and 231 white collar workers in Canada. While differences were found in the perceptions of employees among the blue collar and white collar samples, these perceptions were not examined in relationship to the actual absence behavior of those employees. Instead, the investigators inferred the existence of absence cultures from their finding of different average absence rates between sampled industries. In another study Nicholson and Johns (1985) suggested *ex post facto* that a change of absence cultures occurred at a furniture manufacturing plant after employees assumed ownership of it. They based this interpretation on changes in the reasons given by employees for absence, i.e., absences were more frequently reported as involuntary after the change to employee ownership. The absolute level of absence did not change.

Joyce and Slocum (1984) noted the need for further research on the relationships between aggregate climates and performance because such a relationship is often pre-

sumed, but not well-substantiated. Jones and James (1979) found no difference at the division level between employee perceptions of climate dimensions and good or poor performance. However, they stated that high performance could already have been the norm and low performers could already have been removed, thus resulting in the lack of significant findings. Field and Abelson (1982) included performance as an outcome of their climate model, but offered no empirical studies assessing their model. The well-known study (Lewin et al., 1939) of the experimentally created climates of democratic, authoritarian and laissez-faire leadership provided some support for the differential effect of those climates on the performance of the subjects. Lawler, Hall and Oldham (1974) found that organizational climate factors were related significantly in two of the three performance measures used in their study of 117 research and development laboratories.

In summary, the findings have been ambiguous as to whether there is a relationship between climate and performance. Thus, finding the relationship posited in Hypothesis 5 between the dimensions of absence climate and absence behavior would be an important step in validating the absence climate construct at the level of either the supervisory group or the plant.

### **Hypothesis 6<sub>MULT</sub>**

Hypothesis 6<sub>MULT</sub>: Relationships found between absence climate and absence behavior at the level of the supervisory group will also be found at the level of the plant.

Although this hypothesis is a restatement of Hypothesis 5<sub>SUP/PLT</sub>, it is considered as a separate hypothesis for the sake of clarity. The sixth hypothesis examines whether a relationship between two different variables will hold across two different levels of analysis. The term utilized by Dansereau et al., to indicate this phenomenon is “cross-level effect.” There is some confusion in terminology, as Rousseau (1985) would describe this effect as “multi-level” rather than “cross-level.” Rousseau (1985: 20) reserves the term “cross-level” for “...a research problem involving the relationships between independent and dependent variables at different levels.” Since the methodology utilized in this study is based on the work of Dansereau et al. (1984), their usage of the term “cross-level” will be employed. Thus, if employee perceptions of absence climate were found to correlate with employee absence behavior at both the supervisory group level and the plant level, this would be termed a cross-level effect, i.e. the same relationship would be seen at two different levels.

The meaning of such a cross-level effect is that any relationship found between absence climate and absence behavior would actually be embedded in the larger social system, i.e., the plant. The appropriate level of analysis for studying absence climate would therefore be the plant level, rather than the supervisory group level. Further analyses at an organizational and/or community level would be needed in order to determine if yet a higher level of analysis applied.



## *Summary*

Chapter 2 has reviewed the literature related to four different theories of absence behavior. A model of absence climate was developed based upon the social theory of absence. Literature pertaining to each of the components of that absence climate model were reviewed. Finally, six research hypotheses were presented and discussed.

## Chapter 3: Methodology and Expected Results

### *Setting*

The research locations were five “cut-and-sew” garment factories in the Virginia/North Carolina region.<sup>5</sup> They were controlled through a common corporate structure. The plants were geographically dispersed, being located from 50 to 190 miles apart. Plants ranged in size from 150 to 400 employees. There was one vice president of personnel, who would travel to each of the plants to provide support services. He was aided by a personnel assistant at each plant. It was the policy of each plant to operate independently, as exemplified by their use of different names for each plant.

The attendance policies at each of these plants were very similar. Employees were disciplined for and could be terminated for excessive absenteeism. There were no paid sick days. There were no excused absences according to plant management. Management’s

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<sup>5</sup> This dissertation utilized data which were part of a multi-year absenteeism study investigating employee attitudes toward their job, organization, supervisor and absence.

goal was perfect attendance. Absence was tied to paid vacation in that the fewer days an employee was absent, the higher the amount paid during vacation. The absence rate for the plants ranged from 3 percent to 8 percent with a large amount of seasonal variation. The turnover rate was an average of 40 percent (which was comparable with the industry) except at one plant the turnover rate was 120 percent.

A questionnaire was administered to 1216 employees and 46 supervisors in July of 1983. Twenty-seven of these questionnaires were eliminated due to incompleteness. Fifty additional questionnaires were unusable because a supervisory group was not identified from employees' responses. Thus, there were a total of 1139 usable questionnaires. Of these 1139 respondents there were 1089 women (95.6 percent) and 50 men (4.4 percent). The average age was thirty-six. The youngest employee was seventeen and the oldest employee was sixty-nine. The average tenure was five and one half years, ranging from less than one month to thirty-one years. The questionnaire was completed by employees at the plant during work time. Confidentiality of individual responses was assured. Employees were asked to provide their names in order to allow for tracking their responses and attendance records from one time period to the next.

## *Measures*

### **Absence Behavior**

Individual attendance records were collected for the 6-month time period (January 1983 through June 1983) prior to the administration of the questionnaire and for the 6-month

time period (July 1983 through December 1983) following the questionnaire administration. An average was obtained by collapsing across the entire 12-month period. This is considered a conservative procedure, since neither past nor future absence measures were given preference. *Absence Rate* was calculated by dividing the number of days absent by the number of days an employee could have worked (excluding time off due to vacation, personal leave or layoffs). Absence rate is a measure of absence duration, i.e. the "percentage of work time lost" (Atkin & Goodman, 1984: 73). *Absence Frequency* was calculated by counting the number of absence incidents, regardless of the number of days in each incident. Absence frequency measures the occurrence of absence. Annualization was performed in order that the absence frequency for employees with less than twelve months of tenure would be comparable to the absence frequency of those with twelve or more months of tenure.

## **Absence Climate**

The independent variables that constitute absence climate are "Organizational Pressure to Attend," "Explanations for Absence," and "Consequences of Absence." The following sections describe how each variable was initially operationalized. The measures were derived from a review of the empirical and theoretical literature related to each of the dimensions and discussed in Chapter 2.

### ***Organizational Pressure to Attend***

*Organizational Pressure to Attend* was operationalized by three variables. The first variable was labeled "Employee Pressure to Attend" and it was measured by the following item:

- Other employees put pressure on me to show up for work SA A ?A ?D D SD NA

The six possible responses were defined as follows:

SA - Strongly Agree

A - Agree

?A - Somewhat Agree

?D - Somewhat Disagree

D - Disagree

SD - Strongly Disagree

NA - Non Applicable

The second variable was labeled, "Management's Goal for Absence" and was measured by the following item:

- What do you think management's goal for absenteeism is for you? (Check only one below.)

\_\_\_ Perfect attendance

\_\_\_ 1 or 2 days a year

\_\_\_ 3 or 4 days a year

\_\_\_ 5 or 6 days a year

\_\_\_ 7 days a year or more

\_\_\_ Management does not seem to have a clear goal.

The third variable was labeled, "Organizational Control" and was measured by the following items:

- My Supervisor encourages good attendance SA A ?A ?D D SD NA
- The Personnel Assistant encourages good attendance SA A ?A ?D D SD NA
- The Plant Manager encourages good attendance SA A ?A ?D D SD NA

The first two variables (labeled Employee Pressure to Attend and Management's Goal for Absence) are used as separate measures of Organizational Pressure to Attend. The last three items constitute the scale used by Markham et al. (1984) under the title "Organizational Control." The coefficient alpha was .77 (this was based on data from one plant). As will be discussed in the section on analytical techniques, further analyses of the scales based on *all* the plants (N= 5) in this study will be made. The Organizational Control scale constitutes a third measure of Organizational Pressure to Attend.

### *Explanations for Absence*

The dimension of *Explanations for Absence* was operationalized by two variables. The first variable was labeled "Rationalization" and is measured by the following three items:

- It doesn't bother me to be absent because when I don't  
work, I don't get paid SA A ?A ?D D SD NA
- Sometimes I need to be absent to get some rest SA A ?A ?D D SD NA
- Being absent occasionally is one of the benefits of  
this job SA A ?A ?D D SD NA

The second variable was labeled "Acceptable Level of Absence" and is measured by the following item.

- In YOUR VIEW, what is an acceptable level of absenteeism here?  
 \_\_\_\_\_ days a year

The first variable constitutes the scale utilized by Markham et al. (1984) under the title “Rationalization.” The reported coefficient alpha based on data from one plant was .45. The latter variable, which uses a different metric than the scale, constitutes the second measure of Explanations for Absence.

### *Consequences of Absence*

*Consequences of Absence* was operationalized by the variable labeled “Organizational Sanctions.” It was measured by the following items:

- Employees with good attendance get better work than  
 employees with poor attendance records SA A ?A ?D D SD NA
- A poor attendance record increases the chance  
 that I will be “clocked out” if there is no work SA A ?A ?D D SD NA
- Employees with poor attendance records are likely to  
 lose their jobs SA A ?A ?D D SD NA

This is the scale used by Markham et al. (1984) under the title “Organization Sanctions.” Its coefficient alpha based on one plant was .53. This scale (Organizational Sanctions) is the single measure of Consequences of Absence.

## **Control Variables (Gender, Age and Tenure)**

The control variables were operationalized as follows. *Gender* was determined by the researchers from the employee's name as indicated on his/her attendance record. *Age* was calculated by asking the employee to state his/her date of birth on the questionnaire. The date of birth was then converted into years. *Tenure* was determined from company records and converted into the number of months the individual had been consecutively employed at the plant.

## ***Analytical Techniques***

### **Initial Analyses**

Analysis begins with a full factor analysis utilizing the questionnaire data from all five plants. The purpose of the factor analysis is to investigate the three scales used to measure absence climate (Organizational Pressure to Attend, Explanations for Absence, and Consequences of Absence). While it was intended that each scale measure a separate factor, it was recognized that some items might need to be eliminated or added (from the full absence questionnaire) in order to more accurately reflect an underlying dimension.



Next, coefficient alphas are presented for each of the three scales based on data from all five plants (preliminary analyses utilized only the two largest plants). The purpose of such a calculation is to measure the internal consistency of the scale items. Refinement of the scales (addition or deletion of items) was required in order to insure adequate reliability of the scales. This was done with careful attention to the construct validity of the scales.

Finally, an analysis is made to determine whether multicollinearity is a problem. The technique used to detect multicollinearity is variance inflation factors (VIF). VIF measures the interrelationships among the regressor variables in the model. If one variable is closely related to another and if it affects the estimate of the relationship with the dependent variable, the variance inflation factor becomes large. Variance inflation factors which are greater than 6-10 are considered suspect (Montgomery & Peck, 1982: 300). If all the variables were orthogonal to one another, the VIF would be 1.

### **Hypotheses 1-3**

The first three hypotheses are tested by using multiple regression analysis on the model of absence climate developed earlier. The three regression equations for testing are shown in Figure 2.

As can be seen in Figure 2, the control variables of Gender ( $\beta_1x_1$ ), Age ( $\beta_2x_2$ ), and Tenure ( $\beta_3x_3$ ) are entered prior to each aspect of absence climate. The symbol  $\beta_4x_4$  in Equation 1 represents the effect of the aspect of absence climate entitled Organizational Pressure to Attend on the dependent variable of Absence Behavior. The purpose of entering Organizational Pressure to Attend last is to determine the impact of that variable after

$$\text{Equation 1} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

$$\text{Equation 2} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_5x_5 + \varepsilon$$

$$\text{Equation 3} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_6x_6 + \varepsilon$$

Where:

$y_1$  = Absence Rate or

$y_2$  = Absence Frequency

$\alpha$  = the y intercept

$\beta$  = slope corresponding to the i-th independent variable

$x_1$  = Gender

$x_2$  = Age

$x_3$  = Tenure

$x_4$  = Absence Climate: Organizational Pressure to Attend

$x_5$  = Absence Climate: Explanations for Absence

$x_6$  = Absence Climate: Consequences of Absence

$\varepsilon$  = error

**Figure 2. Multiple Regression Model for Absence Climate at the Individual Level of Analysis**

holding constant gender, age and tenure. Equations 2 and 3 follow a similar format. Since the dependent variable of Absence Behavior is measured both by Absence Rate ( $y_1$ ) and by Absence Frequency ( $y_2$ ), one additional regression equation will be performed in the same format for each of those measures. Thus, the entire procedure will consist of six (6) regression equations. Each equation will be conducted at the individual level of analysis. This model contains no factors for the interaction of any of the independent variables as no interactions are indicated in the literature.

The expected results for the first three hypotheses are the following. First, a negative relationship is expected between each of the absence behavior measures and “Organizational Pressure to Attend” while holding constant the other independent variables. This would indicate that the more pressure individuals perceive to attend, the less they are absent. Second, a positive relationship is expected between each of the measures of absence behavior and “Explanations for Absence” while holding constant the control variables. In other words, the more that absence is perceived as excusable or acceptable (i.e. the less internal pressure employees perceive), the more they will be absent. Finally, a negative relationship is expected between each of the measures of absence behavior and “Consequences of Absence.” Such a result would indicate that the more employees perceive positive consequences attached to good attendance and negative consequences attached to poor attendance, the less they will be absent.

## **Hypotheses 4-6**

The last three hypotheses are tested by use of Within and Between Analysis of Variance (WABA). This is an inferential/statistical technique proposed by Dansereau et al. (1984)

and Markham, Dansereau, Alutto & Dumas (1983) and used in Markham (1988). It identifies between-unit and within-unit variation and covariation, and thus is well suited for determining whether or not the social units selected for aggregation have a group effect.

The analysis of the data was accomplished with the SAS and DETECT (Dansereau, Chandrasekaran, Dumas, Coleman, Erlich and Bagchi, 1986) statistical packages. SAS was used for the ANOVA and the multiple regression analyses with control variables (Hypothesis 4<sub>SUP/PLT</sub> and Hypothesis 5<sub>SUP</sub>). DETECT was used to extend the ANOVA analysis by examining the within-unit variation in relationship to the between-unit variation (Hypothesis 4<sub>SUP/PLT</sub>) and to examine the relationship between the absence climate variables and absence behavior (without controls) across supervisory groups and plants (Hypothesis 6<sub>MULT</sub>).

The fourth hypothesis investigates whether differences exist between supervisory groups and between plants on the three aspects of absence climate. WABA I focuses on the between-unit and within-unit variation in one variable. Since this investigation examines primarily the between-unit condition, the statistical technique of ANOVA, which is part of WABA I, is first utilized. The equation is as follows:

$$H_o = \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_k$$

It is expected that differences will be found between supervisory groups and between plants on each of the three aspects of absence climate. This would provide some evidence of "discrimination," which is one of the criteria used to confirm having selected the appropriate unit for aggregation. It would likewise indicate some similarity among

the perceptions of unit members, since significant between-unit differences cannot be found unless there is also convergence or internal consistency within units. This is the traditional method employed to examine for significant differences between social units.

However, this study employs a second procedure for examining differences between groups. This second procedure (WABA I) investigates whether any significant differences found between units also have practical significance (Dansereau et al., 1984). Thus, there is a two step hurdle which must be passed in order to meet the discrimination criteria. First, statistically significant differences must be found between-units (as in ANOVA). Second, the between-unit variation must be significantly larger than the within-unit variation. The between-unit variation is called the between-eta correlation and is symbolized by  $\eta_{BX}$ ; the within-unit variation is termed the within-eta correlation and is symbolized by  $\eta_{WX}$  (Dansereau et al., 1984).

The E ratio ( $\frac{\eta_{BX}}{\eta_{WX}}$ ) is used to determine whether the between-eta correlation or the within-eta correlation best represents the type of variation occurring. If the ratio is equal to or greater than 1.303, this means that the between-unit variation is more highly correlated with the total variation and thus unit (supervisory group or plant) membership affects the value of the variable. On the other hand, if the E ratio is equal to or less than .767, this indicates that the variance is not related to unit membership and instead that it is individual (or the lower level) differences which are responsible for most of the variation occurring. If the E ratio is 1, this means that the total variation is comprised equally of between-unit and within-unit variation (Dansereau et al., 1984).

By manually computing from the ANOVA output, findings corresponding to those of WABA I are obtained. For example, the square root of  $R^2$ , is the between-eta "correlation". This is possible because statistical cells or units have been aligned with super-

visory groups/plants in this particular design. Thus, actual response is the total variation and predicted response (the model) is the between-unit variation. Consequently, between-eta correlation measures the relationship of the between-unit variation and the total variation. By taking the square root of  $1 - R^2$ , the within-eta correlation is obtained. Thus by observation of  $R^2$ , it is possible to determine whether the between-unit or the within-unit variation is larger. Eta correlations may also be calculated from the ANOVA output by means of the following equations:  $\eta_{BX} = \sqrt{\frac{SSB}{SST}}$  and  $\eta_{WX} = \sqrt{\frac{SSW}{SST}}$ .

In summary, in order to show that group membership affects the value of a variable, two findings must result. First, there must be statistically significant between-unit variation. Second, that statistically significant between-unit variation must also be significantly larger than the within-unit variation. If both findings occur, then there are statistically and practically significant between-unit differences. The discrimination criteria would be met and there would be initial support that the social unit being examined was an appropriate aggregation. There would be further support that the appropriate aggregation had been selected if a between-unit inference were also made for the relationship between absence behavior and the absence climate variables. This latter question is considered in Hypothesis 5<sub>SUP/PLT</sub>.

The fifth hypothesis examines whether supervisory groups (and plants) affect both employee perceptions of absence climate and their absence behavior. In order to test this hypothesis the first three hypotheses are now examined at both the group and plant levels of analysis. As shown in Figure 3, the equations are the same as those at the individual level of analysis, except that individual scores for the independent variables are replaced by the mean of the aggregated unit, i.e. the supervisory group or the plant.

As an example, the symbol used in the regression equation to represent the effect of testing “Organizational Pressure to Attend” at an aggregated level is  $\beta_4 \bar{x}_{4j}$ .

The methodology employed in the above paragraph is referred to as WABA II (Dansereau et al., 1984). It enables the investigation of the relationship between two variables and indicates whether there is significant between-unit or within-unit covariation. Between-unit covariation would indicate that a unit’s members responded verbally (to a set of questions) and behaviorally (by their absence behavior) in a similar manner. The unit averages for the two variables would be ideally significantly different from those of other supervisory groups (and plants). The amount of variation within the unit and away from the mean would be small. This is the expected finding for this hypothesis for both the supervisory group and the plant. It would satisfy the second criterion of Joyce and Slocum (1984) for finding a relationship between climate and the predicted behavior and thus add support that the chosen unit for aggregation is correct. On the other hand, if significant within-unit covariation is found, this would indicate that neither the perceptions of the unit members regarding absence climate nor their corresponding absence behavior were similar to one another. Significant between-unit covariation is expected.

In summary, evidence for the appropriateness of studying absence climate at the level of the supervisory group/plant is obtained by looking at the components of the total correlation. The total correlation is comprised of the eta correlations and of the within- and between-unit correlations. This is expressed mathematically in the following equation, which is termed the “WABA equation” (Dansereau et al., 1984: 122):

$$\eta_{WX} \eta_{WY} r_{WXY} + \eta_{BX} \eta_{BY} r_{BXY} = r_{TXY}$$

$$\text{Equation 1} \quad \bar{y}_j = \alpha + \beta_1 \bar{x}_{1j} + \beta_2 \bar{x}_{2j} + \beta_3 \bar{x}_{3j} + \beta_4 \bar{x}_{4j} + \varepsilon$$

$$\text{Equation 2} \quad \bar{y}_j = \alpha + \beta_1 \bar{x}_{1j} + \beta_2 \bar{x}_{2j} + \beta_3 \bar{x}_{3j} + \beta_5 \bar{x}_{5j} + \varepsilon$$

$$\text{Equation 3} \quad \bar{y}_j = \alpha + \beta_1 \bar{x}_{1j} + \beta_2 \bar{x}_{2j} + \beta_3 \bar{x}_{3j} + \beta_6 \bar{x}_{6j} + \varepsilon$$

Where:

$\bar{y}_{1j}$  = Weighted Average Absence Rate or

$\bar{y}_{2j}$  = Weighted Average Absence Frequency

$\alpha$  = the y intercept

$\beta$  = slope corresponding to the i-th independent variable

$\bar{x}_{1j}$  = Weighted Average Gender

$\bar{x}_{2j}$  = Weighted Average Age

$\bar{x}_{3j}$  = Weighted Average Tenure

$\bar{x}_{4j}$  = Weighted Average Absence Climate: Organizational Pressure to Attend

$\bar{x}_{5j}$  = Weighted Average Absence Climate: Explanations for Absence

$\bar{x}_{6j}$  = Weighted Average Absence Climate: Consequences of Absence

$\varepsilon$  = error

**Figure 3. Multiple Regression Model for Absence Climate at the Supervisory Group or Plant Level of Analysis**



What this equation means is that for absence climate to exist at the level of the supervisory group/plant, the between-unit components ( $\eta_{BX}\eta_{BY}\eta_{BXY}$ ) must predominate over the within-unit components ( $\eta_{WX}\eta_{WY}\eta_{WXY}$ ). This means that the between-eta correlations for the absence climate variable and absence behavior must be significantly larger than the corresponding within-eta correlations *and* that the between-unit covariation must be significantly larger than the within-unit covariation. If both of these criteria are not met, then evidence of absence climate at the level of the supervisory group/plant is not found.

The sixth and final hypothesis looks at multiple levels of analysis. WABA II examines the nature of the relationships among variables within a single level, as well as at different levels, in order to see whether there is “homology,” i.e. similarity across levels of analysis, or whether there is discontinuity of constructs (Roberts, Hulin, & Rousseau, 1978). Discontinuity of constructs means that the underlying processes relating the variables to one another are restricted to the level at which they are found. It is expected in this study that a homology will be found. The specific type of homology would, in the terminology of Dansereau et al. (1984: 46), be that of “cross-level wholes.” This means that at both the supervisory group level and the plant level, perceptual agreement (low variance) among unit members and differences between units would be found for the relationship between absence behavior and the absence climate variables.

Such a finding would suggest that the source of the group effect was the higher level of analysis, e.g., the plant. In other words, the shared perceptions found at the level of the supervisory group would be embedded in the plant of which the supervisory group was a subsystem. It would be the plant, therefore, that was influencing the common perceptions of absence climate. Differences would be found between supervisory groups

only because they were examined in conjunction with the supervisory groups of other plants. In any given plant the supervisory groups would tend to be similar. Such a finding would lend credence to the concept of climate as an organizational level variable.

## *Summary*

Chapter 3 discussed the characteristics of the research sample. It then described the measures of absence behavior, absence climate and the control variables (gender, age and tenure). Finally, it reviewed the analytical techniques to be used in the study and the expected results.

## Chapter 4: Results

### *Overview*

This chapter begins by reviewing the results of the initial psychometric analyses performed on the measures of absence climate. The initial analyses included the performance of a factor analysis, the calculation of coefficient alphas, and an examination for multicollinearity. This chapter next reviews the results of the six hypotheses. The first three hypotheses consider the model of absence climate at the individual level of analysis. The next two hypotheses consider the model of absence climate at the level of the supervisory group and plant. The sixth hypothesis looks at the supervisory group and plant simultaneously in order to determine if relationships found between absence climate and absence behavior variables hold across levels of analysis. Next, the chapter briefly reviews the results related to the control variables and to the measures of absence behavior. The chapter concludes by pointing out methodological limitations of the study.

## *Initial Psychometric Analyses*

A factor analysis was first conducted in order to investigate whether the three proposed absence climate scales identified clearly separate factors or whether any or all of the scales would need to be modified in order to more accurately reflect an underlying absence climate dimension. The three proposed scales were either intact or slightly modified versions of scales used by Markham et al. (1984), whose original versions of the scales were based on questionnaire data from just two plants. The factor analysis performed in this study utilized questionnaire data from all five plants.

A varimax rotation was performed on the questionnaire data from the five plants.<sup>6</sup> Based on the results of that rotation, modification of two of the original scales was indicated. Items constituting each of the three new scales are found in Figure 4, along with their respective coefficient alphas. The findings of the factor analysis and the coefficient alphas for the new (slightly modified) scales are discussed below.

The Attendance Encouragement Scale constituted one factor with an eigenvalue of 2.08. The three items identified in the factor were the same three items previously identified in the scale which was labeled Organizational Control Scale. (As the items were judged to be more reflective of management's efforts to encourage attendance, rather than to control absence, it was renamed the Attendance Encouragement Scale.) Other than the renaming of the scale in order to be more descriptive of the content of the scale, no other changes were made. The scale's coefficient alpha based on all five plants was .75. This

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<sup>6</sup> See Appendix 1 for a listing of the items included in the factor analysis and their respective loadings. Since this study was part of a large research project on absenteeism, the factor analysis included items used in this particular study, as well as items used in the larger research project.

**ATTENDANCE ENCOURAGEMENT SCALE**

- |   |    |   |    |    |   |    |    |
|---|----|---|----|----|---|----|----|
| 4. My Supervisor encourages good attendance           | SA | A | ?A | ?D | D | SD | NA |
| 5. The Personnel Assistant encourages good attendance | SA | A | ?A | ?D | D | SD | NA |
| 6. The Plant Manager encourages good attendance       | SA | A | ?A | ?D | D | SD | NA |

$\alpha = .75$

**RATIONALIZATION SCALE**

- |  |    |   |    |    |   |    |    |
|--|----|---|----|----|---|----|----|
| 2. It doesn't bother me to be absent because when I don't work, I don't get paid | SA | A | ?A | ?D | D | SD | NA |
| 10. Sometimes I need to be absent to get some rest                               | SA | A | ?A | ?D | D | SD | NA |
| 12. Being absent occasionally is one of the benefits of this job                 | SA | A | ?A | ?D | D | SD | NA |
| *14. My spouse or family asks me to take a day off work once in a while          | SA | A | ?A | ?D | D | SD | NA |
| * 8. If I tried harder, I could improve my attendance                            | SA | A | ?A | ?D | D | SD | NA |
| *16. Sometimes family problems make it impossible to get to work                 | SA | A | ?A | ?D | D | SD | NA |
| *31. I am sometimes absent because of car trouble or my ride doesn't come        | SA | A | ?A | ?D | D | SD | NA |

$\alpha = .62$

**ORGANIZATIONAL SANCTIONS SCALE**

- |   |    |   |    |    |   |    |    |
|---|----|---|----|----|---|----|----|
| 1. Employees with good attendance get better work than employees with poor attendance records         | SA | A | ?A | ?D | D | SD | NA |
| 19. A poor attendance record increases the chance that I will be "clocked out" if there is no work    | SA | A | ?A | ?D | D | SD | NA |
| 20. Employees with poor attendance records are likely to lose their jobs                              | SA | A | ?A | ?D | D | SD | NA |
| *23. When looking for work elsewhere, poor attenders will get a poor recommendation from this company | SA | A | ?A | ?D | D | SD | NA |

$\alpha = .54$

\* = item added as a result of factor analysis on data from five plants

**Figure 4. Absence Climate Scales and Their Coefficient Alphas**

is in contrast to the coefficient alpha previously reported, which was .77. Thus, when all five plants were used in the analysis, a slight decrease (.02) in the internal consistency of the instrument was found.

The second scale is (and was) called the Rationalization Scale. All three of the items previously included in this scale were found to be part of the same factor (factor loading of all items  $> .30$ ). As shown by the asterisked items in Figure 4, four additional items were included in this scale as they were part of the factor under consideration and were in conceptual agreement with the original three items, since each of the added items reflects a reason why an employee might be absent from work. The eigenvalue of the factor was 1.81. The coefficient alpha of the seven-item Rationalization Scale based on data from five plants was .62. The coefficient alpha for the analysis utilizing the previous three-item Rationalization Scale and based on data from only one plant was .45.

The third scale is (and was) termed the Organizational Sanctions Scale. While it originally included three items, the item stating, "When looking for work elsewhere, poor attenders will get a poor recommendation from this company" reflected a consequence of absence and had a factor loading ( $> .30$ ) and hence was added to the scale. The four items of the Organizational Sanctions Scale are listed in Figure 4. The eigenvalue of this factor was 1.22, and the coefficient alpha was .54. This is a very slight (.01) improvement over the analysis based on the the previous three-item Organizational Sanctions Scale utilizing one plant. In that analysis the coefficient alpha was .53.

After performing the factor analysis and calculating the coefficient alphas of the scales, the last of the initial analyses was the determination of whether a problem of multicollinearity existed for the variables within each of the three regression equations. Multicollinearity was assessed by examining the Variance Inflation Factor (VIF) for the

three regression equations using first 12-Month Absence Rate and then 12-Month Absence Frequency as the dependent variable. The results are displayed in Figure 5. A variance inflation factor of over 6 would be considered large by Montgomery and Peck (1982: 300). As can be noted in Figure 5, none of the VIFs was over 1.06 for any of the absence climate variables in the regression equations. Thus, multicollinearity was not considered a problem in this study. A correlation matrix of the absence climate variables is shown in Appendix 3.

Having performed a factor analysis, which resulted in the revision of two of the three original scales, and having found that multicollinearity of the absence climate variables was not a problem, testing of the six hypotheses was next begun. The results of testing those six hypotheses are given below.

### *Hypothesis 1<sub>IND</sub>, Hypothesis 2<sub>IND</sub>, and Hypothesis 3<sub>IND</sub>*

The first three hypotheses were tested using multiple regression analysis. Figure 6 (repeated here for the convenience of the reader) shows the three regression equations which were utilized. Equations 1, 2 and 3 correspond to Hypothesis 1<sub>IND</sub>, Hypothesis 2<sub>IND</sub> and Hypothesis 3<sub>IND</sub>, respectively.

Each equation tested a different dimension of absence climate. Equation 1 examined the dimension of Organizational Pressure to Attend, Equation 2 investigated Explanations for Absence and Equation 3 tested Consequences of Absence. Each equation used the individual responses of 1139 employees (irrespective of their membership in an organ-

	VARIANCE INFLATION
<b>12-MONTH ABSENCE RATE</b>	
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>	
Attendance Encouragement	1.01
Management's Goal for Absence	1.02
Employee Pressure to Attend	1.00
<b>EXPLANATIONS FOR ABSENCE</b>	
Rationalization	1.05
Acceptable Level of Absence	1.05
<b>CONSEQUENCES OF ABSENCE</b>	
Organizational Sanctions	1.06
<b>12-MONTH ABSENCE FREQUENCY</b>	
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>	
Attendance Encouragement	1.01
Management's Goal for Absence	1.02
Employee Pressure to Attend	1.00
<b>EXPLANATIONS FOR ABSENCE</b>	
Rationalization	1.05
Acceptable Level of Absence	1.05
<b>CONSEQUENCES OF ABSENCE</b>	
Organizational Sanctions	1.06

**Figure 5. Variance Inflation Factors for the Absence Climate Variables**



$$\text{Equation 1} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

$$\text{Equation 2} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_5x_5 + \varepsilon$$

$$\text{Equation 3} \quad y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_6x_6 + \varepsilon$$

Where:

$y_1$  = Absence Rate or

$y_2$  = Absence Frequency

$\alpha$  = the y intercept

$\beta$  = slope corresponding to the i-th independent variable

$x_1$  = Gender

$x_2$  = Age

$x_3$  = Tenure

$x_4$  = Absence Climate: Organizational Pressure to Attend

$x_5$  = Absence Climate: Explanations for Absence

$x_6$  = Absence Climate: Consequences of Absence

$\varepsilon$  = error

**Figure 6. Multiple Regression Model for Absence Climate at the Individual Level of Analysis**

izational subunit). The variables of Gender, Age and Tenure were controlled in order that the unique contribution of an absence climate dimension could be investigated. Since this study was concerned with two aspects of absence behavior, namely absence rate (time lost) and absence frequency (number of incidents), both measures of absence behavior were used as dependent variables. The former was called 12-Month Absence Rate and the latter was called 12-Month Absence Frequency.<sup>7</sup> Descriptive statistics for the variables considered in Hypotheses 1,2 and 3 are found in Appendix 2. The specific results of testing the first three hypotheses are given below.

### **Organizational Pressure to Attend and Absence Behavior (Hypothesis 1<sub>IND</sub>)**

The first hypothesis suggested that employees perceiving more pressure to attend would have fewer absences. The independent variables used to measure Organizational Pressure to Attend were Attendance Encouragement, Management's Goal for Absence and Employee Pressure to Attend. Two regression models were tested. The dependent variable of the first model was 12-Month Absence Rate; the dependent variable of the second model was 12-Month Absence Frequency.

The F value for the first regression model was 14.60, which is significant at  $p < .001$  as shown in Table 1a. The R-square for the overall model was .072. The R-square for the unique contribution of the absence climate variables was .008 and for the control variables it was .037. The middle portion of Table 1a shows the results of testing the Type

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<sup>7</sup> Tables in the chapter are labeled with the letter "a" when 12-Month Absence Rate is the dependent variable and the letter "b" when 12-Month Absence Frequency is the dependent variable. Thus, two tables having the same table number indicates that the results are from examining the same hypothesis; the "a" or "b" following the table number indicates whether it is the 12-Month Absence Rate or the 12-Month Absence Frequency which is being used as the dependent variable.

I and Type III Sum of Squares for each of the regressors.<sup>8</sup> As can be seen in the Type I Sum of Squares column, the three control variables were entered first, and all three contributed significantly to the total sum of squares explained by the model. In contrast, only two of the three measures of Organizational Pressure to Attend, i.e. Management's Goal for Absence ( $p < .01$ ) and Employee Pressure to Attend ( $p < .05$ ) were significant. As shown in the Type III Sum of Squares column, the three control variables also made a significant unique contribution to explaining the variance of the 12-Month Absence Rate. The absence climate variables of Management's Goal for Absence and Employee Pressure to Attend also made significant unique contributions. Attendance Encouragement was not a significant regressor. The bottom portion of Table 1a shows the estimate of each regressor's slope and the significance or non-significance of that slope.<sup>9</sup> The direction of the relationship between each variable and 12-Month Absence Rate can be found by observing, from the second column, whether a positive or negative T score is reported.

The second regression model is similar to the first; however the dependent variable of 12-Month Absence Frequency was used instead of 12-Month Absence Rate. The results of this analysis are found in Table 1b. The F value for the full model was 24.33 ( $p < .001$ ). The R-square was .114, which was slightly higher than the previous model's R-square. The R-square for the unique contribution of the absence climate variables

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<sup>8</sup> The Type I Sum of Squares shows the incremental effect of adding regressors into the equation. It is limited in that a variable's order of entry will affect the contribution of that variable. Consequently, the Type III Sum of Squares must also be considered. The Type III Sum of Squares (also known as a Partial F test) shows the effect of entering a regressor last into the model. Thus, a regressor will only be significant if it makes a significant contribution in the presence (after entry) of the other regressors. This is the key test used to assess Hypothesis 1,2 and 3, since it measures the *unique* contribution of a variable. Hence, it can measure whether an absence climate variable makes a significant contribution to the explanation of absence behavior after controlling for the demographic variables.

<sup>9</sup> The significance level of a parameter is the same as that found in the Type III Sum of Squares test since both tests are measuring the unique contribution of the particular variable. The sign of the parameter indicates the direction in which the parameter and the dependent variable are related.

**Table 1a. Sum of Squares "F" Test for Organizational Pressure to Attend and 12-Month Absence Rate at the Individual Level of Analysis**

**Dependent Variable: 12-Month Absence Rate                      Level of Analysis: Individual**

Source	Df	Sum of Squares	Mean Square	F =
Model	6	1654.36	275.73	14.60
Error	1132	21371.66	18.88	
Corrected Total	1138	23026.02		

R<sup>2</sup> Full = .072 (p < .001)  
R<sup>2</sup> Climate = .008                      R<sup>2</sup> Control = .037

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	269.04	14.41	.001
Age	1	855.08	45.78	.001
Tenure	1	343.40	18.39	.001
Attendance Encouragement	1	20.11	1.08	n.s.
Management's Goal	1	114.12	6.04	.01
Employee Pressure	1	59.91	3.21	.05

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	298.20	15.79	.114***	.013***
Age	1	260.84	13.82	-.106***	.011***
Tenure	1	299.33	15.85	-.114***	.013***
Attendance Encouragement	1	22.35	1.18	.031	.001
Management's Goal	1	110.41	5.85	-.069**	.005**
Employee Pressure	1	52.61	2.79	.048*	.002*

Parameter	Estimate	T FOR H0: β = 0	p >  T
Intercept	-0.09	-0.06	n.s.
Gender	2.50	3.97	.001
Age	-0.05	-3.72	.001
Tenure	-0.01	-3.98	.001
Attendance Encouragement	0.18	1.09	n.s.
Management's Goal	0.24	-2.42	.01
Employee Pressure	0.20	1.67	.05

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*

was .019 and for the control variables it was .052. The control variables, Management's Goal for Absence and Employee Pressure to Attend made significant unique contributions to the explanation of the variance in the dependent variable as shown by the Type III Sum of Squares. It should be noted, however, that the relationship between Employee Pressure to Attend and 12-Month Absence Frequency was not in the anticipated direction. While an inverse relationship had been hypothesized, a positive relationship was found. Employees who perceive pressure by their co-workers to attend have a higher frequency of absence. Management's Goal for Absence was related to absence frequency in the hypothesized direction. The more pressure employees perceive as a result of management's goal for absence (i.e. the fewer days they perceive it permissible to be absent), the lower is their absence frequency.

Hypothesis 1<sub>IND</sub> was rejected. Management's Goal for Absence made a significant unique contribution to the explanation of both measures of absence behavior. Employee Pressure to Attend also made a significant unique contribution, however, it was in the opposite direction than hypothesized. Attendance Encouragement did not make such a significant unique contribution.

### **Explanations for Absence and Absence Behavior (Hypothesis 2<sub>IND</sub>)**

The second hypothesis suggested that the more employees believe it is personally acceptable to be absent, the higher will be their absence behavior. The converse is also implied, i.e. those employees who find fewer acceptable reasons for being absent will have lower absence behavior. Two regression models were employed to test this hypothesis, one with 12-Month Absence Rate as the dependent variable and the other with

**Table 1b. Sum of Squares "F" Test for Organizational Pressure to Attend and 12-Month Absence Frequency Individual Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Individual**

Source	Df	Sum of Squares	Mean Square	F =
Model	6	4562.46	760.41	24.33
Error	1132	35383.47	31.26	
Corrected Total	1138	39945.93		

R<sup>2</sup> Full = .114 (p < .001)

R<sup>2</sup> Climate = .019      R<sup>2</sup> Control = .052

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	595.54	19.05	.001
Age	1	2393.56	76.58	.001
Tenure	1	827.15	26.46	.001
Attendance Encouragement	1	16.89	0.54	n.s.
Management's Goal	1	615.70	19.70	.001
Employee Pressure	1	113.64	3.64	.05

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	654.20	20.93	.128***	.016***
Age	1	765.13	24.48	.138***	.019***
Tenure	1	685.68	21.94	.131***	.017***
Attendance Encouragement	1	22.05	0.71	.023	.001
Management's Goal	1	602.86	19.29	-.123***	.015***
Employee Pressure	1	113.64	3.64	.053*	.003*

Parameter	Estimate	T FOR H0:	
		$\beta = 0$	$p >  T $
Intercept	0.59	0.29	n.s.
Gender	3.70	4.56	.001
Age	-0.08	-4.95	.001
Tenure	-0.01	-4.68	.001
Attendance Encouragement	0.18	0.84	n.s.
Management's Goal	0.57	-4.39	.001
Employee Pressure	0.29	1.91	.05

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*

12-Month Absence Frequency as the dependent variable. The independent variables were the control variables (Gender, Age and Tenure) and the Explanations for Absence measures (Rationalization and Acceptable Level of Absence).

The results of the first regression model for Hypothesis 2 are found in Table 2a. The F value of the model was 31.96 ( $p < .001$ ) with an R-square of .124. All of the regressors in the model were significant and in the expected direction, whether tested by the Type I or Type III Sums of Squares. The R-square for the unique contribution of the absence climate variables was .053 and for the control variables it was .025.

The second regression model showed similar and even stronger results as shown in Table 2b. The F value of the model was 60.05 ( $p < .001$ ) and the R-square was .210. All of the regressors made significant unique contributions to the explanation of the dependent variable (12-Month Absence Frequency), as can be seen in the third portion of Table 2b. The R-square for the unique contribution of the absence climate variables was .101 and for the control variables it was .033.

Given the support for Hypothesis 2<sub>IND</sub> as evidenced by the results from both regression models, it was accepted. Employees who believed that absence was more acceptable had higher absence behavior.

### **Consequences of Absence and Absence Behavior (Hypothesis 3<sub>IND</sub>)**

The third hypothesis proposed that employees perceiving positive consequences for attendance or negative consequences for absence would have lower absence behavior. The

**Table 2a. Sum of Squares "F" Test for Explanations for Absence and 12-Month Absence Rate at the Individual Level of Analysis**

Dependent Variable: 12-Month Absence Rate      Level of Analysis: Individual

Source	Df	Sum of Squares	Mean Square	F =
Model	5	2845.83	569.17	31.96
Error	1133	20180.19	17.81	
Corrected Total	1138	23026.02		

R<sup>2</sup> Full = .124 (p < .001)

R<sup>2</sup> Climate = .053      R<sup>2</sup> Control = .025

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	269.04	15.10	.001
Age	1	855.03	48.01	.001
Tenure	1	343.40	19.28	.001
Rationalization	1	878.70	49.33	.001
Acceptable Level of Absence	1	499.60	28.05	.001

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	175.90	9.88	.087**	.008**
Age	1	112.22	6.30	.070*	.005*
Tenure	1	281.09	15.78	.110***	.012***
Rationalization	1	717.90	40.31	.177***	.031***
Acceptable Level of Absence	1	499.60	28.05	.147***	.022***

Parameter	Estimate	T FOR H0: β = 0	p >  T
Intercept	-1.39	-1.05	n.s.
Gender	1.93	3.14	.01
Age	-0.03	-2.51	.01
Tenure	-0.01	-3.97	.001
Rationalization	1.03	6.35	.001
Acceptable Level of Absence	0.08	5.30	.001

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*



**Table 2b. Sum of Squares "F" Test for Explanations for Absence and 12-Month Absence Frequency at the Individual Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Individual**

Source	Df	Sum of Squares	Mean Square	F =
Model	5	8368.56	1673.71	60.05
Error	1133	31577.36	27.87	
Corrected Total	1138	39945.93		

R<sup>2</sup> Full = .210 (p < .001)

R<sup>2</sup> Climate = .101      R<sup>2</sup> Control = .033

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	595.52	21.37	.001
Age	1	2393.56	85.88	.001
Tenure	1	827.15	29.68	.001
Rationalization	1	2640.01	94.72	.001
Acceptable Level of Absence	1	1912.33	68.61	.001

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	344.34	12.36	.093***	.009***
Age	1	320.87	11.51	.090***	.008***
Tenure	1	650.19	23.33	.128***	.016***
Rationalization	1	2102.50	75.44	.229***	.053***
Acceptable Level of Absence	1	1912.33	68.61	.219***	.048***

Parameter	Estimate	T FOR H0:	
		$\beta = 0$	$p >  T $
Intercept	-2.23	-1.35	n.s.
Gender	2.70	3.52	.001
Age	-0.05	-3.39	.001
Tenure	-0.01	-4.83	.001
Rationalization	1.78	8.69	.001
Acceptable Level of Absence	0.16	8.28	.001

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*

respective dependent variables were the 12-Month Absence Rate and the 12-Month Absence Frequency. The independent variables for both models were the control variables (Gender, Age and Tenure) and the measure of Consequences of Absence (Organizational Sanctions).

The F value of the first regression model was 19.33 ( $p < .001$ ) as shown in the upper portion of Table 3a. The R-square was .064 for the full model. The Partial F test (Type III Sum of Squares) showed that while each of the control variables made a unique contribution to the explanation of the model's variance, this was not the case with Organizational Sanctions, which explained practically no unique variance. The R-square for the unique contribution of Organizational Sanctions was .000, while for the control variables it was .040.

As can be seen in Table 3b, a similar pattern of results was found using 12-Month Absence Frequency as the dependent variable. While the model was significant ( $F = 29.95$ ,  $p < .001$ ) and accounted for slightly more variance (R-square = .096) than when 12-Month Absence Rate was utilized as the dependent variable, the contribution was once again entirely from the control variables. In fact, the Type III Sum of Squares for Organizational Sanctions was only 0.73. Thus, the R-square for the unique contribution of Organizational Sanctions was .000, while for the control variables it was .058.

Given the negligible contribution that Organizational Sanctions made to the explanation of variance in either regression model, Hypothesis 3<sub>IND</sub> was not accepted at the individual level of analysis.

**Table 3a. Sum of Squares "F" Test for Consequences of Absence and 12-Month Absence Rate at the Individual Level of Analysis**

**Dependent Variable: 12-Month Absence Rate      Level of Analysis: Individual**

Source	Df	Sum of Squares	Mean Square	F =
Model	4	1469.51	367.38	19.33
Error	1134	21556.50	19.01	
Corrected Total	1138	23026.02		

R<sup>2</sup> Full = .064 (p < .001)

R<sup>2</sup> Climate = .000      R<sup>2</sup> Control = .040

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	269.04	14.15	.001
Age	1	855.08	44.98	.001
Tenure	1	343.40	18.06	.001
Organizational Sanctions	1	1.99	0.10	n.s.

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	313.53	16.49	.117***	.014***
Age	1	276.95	14.57	.110***	.012***
Tenure	1	320.29	16.85	.118***	.014***
Organizational Sanctions	1	1.99	0.10	.009	.000

Parameter	Estimate	T FOR H0: β = 0	p >  T
Intercept	1.54	1.03	n.s.
Gender	2.59	0.64	.001
Age	-0.05	-3.82	.001
Tenure	-0.01	-4.11	.001
Organizational Sanctions	0.05	0.32	n.s.

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*

**Table 3b. Sum of Squares "F" Test for Consequences of Absence and 12-Month Absence Frequency at the Individual Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Individual**

Source	Df	Sum of Squares	Mean Square	F =
Model	4	3816.96	954.24	29.95
Error	1134	36128.97	31.86	
Corrected Total	1138	39945.93		

R<sup>2</sup> Full = .098 (p < .001)

R<sup>2</sup> Climate = .000      R<sup>2</sup> Control = .058

Source	Df	TYPE I SS	F Value =	PR > F
Gender	1	595.52	18.69	.001
Age	1	2393.56	75.13	.001
Tenure	1	827.15	25.96	.001
Organizational Sanctions	1	0.73	0.02	n.s.

Source	Df	TYPE III SS	F Value	Partial r	Partial R <sup>2</sup>
Gender	1	694.06	21.78	.132***	.017***
Age	1	828.39	26.00	.144***	.021***
Tenure	1	786.06	24.67	.140***	.020***
Organizational Sanctions	1	0.73	0.02	.004	.000

Parameter	Estimate	T FOR H0:	
		$\beta = 0$	$p >  T $
Intercept	3.20	1.66	n.s.
Gender	3.85	4.67	.001
Age	-0.08	-5.10	.001
Tenure	-0.02	-4.97	.001
Organizational Sanctions	0.03	0.15	n.s.

p(< or = .05) = \*

p(< or = .01) = \*\*

p(< or = .001) = \*\*\*

## ***Hypothesis 4<sub>SUP/PLT</sub> and Hypothesis 5<sub>SUP/PLT</sub>***

The next two hypotheses examined the model of absence climate at the supervisory group level and the plant level, to see whether the findings at the individual level of analysis would be evident at higher levels of analysis. More specifically, it asked whether employees' membership in a supervisory group or a plant affected their perception of absence climate, and whether there was a relationship between those perceptions of absence climate and their absence behavior. In other words, it tested for the entity in question and not just the variable (see Dansereau et al., 1984).

Hypothesis 4<sub>SUP/PLT</sub> examined whether there were differences between averaged perceptions of absence climate across supervisory groups and plants. This was done by an ANOVA at the level of the supervisory group and the plant followed by an examination of whether the between-unit variation was significantly larger than the within-unit variation (WABA I). Hypothesis 5<sub>SUP/PLT</sub> examined whether a relationship between employees' perceptions of absence climate and absence behavior would be found in some supervisory groups and plants, but not in others. This latter inquiry involved examining Hypothesis 1<sub>IND</sub>, Hypothesis 2<sub>IND</sub> and Hypothesis 3<sub>IND</sub> with regression models first at the level of the supervisory group and then at the level of the plant.

For clarity, the results of Hypotheses 4 and Hypothesis 5 will be presented first for the supervisory group and then for the plant. Statistics for the study's variables at the level of the supervisory group and the plant are found in Appendices 4 and 5, respectively.

## **Differences on the Dimensions of Absence Climate (Hypothesis 4<sub>SUP</sub>)**

The fourth hypothesis proposed that significant differences would be found between supervisory groups on each of the three absence climate dimensions. Such differences would suggest that some supervisory groups perceive more pressure to attend than others; that some supervisory groups are more accepting of absence behavior than others; and that supervisory groups differ in their perception of consequences for good/poor attendance. Positive findings would indicate that there is some phenomenon at the level of the supervisory group that affected its members' responses, i.e. members of some groups had particularly high responses and members of other groups had particularly low responses.

Since between-supervisory group differences were hypothesized, the statistical technique of ANOVA (which is a part of WABA I) was first employed. Supervisory groups were aligned as cells within the ANOVA model, so that the group became the independent variable. Because of this procedure, the mean square variance of the model was interpreted as the between-supervisory group variance and the mean square variance of the error was the within-supervisory group variance. The degrees of freedom for a grouping variable (wholes) were  $J-1$ , where  $J$  was the number of groups. Therefore, the degrees of freedom for supervisory groups were  $(46 - 1)$  or 45 df. The degrees of freedom for the nongrouping variable (parts) were  $N-J$  or 1093 df.

The results of the initial analysis for supervisory groups are displayed in Table 4a. The significant  $F$  values for all but one variable (Employee Pressure to Attend) are indicative (based on traditional statistical methods) of a between-supervisory group effect. This would mean that membership in a supervisory group made a difference in how employ-

ees behaved (measures of absence behavior) and how employees perceived (measures of absence climate).

However, in order to confirm that a significant between-supervisory group effect existed, a second step was taken. A comparison was made of the between-unit variation (between-eta correlation,  $\eta_{BX}$ ) and the within-unit variation (within-eta correlation,  $\eta_{WX}$ ) utilizing an E ratio  $\frac{\eta_{BX}}{\eta_{WX}}$ . The results are shown in Table 4b. They indicate that the within-eta correlations are significantly larger than the between-eta correlations for both measures of absence behavior and for all of the absence climate variables. Hence, the within-unit variation better explains the total variation occurring in each of those variables as indicated by the induction of "Within" in the last column of Table 4b.

While it initially appeared that there was a significant between-supervisory group effect based on the ANOVA results (with the exception of Employee Pressure to Attend,  $F = 1.30$ ,  $p = < .0893$ ), this inference could not be made when the practical significance of the between-unit variation was also examined. When the between-unit variation was compared to the within-unit variation, it was found that the within-unit variation (within-eta correlation) was significantly larger. Hence, support for the discrimination criterion was not found. This also means that there is no support that the supervisory group is the appropriate level of aggregation for studying absence climate in this study. Since there were not both statistical and practical significant differences between supervisory groups on any of the absence climate dimensions, Hypothesis 4<sub>SUP</sub> is rejected.

**Table 4a. ANOVA for Absence Climate Dimensions: Supervisory Group**

Level of Analysis: Supervisory Group

	F Value	R-Square
<b>ABSENCE BEHAVIOR</b>		
12-Month Absence Rate	2.21	.083**
12-Month Absence Frequency	3.45	.124**
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>		
Attendance Encouragement	1.46	.057*
Management's Goal	2.61	.097**
Employee Pressure	1.30	.051
<b>EXPLANATIONS FOR ABSENCE</b>		
Rationalization	1.93	.074**
Acceptable Level of Absence	4.18	.147**
<b>CONSEQUENCES OF ABSENCE</b>		
Organizational Sanctions	2.20	.082**

Model (J-1)                    df = 45  
 Error (N-J)                  df = 1093  
 Corrected Total (N-1)      df = 1138

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*



**Table 4b. WABA I for Absence Climate Dimensions: Supervisory Group**

**Level of Analysis: Supervisory Group**

V A R I A B L E S	ETA CORRELATION		E Ratio	Induction
	Within	Between		
<b>ABSENCE BEHAVIOR</b>				
12-Month Absence Rate	.957	.289	.302	Within - 30
12-Month Absence Frequency	.936	.353	.377	Within - 30
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>				
Attendance Encouragement	.971	.238	.245	Within - 30
Management's Goal	.950	.312	.328	Within - 30
Employee Pressure	.974	.226	.232	Within - 30
<b>EXPLANATIONS FOR ABSENCE</b>				
Rationalization	.962	.271	.282	Within - 30
Acceptable Level of Absence	.924	.383	.415	Within - 30
<b>CONSEQUENCES OF ABSENCE</b>				
Organizational Sanctions	.958	.288	.301	Within - 30

**Practical Significance Criteria:**

Within - 15	E < or =	.767
Within - 30	E < or =	.577
Between - 15	E > or =	1.303
Between - 30	E > or =	1.732

## **The Absence Climate and Absence Behavior Relationship (Hypothesis 5<sub>SUP</sub>)**

The results of the ANOVA from Hypothesis 4<sub>SUP</sub> were indicative of a supervisory group effect. Significant differences were found between the supervisory groups on each absence climate variable (with the exception of Employee Pressure to Attend), as well as on each measure of absence behavior. Hypothesis 5<sub>SUP</sub> examined whether there was further evidence for a group effect. It did this by examining the extent to which the absence climate dimensions were correlated with absence behavior when supervisory group averages were utilized. Significant between-supervisory group covariation would further support the use of the supervisory group as the appropriate entity for the study of absence climate in this study.

As mentioned previously, the fifth hypothesis examined the first three hypotheses using the supervisory group as the level of analysis. In order to examine Hypothesis 1<sub>IND</sub>, Hypothesis 2<sub>IND</sub> and Hypothesis 3<sub>IND</sub> at the level of the supervisory group, two types of covariation must be measured. Within-group covariation is obtained by holding constant (partialling out) the supervisory group and then examining the amount of covariation remaining within each supervisory group. This can also be thought of as utilizing deviation scores above or below the supervisory group mean to calculate within-unit correlations and is referred to as the within-supervisory group perspective. Between-group covariation is obtained by using a weighted group average and then examining the amount of covariation between supervisory groups. This may also be thought of as using group averages to represent the characteristics of a group. Deviation scores are calculated by subtracting the overall mean from the weighted group average in order to calculate between-unit correlations. This is referred to as the between-supervisory group perspective.

In order to determine whether the within- or between-supervisory group perspective was most appropriate, a Z test was utilized.<sup>10</sup> The computational formula is:

$$Z_{BW} = \frac{Z'_B - Z'_W}{\sqrt{\frac{1}{(N-J-2)} + \frac{1}{(J-3)}}$$

(Dansereau et al., 1984: 131) The Z test indicates whether a statistically significant difference exists between the covariation for the within- and between-supervisory group perspective.<sup>11</sup> To use the Z test several preliminary steps were performed. First, the unique variance predicted by a regressor was obtained. This was accomplished by dividing the unique contribution of a regressor (the Type III Sum of Squares) by the total Sum of Squares. Second, the square root of this value was taken in order to obtain the partial correlation. The partial correlation showed the relationship between the dependent variable and the regressor after holding constant all the other independent variables of the regression model. Finally, the partial correlation was transformed ( $Z'r$ ), in order that the difference between the between-supervisory group partial correlation  $Z'_B$  and the within-supervisory group partial correlation  $Z'_W$  could be evaluated and an inference made as to whether there was a significant within- or between-supervisory group effect. The types of inference which could be made are shown in Figure 7 and explained below.

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<sup>10</sup> Edwards (1976) noted that the transformation of a correlation coefficient in the manner suggested by Fisher results in an approximately normal distribution. Thus, the difference between the two transformed correlation coefficients could be evaluated for significance by using a Z test.

<sup>11</sup> It is possible that by partialing out one variable from another, the two resulting partial correlations are no longer independent; however since the comparison of the within- and between-unit covariation is used primarily to check the impact of the control variables and not for making a decision in regards to the final between-unit inference, it is considered an appropriate application here.

**TWO VARIABLE ANALYSIS (Correlation Between Variables)**

**Research question:** Does group membership affect the relationship between the two variables?

CONDITION		INFERENCE	IMPLICATION
Between > Within	"B"	Group mean is valid to use	Group membership influences relationship
Between < Within	"W"	Group mean is <i>not</i> valid to use	Group membership does <i>not</i> influence relationship
Between = Within	"E"	Both sources are valid	Equivocal
Null	"N"	Neither source is valid	Traditional null

**Figure 7. Inferences for Two-Variable WABA Analysis**

Inferences were based on the following decision rules. If the weighted average between-supervisory group partial correlation were significantly larger than the within-supervisory group partial correlation, then systematic between-supervisory group covariation would be found (symbolized by "B"). This would be evidence of a between-supervisory group effect, in which supervisory group members responded verbally (to a set of questions) and behaviorally (by their absence behavior) in a similar manner. If the residual within-supervisory group partial correlation were significantly larger than the between-supervisory group partial correlation, then systematic within-supervisory group covariation would be found (symbolized by "W"). This would be ev-

idence of a within-supervisory group effect characterized by a wide variation of responses within each of the supervisory groups. If both of the respective partial correlations were significant, but neither were significantly larger than the other, then equivocal results would be obtained (symbolized by "E"). If neither partial correlation were found to be statistically significant or if one of the partial correlations were significant, but if neither were significantly larger than the other, then null results would be obtained (symbolized by "N").

In the following three sections the results of examining Hypotheses 1, 2 and 3 at the level of the supervisory group are discussed. Each section corresponds to one of the first three hypotheses.

### ***Organizational Pressure to Attend and Absence Behavior (Hypothesis 5:1<sub>SUP</sub>)***

An examination of Hypothesis 1<sub>IND</sub> at the level of the supervisory group investigated whether those supervisory groups whose members perceived more pressure to attend, would have fewer absences. The absence climate dimension of Organizational Pressure to Attend was measured by Attendance Encouragement, Management's Goal for Absence and Employee Pressure to Attend.

The first regression model used 12-Month Absence Rate as its dependent variable. As shown in the top portion of Table 5a, the regression using within-supervisory group scores had a significant R-square of .059 ( $F = 11.39, p < .001$ ). The R-square for the unique contribution of the absence climate variables was .007 and for the control variables it was .028. As shown in the middle section of Table 5a the regression using between-supervisory group scores had a significant R-square of .364 ( $F = 3.71, p < .001$ ).

The R-square for the unique contribution of the absence climate variables was .098 and for the control variables it was .177. The results of examining the unique contributions of the independent variables from the within- and between-supervisory group perspectives are shown in the bottom portion of Table 5a. As will be noted, the only significant group effect was for Gender, where a between-supervisory group effect was found ( $Z = 2.42, p < .05$ ). None of the measures of Organizational Pressure to Attend had either significant within- or between-supervisory group partial correlations (see the third and seventh columns labeled "Partial  $r$ "). Thus, neither Attendance Encouragement, Management's Goal for Absence, nor Employee Pressure to Attend made a significant unique contribution to the explanation of 12-Month Absence Rate and null inferences (see the tenth column labeled "Inference") were drawn for those variables.

The second regression model shown in Table 5b used 12-Month Absence Frequency as its dependent variable. The R-squares of the within- and between-supervisory group perspectives were .088 ( $F = 17.52, p < .001$ ) and .486 ( $F = 6.14, p < .001$ ), respectively. The R-square for the unique contribution of the absence climate variables was .013 and .037 for the control variables in the within-supervisory group model. For the between-supervisory-group model, the R-squares were .103 and .206 for the absence climate and control variables, respectively. Once again, the only significant between-supervisory group effect for the independent variables was Gender ( $Z = 2.63, p < .01$ ). Equivocal results were inferred for Management's Goal for Absence. This is because the partial correlation of the within-supervisory group perspective was significant ( $-.095, p < .001$ ) and the partial correlation of the between-supervisory group perspective was significant ( $-.255, p < .05$ ); however neither partial correlation was significantly larger than the other ( $Z = -1.07, n.s.$ ). Null results were inferred for both Attendance Encouragement and

**Table 5a. Regression: Organizational Pressure to Attend and 12-Month Absence Rate at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Rate      Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	6	1249.76	208.29	11.39
Error	1086	19852.34	18.28	
Corrected Total	1092	21102.10		

R<sup>2</sup> of Within-Group Model = .059 (p < .001)

R<sup>2</sup> Climate = .007      R<sup>2</sup> Control = .028

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	6	699.68	116.61	3.71
Error	39	1224.24	31.39	
Corrected Total	45	1923.910		

R<sup>2</sup> of Between-Group Model = .364 (p < .001)

R<sup>2</sup> Climate = .098      R<sup>2</sup> Control = .177

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	66.11	3.62	.056	.003	316.64	9.99	.406**	.165**	2.42*	B
Age	270.14	14.77	.113**	.013**	1.26	0.04	-.026	.001	.56	N
Tenure	258.43	14.14	.111**	.012**	21.78	0.69	-.106	.011	.03	N
Attendance Encouragement	38.21	2.09	.043	.002	53.23	1.70	-.166	.028	-1.36	N
Management's Goal	58.09	0.18	-.052*	.003	65.14	2.08	-.184	.034	-.86	N
Employee Pressure	36.93	2.02	.042	.002	68.32	2.18	.188	.036	.95	N

p (< or = .05) = \*

p (< or = .01) = \*\*

p (< or = .001) = \*\*\*

Employee Pressure to Attend. Those variables made no significant contributions from either a within- or between-supervisory group perspective.

Given the lack of significant results, the hypothesis that supervisory groups whose members perceive more pressure to attend will have fewer absences was not accepted. At the individual level of analysis this hypothesis was also rejected because only Management's Goal for Absence was significantly related to both measures of absence behavior in the hypothesized direction.

### *Explanations for Absence and Absence Behavior (Hypothesis 5:2<sub>SUP</sub>)*

An examination of the second hypothesis at the level of the supervisory group suggested that the more members of a supervisory group believe absence is acceptable, the higher their absence behavior will be. The absence climate dimension of Beliefs About Absence was measured by Rationalization and Acceptable Level of Absence. The former considered reasons or excuses individuals might use to rationalize absence; the latter examined employees' perceptions of an acceptable level of absence. Once again two different regression models were used to test this hypothesis. The first model had 12-Month Absence Rate as the dependent variable and the second had 12-Month Absence Frequency. For each regression model both a within-supervisory group and a between-supervisory group perspective were examined, in order to determine whether the hypothesized between-supervisory group effect occurred.

The results of the first regression model using 12-Month Absence Rate as the dependent variable are shown in Table 6a. The R-square of the within-supervisory group perspective was .115 ( $F = 28.22, p < .001$ ). The R-square for the absence climate variables was



**Table 5b. Regression: Organizational Pressure to Attend and 12-Month Absence Frequency at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	6	3087.43	514.57	17.52
Error	1086	31894.73	29.37	
Corrected Total	1092	34982.16		

R<sup>2</sup> of Within-Group Model = .088 (p < .001)

R<sup>2</sup> Climate = .013      R<sup>2</sup> Control = .037

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	6	2411.37	401.90	6.14
Error	39	2552.39	65.45	
Corrected Total	45	4963.77		

R<sup>2</sup> of Between-Group Model = .486 (p < .001)

R<sup>2</sup> Climate = .103      R<sup>2</sup> Control = .206

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	83.33	2.84	.049	.002	903.51	13.81	.427**	.182**	2.63**	B
Age	696.72	23.72	-.141**	.020**	92.17	1.41	-.136	.019	.03	N
Tenure	539.91	18.38	-.124**	.015**	25.61	0.39	-.072	.005	.34	N
Attendance Encouragement	49.65	1.69	.038	.001	83.90	1.28	-.130	.017	-1.09	N
Management's Goal	318.39	10.84	-.095**	.009**	322.56	5.08	-.255*	.065*	-1.07	E
Employee Pressure	101.17	3.44	.054*	.003*	102.22	1.58	.144	.021	.59	N

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*

.055 and .020 for the control variables. The R-square of the between-supervisory group perspective was .364 ( $F = 4.68$ ,  $p < .001$ ). The R-square was .102 and .153 for the absence climate and control variables respectively. The absence climate variable of Rationalization was found to make a significant unique contribution to the explanation of 12-Month Absence Rate from both the within-supervisory group and between-supervisory group perspective. However, an equivocal inference was made since despite significant within-supervisory group (partial  $r = .165$ ,  $p < .001$ ) and between-supervisory group covariation (partial  $r = .303$ ,  $p < .01$ ), neither partial correlation was significantly larger than the other ( $Z = .93$ , n.s.). The absence climate variable of Acceptable Level of Absence had significant within-supervisory group covariation (partial  $r = .167$ ,  $p < .001$ ). However, since it was not significantly larger than the between-supervisory group covariation (partial  $r = -.101$ , n.s.), null results were inferred ( $Z = -1.74$ , n.s.).

The second regression model had 12-Month Absence Frequency as its dependent variable. The results are shown in Table 6b. The R-square was .183 ( $F = 48.56$ ,  $p < .001$ ) and .523 ( $F = 8.99$ ,  $p < .001$ ) for the within- and between-supervisory group perspectives respectively. The R-square for the climate variables was .096 and .025 for the control variables in the within-supervisory group model. For the between-supervisory group model, the R-squares were .129 and .124 for the climate and the control variables respectively. The partial correlation for Rationalization from a within-supervisory group perspective was .215 ( $p < .001$ ) and from a between-supervisory group perspective was .352 ( $p < .01$ ). Both partial correlations were significant; however neither was significantly larger than the other. Equivocal results were therefore inferred. While a significant contribution was made by Acceptable Level of Absence from a within-supervisory group perspective (partial  $r = .223$ ,  $p < .001$ ) and not from a between-supervisory group

**Table 6a. Regression: Explanations for Absence and 12-Month Absence Rate at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Rate      Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	5	2424.73	484.95	28.22
Error	1087	18677.37	17.18	
Corrected Total	1092	21102.10		

R<sup>2</sup> of Within-Group Model = .115 (p < .001)

R<sup>2</sup> Climate = .055      R<sup>2</sup> Control = .020

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	5	699.43	139.89	4.68
Error	40	1224.48	29.87	
Corrected Total	45	1923.91		

R<sup>2</sup> of Between-Group Model = .364 (p < .001)

R<sup>2</sup> Climate = .102      R<sup>2</sup> Control = .153

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	41.68	2.43	.044	.002	230.58	7.72	.346**	.120**	2.05*	B
Age	113.88	6.63	-.073**	.005**	0.08	0.00	-.006	.000	.43	N
Tenure	268.39	15.62	-.113**	.013**	64.43	2.16	-.183	.033	-.46	N
Rationalization	573.09	33.36	.165**	.027**	176.25	5.90	.303**	.092**	.93	E
Acceptable Level of Absence	587.90	34.22	.167**	.028**	19.81	0.66	-.101	.010	-1.74	N

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*

perspective (partial  $r = .074$ , n.s.), the difference between the two partial correlations was not statistically significant ( $Z = -.91$ , n.s.). Hence, null results were inferred.

The second hypothesis was not accepted since there was no support for the contention that the more members of a supervisory group believe that absence is acceptable, the higher their absence behavior will be. This lack of significant findings is in contrast to the examination of this hypothesis at the individual level of analysis, where the hypothesis was supported for both measures of Explanations for Absence.

### *Consequences of Absence and Absence Behavior (Hypothesis 5:3<sub>SUP</sub>)*

An examination of the third hypothesis at the level of the supervisory group suggested that those supervisory groups whose members perceive positive consequences for attendance or negative consequences for absence will have lower absence behavior. The absence climate dimension of Consequences of Absence was measured by Organizational Sanctions.

The results of the first regression model utilizing 12-Month Absence Rate can be seen in Table 7a. The R-square of the within-supervisory group perspective was .054 ( $F = 15.76$ ,  $p < .001$ ). The R-square for the absence climate variable was .002 and for the control variables was .029. The R-square of the between-supervisory group perspective was .369 ( $F = 5.98$ ,  $p < .001$ ). The R-squares for the absence climate variable and control variables were .100 and .095 respectively. As can be seen by observing the Type III Sum of Squares (bottom portion of Table 7a), Organizational Sanctions had a significant between-supervisory group partial correlation of  $-.316$  ( $< .01$ ), which was significantly larger than the within-supervisory group partial correlation of  $.043$  (n.s.). Hence a

**Table 6b. Regression: Explanations for Absence and 12-Month Absence Frequency at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	5	6386.65	1277.33	48.56
Error	1087	28595.51	26.31	
Corrected Total	1092	34982.16		

R<sup>2</sup> of Within-Group Model = .183 (p < .001)

R<sup>2</sup> Climate = .096      R<sup>2</sup> Control = .025

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	5	2596.04	519.21	8.99
Error	40	2367.72	57.73	
Corrected Total	45	4963.76		

R<sup>2</sup> of Between-Group Model = .523 (p < .001)

R<sup>2</sup> Climate = .129      R<sup>2</sup> Control = .124

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	39.13	1.49	.033	.001	498.79	8.64	.317**	.100**	1.91	E
Age	288.77	10.98	-.091***	.008***	48.75	0.02	-.099	.010	-.05	N
Tenure	572.28	21.75	-.128***	.016***	68.33	1.18	-.117	.014	.07	N
Rationalization	613.50	61.33	.215***	.046***	616.21	10.67	.352**	.124**	.97	E
Acceptable Level of Absence	734.38	65.92	.223***	.050***	26.87	0.47	.074	.005	-.91	N

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*

between-supervisory group effect was inferred ( $Z = -2.39, p < .05$ ). This means that Organizational Sanctions explained a significant unique amount of the variance in 12-Month Absence Rate when weighted supervisory group averages were utilized.

The results for the second regression model are shown in Table 7b. The within-supervisory group perspective had an R-square of .078 ( $F = 22.95, p < .001$ ). The between-supervisory group perspective had an R-square of .523 ( $F = 11.24, p < .001$ ). The R-square for the absence climate variable was .003 and .040 for the control variables in the within-supervisory group perspective. For the between-supervisory group perspective, the R-squares were .142 and .123 for the absence climate and control variables, respectively. The results of the second regression model, which utilized 12-Month Absence Frequency as the dependent variable, are similar to the results obtained utilizing 12-Month Absence Rate as the dependent variable. Organizational Sanctions once again showed a between-supervisory group effect. This time the partial correlation of the between-supervisory group perspective was  $-.376 (p < .001)$  in contrast to the partial correlation of the within-supervisory group perspective, which was  $.056 (p < .05)$ . The Z score of  $-2.90 (p < .01)$  indicates that the between-supervisory group covariation was significantly larger than the within-supervisory group covariation and that a between-supervisory group effect was found. Thus membership in a supervisory group affects employees' perceptions of whether or not there are consequences for good and poor attendance and their absence frequency.

Given the between-supervisory group effects found for Organizational Sanctions, the hypothesis was accepted; those supervisory groups whose members perceive positive consequences for attendance and negative consequences for absence will have lower absence behavior. These results are in direct contrast to the individual level of analysis in

**Table 7a. Regression: Consequences of Absence and 12-Month Absence Rate at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Rate      Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	4	1155.99	289.00	15.76
Error	1088	19946.12	18.33	
Corrected Total	1092	21102.10		

R<sup>2</sup> of Within-Group Model = .054 (p < .001)

R<sup>2</sup> Climate = .002      R<sup>2</sup> Control = .029

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	4	709.25	177.31	5.98
Error	41	1214.67	29.63	
Corrected Total	45	1923.91		

R<sup>2</sup> of Between-Group Model = .369 (p < .001)

R<sup>2</sup> Climate = .100      R<sup>2</sup> Control = .095

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	74.18	4.05	.059*	.004*	106.29	3.59	.235	.055	1.16	N
Age	299.77	16.35	-.119***	.014***	2.99	0.10	-.039	.002	.52	N
Tenure	231.43	12.62	-.105***	.011***	73.80	2.49	-.196	.038	-.61	N
Organizational Sanctions	39.53	2.16	.043	.002	191.51	6.46	-.316**	.100**	-2.39*	B

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*

**Table 7b. Regression: Consequences of Absence and 12-Month Absence Frequency at the Supervisory Group Level of Analysis**

**Dependent Variable: 12-Month Absence Frequency Level of Analysis: Supervisory**

**WITHIN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	4	2722.15	680.54	22.95
Error	1088	32260.01	29.65	
Corrected Total	1092	34982.16		

R<sup>2</sup> of Within-Group Model = .078 (p < .001)

R<sup>2</sup> Climate = .003      R<sup>2</sup> Control = .040

**BETWEEN-GROUP MODEL**

Source	Df	Sum of Squares	Mean Square	F Value
Model	4	2595.83	648.96	11.24
Error	41	2367.94	57.75	
Corrected Total	45	4963.77		

R<sup>2</sup> of Between-Group Model = .523 (p < .001)

R<sup>2</sup> Climate = .142      R<sup>2</sup> Control = .123

**SUMMARY**

SOURCE	WITHIN				BETWEEN				CONDITION	
	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Type III SS	F-Value	Partial r	Partial R <sup>2</sup>	Z Score	Inference
Gender	97.38	3.28	.053	.003	307.19	5.32	.249*	.062*	1.30	N
Age	797.75	26.90	-.151**	.023**	109.63	1.90	-.149	.022	.01	N
Tenure	486.53	16.41	-.118**	.014**	192.73	3.34	-.197	.039	-.53	N
Organizational Sanctions	107.88	3.64	.056*	.003*	702.92	12.17	-.376***	.142***	-2.90**	B

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*



which Organizational Sanctions was found to make an insignificant contribution to the explanation of absence behavior.

### **Differences on the Dimensions of Absence Climate (Hypothesis 4<sub>PLT</sub>)**

The fourth hypothesis proposed that significant differences would be found between plants on each of the three absence climate dimensions. Positive findings would indicate that plants affected their employees' perceptions of these three dimensions. Since between-plant differences were hypothesized, the statistical technique of ANOVA was employed. The degrees of freedom for a grouping variable (wholes) were  $J-1$ , where  $J$  is the number of plants. Therefore, the degrees of freedom for plants were  $(5-1)$  or 4 df. The degrees of freedom for the nongrouping variable (parts) were  $N-J$ , where  $N$  equals the number of supervisory groups. Thus, the degrees of freedom for the supervisory groups were  $(46-5)$  or 41 df.<sup>12</sup>

The results of the analysis are shown in Table 8a. The nonsignificant  $F$  values for all the variables indicate that membership in a plant affects neither how supervisory groups behave (measures of absence behavior) nor how supervisory groups perceive measures of absence climate.

WABA I (while not a necessary procedure given the lack of significant between-plant differences) was performed in order to allow for comparisons of final inferences between

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<sup>12</sup> Since this analysis concerns an investigation of three organizational levels, the supervisory group (i.e. the mid-level) cannot be ignored. Therefore, the number of supervisory groups ( $J$ ) rather than the number of individuals ( $N$ ) is used to determine the appropriate degrees of freedom for aggregation. This is the same procedure followed in Chapter 9 of Dansereau et al. (1984).

**Table 8a. ANOVA for Absence Climate Dimensions: Plant**

	F Value	R-Square
<b>ABSENCE BEHAVIOR</b>		
12-Month Absence Rate	.199	.019
12-Month Absence Frequency	.095	.050
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>		
Attendance Encouragement	.122	.012
Management's Goal	.399	.037
Employee Pressure	.042	.004
<b>EXPLANATIONS FOR ABSENCE</b>		
Rationalization	.144	.014
Acceptable Level of Absence	.898	.080
<b>CONSEQUENCES OF ABSENCE</b>		
Organizational Sanctions	.237	.023

Model (K-1)           df = 4  
 Error (J-K)           df = 41  
 Corrected Total (J-1)   df = 45

p (< or = .05) = \*  
 p (< or = .01) = \*\*

levels. The results are displayed in Table 8b. As can be noted, where a significant inference can be made, it is that within-unit variation better explains the total variation.

### **The Absence Climate and Absence Behavior Relationship (Hypothesis 5<sub>PLT</sub>)**

The fifth hypothesis suggested that the relationship between employees' perceptions of absence climate and their absence behavior would be affected by the plant in which they worked. In order to test this hypothesis, the first three hypotheses were to be examined using the plant as the level of analysis. However, this analysis could not be completed, because there would be overdetermination of the regression equation. Overdetermination occurs when a regression model has "more regressor variables than observations" (Montgomery and Peck, 1982: 290). Since there were only four degrees of freedom available from the sample of five plants ( $N-1$  or  $5-1=4$ ) and since there were three control variables plus a minimum of one additional absence climate variable in each regression equation, overdetermination would occur.

### ***Hypothesis 6<sub>MULT</sub> - Multiple Levels of Analysis***

The sixth hypothesis asked whether relationships found at the level of the supervisory group would also be found at the level of the plant. It was hypothesized that between-unit inferences would be made at both levels. This would indicate a cross-level finding.

**Table 8b. WABA I for Absence Climate Dimensions: Plant**

**Level of Analysis: Plant**

VARIABLES	ETA CORRELATION		E Ratio	Induction
	Within	Between		
<b>ABSENCE BEHAVIOR</b>				
12-Month Absence Rate	.879	.477	.543	Within - 30
12-Month Absence Frequency	.772	.635	.823	
<b>ORGANIZATIONAL PRESSURE TO ATTEND</b>				
Attendance Encouragement	.890	.456	.513	Within - 30
Management's Goal	.784	.621	.791	Within - 30
Employee Pressure	.959	.284	.296	
<b>EXPLANATIONS FOR ABSENCE</b>				
Rationalization	.901	.434	.482	Within - 30
Acceptable Level of Absence	.672	.740	1.10	
<b>CONSEQUENCES OF ABSENCE</b>				
Organizational Sanctions	.853	.522	.613	Within - 15

**Practical Significance Criteria:**

Within - 15	E < or =	.767
Within - 30	E < or =	.577
Between - 15	E > or =	1.303
Between - 30	E > or =	1.732

Since the regression results for the examination of Hypothesis 1<sub>IND</sub>, Hypothesis 2<sub>IND</sub> and Hypothesis 3<sub>IND</sub> at the plant level of analysis could not be obtained (due to the limited degrees of freedom available from only five plants), an analysis of the relationship between each of the two measures of absence behavior and each of the six absence climate variables was performed at both the supervisory and plant levels of analysis. By examining variables individually with no controls for gender, age and tenure, there would be sufficient degrees of freedom available to determine whether the results obtained at the supervisory level of analysis would also be obtained at the level of the plant.

The methodology employed was WABA II (Dansereau et al., 1984). The comparison of within-unit and between-unit covariation followed the same procedure as in Hypothesis 5<sub>SUP</sub> with one exception. Since there were no controls imposed, correlations (in contrast to the partial correlations of Hypothesis 5<sub>SUP</sub>) were being compared. Initially, inferences were made for a single level of analysis. In other words, the appropriate inference was determined at the level of the supervisory group and at the level of the plant based on the same decision rules used under Hypothesis 5<sub>SUP</sub> and reproduced here in Figure 8 for the convenience of the reader.

Next, an examination was made of the findings from Hypothesis 4 in relationship to the findings from Hypothesis 5, in order to determine what final inference should be made at the supervisory group/plant level of analysis. The hypothesized between-unit effect can only be found if both the discrimination and the predictability criteria are met. The discrimination criteria (Hypothesis 4<sub>SUP/PLT</sub>) requires both statistical and practical significance. Thus, there must be a statistically significant between-unit difference as evidenced by the ANOVA results and the between-eta correlation must be significantly

**TWO VARIABLE ANALYSIS (Correlation Between Variables)**

**Research question:** Does group membership affect the relationship between the two variables?

CONDITION		INFERENCE	IMPLICATION
Between > Within	"B"	Group mean is valid to use	Group membership influences relationship
Between < Within	"W"	Group mean is <i>not</i> valid to use	Group membership does <i>not</i> influence relationship
Between = Within	"E"	Both sources are valid	Equivocal
Null	"N"	Neither source is valid	Traditional null

**Figure 8. Inferences for Two-Variable WABA Analysis**

larger than the within-eta correlation as evidenced by the WABA I results. The predictability criterion (Hypothesis 5<sub>SUP/PLT</sub>) requires that there be statistically significant between-unit covariation that is significantly larger than the within-unit covariation.

The requirements for a between-unit inference can also be shown by examining the WABA equation:

$$\eta_{WX}\eta_{WY}r_{WXY} + \eta_{BX}\eta_{BY}r_{BXY} = r_{TXY}$$

A between-unit inference would be made, if all three parts of the between-unit component ( $\eta_{BX}\eta_{BY}\eta_{BXY}$ ) were statistically significant and significantly larger than their corresponding within-unit parts ( $\eta_{WX}\eta_{WY}\eta_{WXY}$ ).

Finally, a comparison was made between the inference made at the lower level of analysis and the inference made at the higher level of analysis, in order to determine the relationship between the two inferences. Five multiple level inferences were possible: cross-level, level-specific, emergent, reject and inconsistent (see Dansereau et al., 1984: 48-52). These inferences are shown as column headings in Figure 9.

The first type of multiple level inference (shown in the first and second columns of Figure 9) is a cross-level inference. There are two ways in which this inference can be made. If a between-unit inference is found at the lower level and also at the higher level of analysis or a between-unit inference is found at the lower level and a within-unit inference is found at the higher level, then the former would indicate that the higher level of analysis was actually responsible for the significant between-unit lower level results. This was what was hypothesized in this study. Supervisory groups were expected to influence the relationship between employees' perceptions of absence climate and their absence behavior, that the plant would actually be the entity or unit responsible for such a relationship between perceptions and behavior.

The second multiple level inference (shown in the third and fourth columns of Figure 9) is termed "level-specific." It indicates that the relationship found between two variables is specific to (or found only at) one particular level. There are two ways in which this inference can be made. The first situation occurs when a between-unit inference is made at the lower level and an equivocal inference is made at the higher level; the sec-





ond is when a within-unit inference is made at the lower level and a null inference is made at the higher level.

The third multiple level inference is an emergent one. There are four ways in which this inference can be made as shown in the fifth through the eighth columns of Figure 9. A significant between-unit or within-unit inference is found at the higher level of analysis and either null or equivocal results are found at the lower level of analysis. An emergent result indicates that a relationship emerges at a higher level of analysis, which was not present at the level immediately preceding it.

Finally, there are eight situations in which inconsistent inferences are made. These are depicted in the ninth through the sixteenth columns of Figure 9. They indicate a lack of systematic findings. The "reject inference" (the ninth through twelfth columns) is used when there is a combination of either equivocal or null inferences made at the lower and higher levels. The inconsistent inference is made when the results have no understandable meaning.

In order to more clearly present the findings, they will be reported in two sections. The first describes the relationship between 12-Month Absence Rate and the six absence climate variables, and the second describes the relationship between 12-Month Absence Frequency and the six absence climate variables. Each section will contain a report of the results at the level of the supervisory group, a report of the results at the level of the plant and a comparison of the results between those two levels.

## 12-Month Absence Rate and the Absence Climate Variables

The upper portion of Table 9a shows the results of analyzing the relationship between 12-Month Absence Rate and each of the six absence climate variables at the level of the supervisory group. As can be noted in the last column of the upper portion of Table 9, there were two between-unit inferences (indicated by "B"). This is because significant between-supervisory group covariation, which was statistically larger than the (also significant) within-supervisory group covariation was found for the relationship between 12-Month Absence Rate and Management's Goal for Absence ( $Z = -2.13, p < .05$ )<sup>13</sup> and between 12-Month Absence Rate and Organizational Sanctions ( $Z = 2.88, p < .01$ ). An equivocal inference was found for the relationship between 12-Month Absence Rate and Rationalization. While there was significant within- and between-supervisory group covariation, neither covariation was significantly larger than the other ( $Z = 1.70, n.s.$ ). The remaining relationships between 12-Month Absence Rate and Attendance Encouragement, Employee Pressure to Attend and Acceptable Level of Absence were all null ("N").

As mentioned previously, a final inference at the supervisory group level of analysis requires that the results of Hypothesis 4 and Hypothesis 5 be considered in conjunction with one another. A final between-supervisory group inference would require that the between-eta correlations be both statistically and practically significant (examined in Hypothesis 4 utilizing ANOVA and WABA I respectively) and that the between-supervisory group correlations be significantly larger than the within-supervisory group correlations (examined in Hypothesis 5 utilizing WABA II). Since Hypothesis 4 was not

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<sup>13</sup> Appendix 6 shows the results of Hypothesis 5<sub>SUP</sub> (with controls for Gender, Age and Tenure) displayed in a format similar to that of Table 9.

**Table 9a. WABA II: 12-Month Absence Rate and the Absence Climate Variables**

ABSENCE CLIMATE VARIABLES	CORRELATIONS			CONDITION	
	Total Group	Within-Group	Between-Group	Z Score	Inference
<b>SUPERVISORY GROUP</b>					
<b>12-Month Absence Rate, and</b>					
Attendance Encouragement	.023	.038	-.173	.89	N
Management's Goal	-.102**	-.074**	-.384***	-2.13*	B
Employee Pressure	.058**	.056**	.093	.24	N
Rationalization	.234***	.216***	.449***	1.70	E
Acceptable Level of Absence	.210***	.212***	.204	-.05	N
Organizational Sanctions	.017	.061**	-.469***	2.88**	B
<b>PLANT</b>	<b>Total Plant</b>	<b>Within-Plant</b>	<b>Between-Plant</b>	<b>Z Score</b>	<b>Inference</b>
<b>12-Month Absence Rate, and</b>					
Attendance Encouragement	-.173	-.166	.199	.05	N
Management's Goal	-.384***	-.329**	-.530	-.34	N
Employee Pressure	.093	-.009	.740*	1.30	N
Rationalization	.449***	.310**	.986***	2.98**	B
Acceptable Level of Absence	.204	.354**	-.014	-.49	N
Organizational Sanctions	-.469***	-.344**	-.852**	1.25	N

**Degrees of Freedom**

Within( N-J)  
Between (J)  
Total (N)

p (< or = .05) = \*

**Supervisory Group**

df = 1093  
df = 46  
df = 1139

p (< or = .01) = \*\*

**Plant**

df=41  
df= 5  
df=46

p (< or = .001) = \*\*\*

accepted, the inferences are quite straight forward. There are no between-supervisory group final inferences because both Hypothesis 4 and Hypothesis 5 must both be accepted in order to provide evidence that the supervisory group is the correct level of analysis in this study. Instead, the final inferences are all null as shown in the last column of the upper portion of Table 9b.

At the level of the plant there was only one significant between-plant finding, which occurred utilizing WABA II. A between-plant inference was made for the relationship between 12-Month Absence Rate and Rationalization (see last column of the bottom portion of Table 9a). This is because the between-plant covariation was significantly larger than the within-plant covariation ( $Z = 2.98, p < .01$ ). All the other relationships utilizing WABA II were null.

Table 9b shows the results of Hypothesis 4 and Hypothesis 5 in conjunction with one another. Since Hypothesis 4 was rejected at the level of the plant (there were no significant between-eta correlations as a result of the ANOVA analysis and consequently it was not actually necessary to compute within-eta correlations), all the final inferences were null.<sup>14</sup>

Table 10 compares the findings at the supervisory and plant levels of analysis for the relationship between 12-Month Absence Rate and each of the six absence climate variables in order to make appropriate multiple level inferences. Cross-level inferences had been hypothesized for all of the relationships. A cross-level inference in this case means that any significant between-unit inference found at the level of the supervisory group would also be found at the level of the plant. In other words, it was hypothesized that

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<sup>14</sup> See Appendix 7 for a summary of the within- and between-unit components of the WABA equation utilizing 12-Month Absence Rate as the dependent variable.

**Table 9b. Summary of Inferences Related to 12-Month Absence Rate**

VARIABLES	INFERENCES			
	H4 <sub>SUP</sub> ANOVA	H4 <sub>SUP</sub> WABA I	H5 <sub>SUP</sub> * WABA II	FINAL
<b>SUPERVISORY GROUP</b>				
X <sub>1</sub> - Attendance Encouragement	B	W	N	N
X <sub>2</sub> - Management's Goal	B	W	B	N
X <sub>3</sub> - Employee Pressure	N	W	N	N
X <sub>4</sub> - Rationalization	B	W	E	N
X <sub>5</sub> - Acceptable Level of Absence	B	W	N	N
X <sub>6</sub> - Organizational Sanctions	B	W	B	N
<b>PLANT</b>	H4 <sub>PLT</sub> ANOVA	H4 <sub>PLT</sub> WABA I	H5 <sub>PLT</sub> * WABA II	FINAL
X <sub>1</sub> - Attendance Encouragement	N	W	N	N
X <sub>2</sub> - Management's Goal	N	N	N	N
X <sub>3</sub> - Employee Pressure	N	W	N	N
X <sub>4</sub> - Rationalization	N	W	B	N
X <sub>5</sub> - Acceptable Level of Absence	N	N	N	N
X <sub>6</sub> - Organizational Sanctions	N	W	N	N

\* Results without controls are used in order to make comparisons between the supervisory groups and plants.

any significant relationships among variables found at the level of the supervisory group would also be found at the level of the plant. This would be indicated by all "yes" responses in the first column of Table 10. In fact *no* cross-level inferences could be found for any of the relationships between 12-Month Absence Rate and any of the six absence climate variables. This is because there were no significant final inferences found at either the level of the supervisory group or the plant.

### **12-Month Absence Frequency and the Absence Climate Variables**

As can be seen in the last column of the upper portion of Table 11, three between-unit inferences were found at the level of the supervisory group. Specifically, the between-supervisory group covariation was statistically larger than the (also significant) within-supervisory group covariation for the relationships between 12-Month Absence Frequency and each of the following three variables: Management's Goal for Absence ( $Z = -2.71, p < .05$ ); Rationalization ( $Z = 2.31, p < .05$ ); and Organizational Sanctions ( $Z = 3.37, p < .01$ ).<sup>15</sup> The relationship between Acceptable Level of Absence and 12-Month Absence Frequency was equivocal because, while there was significant within-and between-supervisory group covariation, neither correlation was statistically larger than the other. The relationship between 12-Month Absence Frequency and both Attendance Encouragement and Employee Pressure to Attend showed null results.

Table 11b shows the results of Hypothesis 4 and Hypothesis 5 considered in conjunction with one another. While there was statistically significant between-supervisory group

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<sup>15</sup> Appendix 8 shows the results of Hypothesis 5<sub>SUP</sub> (with controls for Gender, Age and Tenure) displayed in a format similar to that of Table 10.

**Table 10. Multiple Levels of Analysis for 12-Month Absence Rate Utilizing WABA II**

**Dependent Variable: 12-Month Absence Rate**

**Level of Analysis: Supervisory Group and Plant**

VARIABLES	I N F E R E N C E S				
	CROSS-LEVEL	LEVEL-SPECIFIC	EMERGENT	REJECT	INCONSISTENT
Attendance Encouragement	-	-	-	YES	-
Management's Goal	-	-	-	YES	-
Employee Pressure	-	-	-	YES	-
Rationalization	-	-	-	YES	-
Acceptable Level of Absence	-	-	-	YES	-
Organizational Sanctions	-	-	-	YES	-

YES indicates an inference was made between the supervisory and plant levels of analysis

variation (see the first column labeled "ANOVA"), it was not larger than the statistically significant within-supervisory group variation (see the second column labeled "WABA I"), hence Hypothesis 4 was rejected. This means that despite the significant between-supervisory group covariation for Management's Goal for Absence, Rationalization and Organizational Sanctions (see column labeled "WABA II"), the final inference is null. Both Hypothesis 4<sub>SUP</sub> and Hypothesis 5<sub>SUP</sub> would have had to be accepted in order to have had a final between-supervisory group inference.

**Table 11a. WABA II: 12-Month Absence Frequency and the Absence Climate Variables**

ABSENCE CLIMATE VARIABLES	CORRELATIONS			CONDITION	
	Total Group	Within-Group	Between-Group	Z Score	Inference
<b>SUPERVISORY GROUP</b>					
<b>12-Month Absence Frequency, and</b>					
Attendance Encouragement	.012	.030	-.189	1.04	N
Management's Goal	-.163***	-.122***	-.500***	-2.71*	B
Employee Pressure	.067**	.071**	.026	-.29	N
Rationalization	.304***	.277***	.567***	2.31*	B
Acceptable Level of Absence	.297***	.279***	.414***	.99	E
Organizational Sanctions	.015	.077**	-.538***	3.37**	B
<b>PLANT</b>					
<b>12-Month Absence Frequency, and</b>					
Attendance Encouragement	-.189	-.208	-.159	-.07	N
Management's Goal	-.500***	-.352**	-.716*	-.73	N
Employee Pressure	.026	-.115	.615	.83	N
Rationalization	.567***	.453***	.913**	1.45	E
Acceptable Level of Absence	.414***	.492***	.338	-.26	N
Organizational Sanctions	-.538***	-.344**	-.938**	1.88	E

Degrees of Freedom	Supervisory Group	Plant
Within( N-J)	df = 1093	df = 41
Between (J)	df = 46	df = 5
Total (N)	df = 1139	df = 46
p (< or = .05) = *	p (< or = .01) = **	p (< or = .001) = ***



**Table 11b. Summary of Inferences Related to 12-Month Absence Frequency**

VARIABLES	INFERENCES			
SUPERVISORY GROUP	H4 <sub>SUP</sub> ANOVA	H4 <sub>SUP</sub> WABA I	H5 <sub>SUP</sub> <sup>*</sup> WABA II	FINAL
X <sub>1</sub> - Attendance Encouragement	B	W	N	N
X <sub>2</sub> - Management's Goal	B	W	B	N
X <sub>3</sub> - Employee Pressure	N	W	N	N
X <sub>4</sub> - Rationalization	B	W	B	N
X <sub>5</sub> - Acceptable Level of Absence	B	W	E	N
X <sub>6</sub> - Organizational Sanctions	B	W	B	N
PLANT	H4 <sub>PLT</sub> ANOVA	H4 <sub>PLT</sub> WABA I	H5 <sub>PLT</sub> <sup>*</sup> WABA II	FINAL
X <sub>1</sub> - Attendance Encouragement	N	W	N	N
X <sub>2</sub> - Management's Goal	N	N	N	N
X <sub>3</sub> - Employee Pressure	N	W	N	N
X <sub>4</sub> - Rationalization	N	W	E	N
X <sub>5</sub> - Acceptable Level of Absence	N	N	N	N
X <sub>6</sub> - Organizational Sanctions	N	W	E	N

\* Results without controls are used in order to make comparisons between the supervisory groups and plants.

At the plant level of analysis there were no significant within- or between-plant inferences for the relationships between 12-Month Absence Frequency and any of the six absence climate variables. Two of the findings were equivocal, i.e. the relationship between 12-Month Absence Frequency and Rationalization and the relationship between 12-Month Absence Frequency and Organizational Sanctions. The remaining four relationships were null.

Since Hypothesis 4<sub>PLT</sub> and Hypothesis 5<sub>PLT</sub> were both rejected at the level of the plant, i.e. there were no significant between-plant inferences made (see the first, second, and third columns labeled "ANOVA," "WABA I" and "WABA II" in the bottom section of Table 11b), the final inferences for the plant level of analysis are very clear. They are all null.<sup>16</sup>

An examination of multiple levels of analysis, i.e. analyzing the results found at the level of the supervisory group with those found at the level of the plant, is shown in Table 12. As can be noted from the first column labeled "cross-level," the hypothesized cross-level inferences did not occur. This is because there were no significant final between-unit inferences made at either the level of the supervisory group or the level of the plant.

Cross-level inferences had been hypothesized for all of the relationships between the two measures of absence behavior and the six absence climate variables. No cross-level inferences were found. Consequently, Hypothesis 6<sub>MULT</sub> was not accepted.

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<sup>16</sup> See Appendix 9 for a summary of the within- and between-unit components of the WABA equation utilizing 12-Month Absence Frequency as the dependent variable.

**Table 12. Multiple Levels of Analysis for 12-Month Absence Frequency Utilizing WABA II**

**Dependent Variable: 12-Month Absence Frequency**

**Level of Analysis: Supervisory Group and Plant**

VARIABLES	I N F E R E N C E S				
	CROSS-LEVEL	LEVEL-SPECIFIC	EMERGENT	REJECT	INCONSISTENT
Attendance Encouragement	-	-	-	YES	-
Management's Goal	-	-	-	YES	-
Employee Pressure	-	-	-	YES	-
Rationalization	-	-	-	YES	-
Acceptable Level of Absence	-	-	-	YES	-
Organizational Sanctions	-	-	-	YES	-

YES indicates an inference was made between the supervisory and plant levels of analysis

### ***Summary of the Results for the Control Variables***

The three variables controlled in this study were Gender, Age and Tenure. The unique contribution of each of the control variables was determined by examining the Type III Sum of Squares from Tables 1a through 3b (individual level of analysis) and Tables 5a

through 7b (supervisory group level of analysis) for the control variables. The results at the individual level of analysis will be reported and discussed first, followed by the results at the level of the supervisory group.

### **Individual Level of Analysis**

Each of the control variables made a significant unique contribution to the explanation of both measures of absence behavior at the individual level of analysis. The specific findings for each of the three absence climate dimensions are given in the following three paragraphs.

In the model examining Organizational Pressure to Attend and utilizing 12-Month Absence Rate as the dependent variable, the unique contribution of each of the control variables was at least twice that of the one significant absence climate variable, Management's Goal for Absence (Type III SS = 110.41,  $p < .01$ ).<sup>17</sup> Utilizing 12-Month Absence Frequency as the dependent variable, the unique contributions of Gender (Type III SS = 654.20,  $p < .001$ ), Age (Type III SS = 765.13,  $p < .001$ ) and Tenure (Type III SS = 685.68,  $p < .001$ ) were similar to the significant contribution made by the absence climate variable, Management's Goal for Absence (Type III SS = 602.86,  $p < .001$ ). The significant contribution made by Employee Pressure to Attend was much smaller (Type III SS = 113.64,  $p < .05$ ) and in the wrong direction.

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<sup>17</sup> As in Hypotheses 1, 2 and 3 for the absence climate variables, it is the Type III Sum of Squares, i.e. Partial F Test, which was used to assess whether the control variables made a significant unique contribution to the explanation of absence behavior.

The models examining the absence climate dimension of Explanations for Absence and utilizing 12-Month Absence Rate and 12-Month Absence Frequency as the dependent variables had some very different results from the dimension reported above (i.e. Organizational Pressure to Attend). While all of the control variables again made significant contributions to the explanation 12-Month Absence Rate (Type III SS for Gender= 175.90,  $p < .01$ , Age= 112.22,  $p < .05$ , Tenure= 281.09  $p < .001$ ), the absence climate variables of Rationalization and Acceptable Level of Absence made the larger unique contributions (Type III SS of Rationalization= 717.90,  $p < .001$ , Acceptable Level of Absence= 499.60,  $p < .001$ ). They accounted for 42.7 percent of the model's variance, whereas the control variables together accounted for only 20.0 percent. Similar results were found utilizing 12-Month Absence Frequency as the dependent variable. Explanations for Absence accounted for 48.0 percent of the model's variance in contrast to the control variables, which together account for 15.7 percent.

The regression models examining the absence climate dimension of Consequences of Absence and utilizing 12-Month Absence Rate and 12-Month Absence Frequency respectively as the dependent variables also showed striking differences with regard to the contributions made by the control variables and the absence climate variable, which in this case was Organizational Sanctions. In the case of 12-Month Absence Rate each control variable made approximately the same unique contribution (Type III SS for Gender= 313.53,  $p < .001$ , Age= 276.95,  $p < .001$  and Tenure= 320.29,  $p < .001$ ). In contrast, the Type III Sum of Squares of Organizational Sanctions was 1.99, n.s. In the case of 12-Month Absence Frequency the control variables again made approximately the same contribution (Type III SS of Gender= 694.06,  $p < .001$ , Age= 828.39,  $p < .001$  and Tenure= 786.06,  $p < .001$ ). The Type III Sum of Squares of Organizational Sanctions is only .73, n.s.

The following summary about the control variables of Gender, Age and Tenure are made at the individual level of analysis. First, the control variables accounted for the majority of variance in the regression models examining the dimension of Organizational Pressure to Attend (although there was still a significant relationship between Organizational Pressure to Attend and absence behavior after exercising controls). Second, in models examining Explanations for Absence, it was the absence climate variables which accounted for the majority of variance rather than the control variables. However, the controls were important and should be retained. Third, the control variables accounted for *practically all* of the total variance in the regression models examining Consequences of Absence. Hence, there was no significant relationship between Consequences of Absence and absence behavior after exercising controls for Gender, Age and Tenure at the individual level of analysis.

In summary, despite varying levels of unique contribution, the control variables were significant in all six of the models investigating absence climate at the individual level of analysis. The finding that women were absent more frequently than men is consistent with previous research (Hedges, 1973; Kleine, 1986). Currently there are numerous inconsistencies reported in the absence literature regarding the directionality of the age and absence behavior relationship (see reviews by Muchinsky, 1977; Nicholson et al., 1977; & Steers & Rhodes, 1978). A recent study by Mayes and Urquhart (1986), however, reported a consistent negative relationship between age and absence. This study's finding that age and absence are inversely related (regardless of the absence measure used) adds further support that older employees are absent less often than younger ones. This study also finds support for an inverse relationship between tenure and absence behavior, which is consistent with the majority of previous studies on the topic (see reviews by Nicholson et al., 1977; Steers & Rhodes, 1978; 1984).

## Supervisory Group Level of Analysis

While the results for all three of the control variables (Gender, Age and Tenure) were significant at the individual level of analysis, *only* the control variable of Gender showed significant results at the level of the supervisory group. Between-group effects were found for Gender in the regression models examining the absence climate dimension of Organizational Pressure to Attend and utilizing either 12-Month Absence Rate ( $Z = 2.42, p < .05$ ) or 12-Month Absence Frequency ( $Z = 2.63, p < .01$ ) as the dependent variables. A between-supervisory group effect was also found for Gender in the regression model examining the absence climate dimension of Explanations for Absence and utilizing 12-Month Absence Rate ( $Z = 2.05, p < .05$ ). Equivocal results were found for the relationship between Gender and 12-Month Absence Frequency ( $Z = 1.91, n.s.$ ). In the case of the models examining Consequences of Absence and utilizing 12-Month Absence Rate and 12-Month Absence Frequency as the dependent variables, the results were null ( $Z = 1.16, n.s.$  and  $Z = 1.30, n.s.$ , respectively).

It is noteworthy that the significant between-supervisory group effects for Gender were found for only those two dimensions of absence climate (Organizational Pressure to Attend and Explanations for Absence), which were found to be more appropriately studied at the individual level of analysis. The third dimension, Consequences of Absence for which some evidence suggested that it would be more appropriately studied at the level of the supervisory group, showed no significant between-supervisory group effect for Gender. Hence, Gender had a more powerful impact on perceptions of pressure to attend and explanations for absence (both of which may be more affected by sex role pressures) than on perceptions of consequences of attendance (which may be more related to work role issues).

Gender differences between supervisory work groups were not unexpected. Gender differences in absence have been repeatedly shown (Hedges, 1973; Klein, 1986; Leigh, 1983; Markham et al., 1982) and some of the supervisory groups in this study were comprised primarily of men (e.g. cutters), while others were comprised primarily of women (e.g. sewers). The lack of significant inferences for Age and Tenure at the level of the supervisory group (but some significant within-group covariation) would indicate that supervisory groups are comprised of employees of varying age and tenure and that the relationship between age and absence behavior or between tenure and absence behavior was not affected by the supervisory group to which employees belonged.

The findings for Hypothesis 6<sub>MULT</sub> clearly show the importance of controlling for variables which are not the primary construct being examined. Significant between-supervisory group effects were found for the relationships between Management's Goal for Absence and 12-Month Absence Rate ( $Z = -2.13, p < .05$ ) and Management's Goal for Absence and 12-Month Absence Frequency ( $Z = -2.71, p < .05$ ), when controls for Gender, Age and Tenure were *not* imposed. After controlling for Gender, Age and Tenure (Hypothesis 5<sub>SUP</sub>) the between-supervisory group covariation dropped for the relationship between Management's Goal for Absence and 12-Month Absence Rate from  $r = -.384, p < .001$  to partial  $r = -.18, n.s.$  Likewise the between-supervisory group covariation for the relationship between Management's Goal for Absence and 12-Month Absence Frequency dropped from  $r = -.500, p < .001$  to partial  $r = -.26, p < .05$ . Similarly, between-supervisory group covariation was found for the relationship between Rationalization and 12-Month Absence Frequency ( $Z = 2.31, p < .05$ ), which was *not* found when controls were imposed. The drop in this case was from  $r = .567, p < .001$  to partial  $r = .352, p < .01$ .



## ***Summary of Results for Absence Behavior***

This study employed two measures of absence behavior, 12-Month Absence Rate and 12-Month Absence Frequency. Both measures were based on employee attendance records of the six-month time period prior to and the six-month time period following the administration of the survey instrument. In other words, the total twelve months used to calculate the absence measures were centered at the time of the questionnaire administration. The 12-Month Absence Rate was calculated by dividing the number of days an employee was absent by the number of days the employee could have worked in the twelve month time period. The 12-Month Absence Rate was thus a measure of absence duration (based on the total number of days of work lost divided by scheduled workdays). The 12-Month Absence Frequency was calculated by simply adding the number of absence incidents during the twelve months. It was therefore a measure of the number of absence incidents. (Each incident could be one or several days in length.)

A comparison of the R-squares utilizing 12-Month Absence Rate as the dependent variable and then 12-Month Absence Frequency is shown in Table 13. The data in Table 13 allow an examination of whether absence climate variables accounted for more variance in the duration measure of absence behavior (12-Month Absence Rate), than in the frequency measure of absence behavior (12-Month Absence Frequency). Results for 12-Month Absence Rate at the individual level of analysis are shown in the first column and those at the supervisory group level of analysis are shown in the second and third columns. Results for 12-Month Absence Frequency are shown in the fourth column for the individual level of analysis and in columns 5 and 6 for the analysis at the level of the

supervisory group. R-squares for both within- and between-supervisory group perspectives are shown.

As can be seen from Table 13, each of the regression models at the individual level of analysis had a significant  $R^2$ , regardless of whether the 12-Month Absence Rate or the 12-Month Absence Frequency was used as the dependent variable. The regression model examining the relationship between 12-Month Absence Frequency and Explanations for Absence had the largest  $R^2$  (.209,  $p < .001$ ). The regression model examining the relationship between 12-Month Absence Rate and Consequences of Absence had the smallest  $R^2$  (.064,  $p < .001$ ). More of the variance in 12-Month Absence Frequency was accounted for by each of the respective absence climate dimensions, than was accounted for in 12-Month Absence Rate.

For each of the regression models at the level of the supervisory group, (see Table 13, the second and third columns, as well as the fifth and sixth columns) both within- and between-supervisory group covariation were significant. While a Z test could not be performed to determine whether the between-supervisory covariation was larger than the within-supervisory group covariation (since R-squares rather than correlations were being examined), it can be noted that regardless of which perspective (within or between) was used, the amount of variance explained was always larger for 12-Month Absence Frequency than for 12-Month Absence Rate for each of the regression equations.

Based on both the theoretical work of Smulders (1980), who found that duration of absence and frequency of absence were conceptually different, and on the common practice of absence researchers, who have measured absence by its duration and/or frequency (Steers & Rhodes, 1984), both types of absence measures were utilized in this study. The

**Table 13. R-Square of Regression Models at the Individual and Supervisory Group Levels of Analysis**

DIMENSIONS OF ABSENCE CLIMATE	12-Month Absence Rate			12-Month Absence Frequency		
	Levels of Analysis			Levels of Analysis		
	Individual	Supervisory		Individual	Supervisory	
		Within	Between		Within	Between
Organizational Pressure to Attend	.072***	.059***	.364**	.114***	.088***	.486***
Explanations for Absence	.124***	.115***	.364**	.209***	.183***	.523***
Consequences of Absence	.064***	.054***	.369***	.096***	.078***	.523***

p (< or = .05) = \*  
 p (< or = .01) = \*\*  
 p (< or = .001) = \*\*\*

finding that absence climate variables accounted for more of the variance in a measure of absence frequency than in a measure of absence duration would indicate that the frequency was more closely related to attitudinal variables.

Since absence frequency is a measure of the number of absence incidents or events (regardless of duration), then it is a measure of occasional absences. Such absences are generally the most troublesome to management, because they are the least predictable. In contrast, if a person were sick, and if the sickness lasted several days or weeks, then steps could be taken to adjust to the absence of the employee. While frequency of absence does *not* exclude sickness resulting from illness (since such sickness might only last a day), absence frequency may be measuring a type of absence that is more subject to

attitudinal variation. As mentioned previously, Chadwick-Jones et al. (1982) did find differences between industries regarding the justifiability of an occasional day off. If a company has an absence problem reflected in a high absence frequency, rather than a high absence rate, then such a finding could be indicative of attitudes legitimizing occasional absence. Problem solving by management could focus on eliminating occasional absences through use of reinforcement techniques or by identification of the reasons behind casual absences in order to find preventative solutions. In any case, the finding that one type of absence measure is more closely related to attitudes than another suggests that some types of absence may be more susceptible to attitudinal change.

## *Summary*

Chapter 4 presented the results of the initial psychometric analyses based on data from all five plants. This resulted in some change in the way the measures of absence climate were operationalized. Next, it provided the results of examining the six hypotheses. Then, it reported and discussed the results of the control variables and the two measures of absence behavior.

## **Chapter 5. Discussion and Conclusions**

### ***Overview***

This chapter discusses the results of the hypotheses reported in the previous chapter. The discussion is organized around the three absence climate dimensions, Organizational Pressure to Attend, Explanations for Absence, and Consequences of Absence. The two overall research questions explored are (1) whether there is empirical support for absence climate as a predictor of absence behavior and (2) which level of analysis is most appropriate for such a study. Conclusions related to each of the absence climate dimensions are summarized after the discussion for each dimension. The chapter closes by assessing whether the purposes of the study have been accomplished, indicating the study's limitations and presenting theoretical and practical implications of the research.

## ***Organizational Pressure to Attend***

As mentioned previously, Organizational Pressure to Attend was conceptualized as the external pressure within the organization placed on employees for good attendance. This dimension focused on the general support or encouragement of good attendance by management, the specific goals for attendance established by management, and the pressure for attendance placed on employees by their co-workers. It was comprised of the following absence climate variables: Attendance Encouragement, Management's Goal for Absence, and Employee Pressure to Attend. A summary of the results for Organizational Pressure to Attend can be found in Table 14. "Yes" indicates support for the Hypothesis under consideration, and "No" indicates a lack of significant findings. The following paragraphs discuss the results for each of the hypotheses related to Organizational Pressure to Attend.

*Hypothesis 1<sub>IND</sub>* examined whether employees who perceived more pressure to attend had fewer absences. As can be seen from the first column of Table 14, Hypothesis 1<sub>IND</sub> was rejected. No significant relationship was found between management's general encouragement of good attendance (Attendance Encouragement) and employees' absence behavior. In addition, while a significant relationship was found between Employee Pressure to Attend and absence behavior, it was *not* in the hypothesized direction. Employees who perceived a lot of pressure by their co-workers had both a higher absence rate and absence frequency. Some support was suggested in that those employees who perceived management as setting high standards (Management's Goal for Absence) had lower absence rates and fewer absence incidents.

**Table 14. Summary of Results for the Absence Climate Dimension of Organizational Pressure to Attend**

**ORGANIZATIONAL PRESSURE TO ATTEND**

The following is a summary of the results from the hypotheses related to Organizational Pressure to Attend. Subscripts by the hypothesis number are used to indicate the level of analysis being considered. Thus, H<sub>IND</sub> refers to the Individual, H<sub>SUP</sub> refers to the Supervisory Group, H<sub>PLT</sub> refers to the Plant and H<sub>MULT</sub> refers to Multiple Levels of Analysis.

	HYPOTHESES					
	H1 <sub>IND</sub>	H4 <sub>SUP</sub>	H5:1 <sub>SUP</sub>	H4 <sub>PLT</sub>	H5:1 <sub>PLT</sub>	H6 <sub>MULT</sub>
<b>12-Month Absence Rate</b>						
Attendance Encouragement	NO	NO	NO	NO	-	NO
Management's Goal	YES	NO	NO	NO	-	NO
Employee Pressure	NO	NO	NO	NO	-	NO
<b>12-Month Absence Frequency</b>						
Attendance Encouragement	NO		NO		-	NO
Management's Goal	YES		NO		-	NO
Employee Pressure	NO		NO		-	NO
<b>SUMMARY</b>	Reject	Reject	Reject	Reject	-	Reject

**YES**— Results *are* as hypothesized

**NO** — Results are *not* as hypothesized

H1<sub>IND</sub> suggests that employees perceiving more pressure to attend have fewer absences.

H4<sub>SUP/PLT</sub> suggests that there are significant differences between supervisory groups(plants) on the absence climate dimensions.

H5:1<sub>SUP/PLT</sub> suggests that supervisory groups(plants) whose members perceive more pressure to attend, will have fewer absences.

H6<sub>MULT</sub> suggests that relationships found at the level of the supervisory group will also be found at the level of the plant.

The fact that Management's Goal for Absence (and not Attendance Encouragement) showed significant results at the individual level of analysis might be understood in the context of goal setting theory. Goal setting theory (Locke et al., 1981) indicates that when goals are difficult and specific, then performance is higher. Management's Goal for Absence was assessed by an item which provided a range of *specific* goals (i.e. survey respondents chose from goals of perfect attendance to being absent 7 days a year or more). Those employees who perceived management's goal as more difficult had fewer absences. In contrast, the scale identified as Attendance Encouragement asked employees their perception of management's general attitude toward good attendance (i.e. to what extent did their manager, personnel administrator or supervisor encourage good attendance). While Attendance Encouragement did identify a general goal of management, it lacked the specificity and implied difficulty found in Management's Goal for Absence.

The significant unique contribution ( $p < .05$ ) made by Employee Pressure to Attend to the explanation of both 12-Month Absence Rate and 12-Month Absence Frequency, attests to the importance of co-worker pressure. Such a significant finding is in accord with Ilgen and Hollenback (1977), who found that co-worker pressure correlated at .20 ( $p < .01$ ) with unexcused absence. The positive relationship may indicate that employees who perceive more pressure to attend are responding to co-worker pressure resulting from their poor attendance. Thus, the pressure to attend might follow absence behavior, rather than precede it. A longitudinal study would, however, be necessary for assessing the direction of this relationship. Few studies have considered the effect of co-workers on employee attendance, even though Steers and Rhodes (1978) identified it as part of their employee attendance model. Chadwick-Jones et al. (1982) have generated new in-



terest in this variable by their findings that group membership does affect absence behavior.

What happens to the inference made above (i.e. that there is some support for a relationship between organizational pressure to attend and individual employees' absence behavior) when an explicit consideration of supervisory groups is added? This question requires that both Hypothesis 4<sub>SUP</sub> and Hypothesis 5<sub>SUP</sub> be examined. The former considers differences between supervisory groups; the latter considers whether those supervisory groups which perceive pressure to attend have higher absence behavior. Joyce and Slocum (1984) stated that both criteria (finding differences between groups and finding a relationship between the climate measure and the predicted variable) are necessary in order to determine whether the appropriate aggregation has been chosen. The results of Hypothesis 4<sub>SUP</sub> and Hypothesis 5<sub>SUP</sub> are discussed below.

*Hypothesis 4<sub>SUP</sub>*<sup>18</sup> examined whether there were significant differences between supervisory groups for the three variables comprising Organizational Pressure to Attend. Hypothesis 4<sub>SUP</sub> was rejected (see bottom of column 2 in Table 14). While significant between-supervisory group differences were found ( $p < .05$ ) for Attendance Encouragement and Management's Goal for Absence using traditional statistical analysis (ANOVA), practical significance using WABA I was not found. Significant findings at both steps would be required for the discrimination criterion to be met.

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<sup>18</sup> A discussion of Hypothesis 4<sub>SUP</sub>, rather than Hypothesis 2<sub>IND</sub> follows because all of the hypotheses related to Organizational Pressure to Attend are discussed first. Hypothesis 2<sub>IND</sub> relates to the second dimension of absence climate (Explanations for Absence). It is discussed after Organizational Pressure to Attend. Hypothesis 3<sub>IND</sub> relates to the third dimension of absence climate (Consequences of Absence). It is discussed after reviewing the hypotheses related to Explanations for Absence.

There are two general reasons why the finding of statistically significant differences between supervisory groups for all of the absence climate variables except Employee Pressure to Attend (which just failed to show significance,  $p < .0893$ ) is not surprising. First, leadership theory suggests (Fleishman, 1953, 1957; Likert, 1961, Yukl, 1981) that different leader behaviors affect employees' attitudes and behavior. Second, social exchange theory (Homans, 1950, 1958) indicates that groups influence their members to conform by providing desired reinforcers. Both of these reasons could result in members of supervisory groups holding similar attitudes within the group and yet different attitudes from members of other supervisory groups.

The question might be asked why the between-supervisory group differences occurred *specifically* for Attendance Encouragement and Management's Goal for Absence. This can be understood by examining more closely the first reason stated above, the effect of leader behavior. Since employees' supervisors are frequently viewed by employees as the symbol of management, employees' impressions of plant management would be influenced by the unique style of their work group supervisor. Thus, different leader styles (e.g. task-oriented versus person-oriented) might send different signals to group members about the importance of management's expectations and support for good attendance. Also, while some supervisors would presumably establish specific attendance goals, other supervisors would not consider doing such, as there was no company directive or training encouraging goal setting. Hence, employees of different supervisory groups would be expected to have different perceptions of how supportive management was of good attendance (Management's Encouragement of Attendance) and what management's specific goals for attendance were (Management's Goal for Attendance) based on experience with their own supervisor.

It might also be asked why Employee Pressure to Attend failed (barely,  $p < .0893$ ) to show significant between-supervisory group differences. This could have been a result of inadequate measurement of the construct. As the reader will recall, this was a one item measure and therefore its reliability cannot be assessed.

The lack of practical significance would indicate that there is still a great deal of individual variation occurring within the supervisory group. If these supervisory groups were ones which allowed for more employee interaction, then more internal consistency might have been found. The employees, however, spend much of their time working independently at their particular sewing operation. Hence, employees might not have shared their perceptions and ideas with one another, nor consequently have been reinforced for having similar ideas to their co-workers, and thus clear differences between supervisory groups would not develop.

*Hypothesis 5:  $I_{sup}$*  examined the same issue as Hypothesis 1, but at the level of the supervisory group rather than the individual. In other words, it asked whether entire supervisory groups whose members perceived more pressure to attend would have fewer absences. It was rejected as shown at the bottom of the third column in Table 14. This is because all of the relationships between the three measures of Organizational Pressure to Attend and the two measures of absence behavior (after controlling for Gender, Age and Tenure) were null at the level of the supervisory group.

This lack of significant findings may be due to the following reason. If members of a supervisory group were unaware of any encouragement by management for *supervisory groups* to improve their attendance and if group members were unaware of any attend-

ance goals set by management for *supervisory groups* to accomplish, then the relationship between Organizational Pressure to Attend and absence behavior would likely fail to materialize at the level of the supervisory group. This is because there was no awareness of (and perhaps no existing) organizational pressure to attend at the level of the supervisory group.

The finding that *both* Hypothesis 4<sub>SUP</sub> and Hypothesis 5:1<sub>SUP</sub> were not supported means that the level of the supervisory group appears not to be the appropriate one for the examination of Organizational Pressure to Attend in this research study. While statistically significant differences occurred between supervisory groups for each Organizational Pressure to Attend variable (with the exception of Employee Pressure to Attend), practical significance was not found. In addition a between-supervisory group inference was not made for the relationship between those variables and either of the two measures of absence behavior. Lacking positive findings for both criteria (discrimination between-groups on the absence climate measure, as well as a significant relationship between the climate measure and the dependent variable), the supervisory group would not be the appropriate aggregation for the study of climate in this research (Joyce and Slocum, 1984).

Next, Organizational Pressure to Attend was examined at the level of the plant. This consideration required that both Hypothesis 4<sub>PLT</sub> and Hypothesis 5<sub>PLT</sub> be examined. In order for the plant to be the appropriate aggregation, differences should be found between plants on the dimension of Organizational Pressure to Attend (Hypothesis 4<sub>PLT</sub>) and a significant relationship must exist between plant members' perceptions of organ-

izational pressure to attend and absence behavior at the plant (Hypothesis 5:1<sub>PLT</sub>). Results of Hypothesis 4<sub>PLT</sub> and Hypothesis 5<sub>PLT</sub> are discussed below.

*Hypothesis 4<sub>PLT</sub>* examined whether there were statistically and practically significant differences between plants on the absence climate variables comprising Organizational Pressure to Attend. Hypothesis 4<sub>PLT</sub> was rejected (see bottom of the fourth column in Table 14) as there were neither statistical, nor practical significant between-plant differences for any of the variables comprising Organizational Pressure to Attend (or any of the other absence climate dimensions).

Differences had been expected between plants for the same two general reasons previously discussed in explaining why statistically significant between-supervisory group differences had been found. Those two reasons were (1) that leaders affect their employees' attitudes and behavior and that (2) groups influence their members to conform by providing desired reinforcers. It was expected that the leadership of different plant managers and the influence of members upon one another in a given plant would result in differences between plants on the six absence climate variables. However, the lack of analogous findings at the level of the plant suggests that something different occurred. Two possibilities are discussed below.

First, it could be that despite the different leadership styles of the plant managers and the dispersed geographic locations of the plants, the overall corporate structure exerted an influence. Thus, the plants (which are subunits of the same organization) did not differ significantly. Second, social exchange theory may be more applicable to smaller supervisory groups than it is to the larger plants. Thus, while supervisory groups be-

come distinctive by influencing members' attitudes based upon interpersonal exchanges, the more impersonal relationships at the level of the plant may mean that employees' perceptions are less susceptible to the influence of other plant members.

The lack of significant between-plant differences specifically for the Organizational Pressure to Attend variables might have resulted because there was no clear indication by each plant's management of how attendance was to be encouraged or of what the attendance goals were for the plant. Lacking such a plant-wide approach, the statistically (albeit not practically) significant differences found at the level of the supervisory group and not replicated at the level of the plant could be a result of genuine differences between supervisory groups and *not* a result of procedures and practices established by the plant.

A version of Hypothesis 5 referring to plants, i.e. *Hypothesis 5:1<sub>PLT</sub>*, asked whether those plants whose members perceived more pressure to attend would have fewer absences. This hypothesis was not examined due to insufficient degrees of freedom. The dashes in the fifth column of Table 14 indicate that this analysis was not performed. An analysis was made of the relationship between each of the six absence climate variables and each measure of absence behavior at the level of the plant without controlling for gender, age and tenure, as discussed below.

*Hypothesis 6<sub>MULT</sub>* examined whether a significant relationship found between any of the Organizational Pressure to Attend variables and either measure of absence behavior at

the supervisory group level would also be found at the plant level. A cross-level effect was hypothesized. This means that any between-unit relationship found at a lower level of analysis (in this case the supervisory group) was also expected at the higher level of analysis (in this case the plant). Such a finding would indicate that the higher level of analysis was actually responsible for the lower level results. As can be seen from the bottom of the sixth column in Table 14, Hypothesis 6<sub>MULT</sub> was rejected.

Why was the cross-level effect not found? Of the three variables comprising Organizational Pressure to Attend, none showed a between-unit inference at the level of either the supervisory group or the plant when the results of both Hypothesis 4 and Hypothesis 5 were viewed in conjunction with one another. What this indicates is that employees' perceptions of organizational pressure to attend (in this study) are not affected by either the supervisory group or plant in which employees work. Neither the supervisory group nor the plant was found to be an appropriate aggregation for the study of the absence climate variable.

## **Conclusions Related to Organizational Pressure to Attend**

In summary, the examination of Organizational Pressure to Attend in this study indicates: (1) there is support for the setting of specific and challenging attendance goals with individual employees, because those employees perceiving management's goal as more difficult have lower absence behavior; (2) employees appear to exert pressure on their co-workers to attend; however, those perceiving more pressure are the employees with the higher number of absence incidents; (3) supervisory groups (but not plants) differ statistically (but not practically) in their perception of how much management

encourages good attendance and what management's goals are for good attendance; and (4) neither the individual nor the supervisory group/plant was found to be an appropriate entity for the examination of Organizational Pressure to Attend in this study. This is because at the individual level, there was only limited evidence of a relationship between organizational pressure to attend and absence behavior. At the level of the supervisory group or the plant, there were no final between-supervisory group or between-plant inferences made.

## *Explanations for Absence*

The construct, Explanations for Absence, was conceptualized as the internal pressure which employees place on themselves for good attendance. This dimension focused on the reasons that employees use for explaining (or excusing) absence at work, and also on their perception of the number of allowable days of absence. The variables of Rationalization and Acceptable Level of Absence measured the absence climate dimension, Explanations for Absence. Table 15 summarizes the results of the hypotheses related to Explanations for Absence.

The first hypothesis related to Explanations for Absence asked whether individuals' beliefs about acceptable *reasons* for absence and acceptable *levels* of absence was related to their absence behavior. This hypothesis (Hypothesis 2<sub>IND</sub>)<sup>19</sup> was supported, as shown in the first column of Table 15. When 12-Month Absence Rate was used as the de-

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<sup>19</sup> Hypothesis 1<sub>IND</sub> examined the absence climate dimension of Organizational Pressure to Attend.



**Table 15. Summary of Results for the Absence Climate Dimension of Explanations for Absence**

**EXPLANATIONS FOR ABSENCE**

The following is a summary of the results from the hypotheses related to Explanations for Absence. Subscripts by the hypothesis number are used to indicate the level of analysis being considered. Thus, H<sub>IND</sub> refers to the Individual, H<sub>SUP</sub> refers to the Supervisory Group, H<sub>PLT</sub> refers to the Plant and H<sub>MULT</sub> refers to Multiple Levels of Analysis.

	HYPOTHESES					
	H2 <sub>IND</sub>	H4 <sub>SUP</sub>	H5:2 <sub>SUP</sub>	H4 <sub>PLT</sub>	H5:2 <sub>PLT</sub>	H6 <sub>MULT</sub>
<b>12-Month Absence Rate</b>						
Rationalization	YES	NO	NO	NO	-	NO
Acceptable Level of Absence	YES	NO	NO	NO	-	NO
<b>12-Month Absence Frequency</b>						
Rationalization	YES		NO		-	NO
Acceptable Level of Absence	YES		NO		-	NO
<b>SUMMARY</b>	Accept	Reject	Reject	Reject	-	Reject

**YES**— Results are as hypothesized

**NO** — Results are *not* as hypothesized

H2<sub>IND</sub> suggests that the more employees believe that it is acceptable to be absent, the higher will be their absence behavior.

H4<sub>SUP/PLT</sub> suggests that there are significant differences between supervisory groups (plants) on the absence climate dimensions.

H5:2<sub>SUP/PLT</sub> suggests that the more members of a supervisory group (plant) believe absence is acceptable, the higher will be their absence behavior.

H6<sub>MULT</sub> suggests that relationships found at the level of the supervisory group will also be found at the level of the plant.

pendent variable, it was found that the unique contribution of the two variables comprising Explanations for Absence was 5.3 percent ( $R^2$  of the full model = 12 percent). When 12-Month Absence Frequency was used as the dependent variable, Explanations for Absence made a unique contribution of  $R^2 = 10.1$  percent ( $R^2$  of the full model = 21 percent). None of the other variables in any of the other absence climate dimensions accounted for this much of a model's variance in explaining absence behavior at the individual level of analysis.

In order to consider the importance of these two variables to the explanation of absence behavior at the individual level of analysis, it is necessary to consider again what each variable was measuring. Acceptable Level of Absence measured internal pressure to attend by asking what, in the employee's opinion, was an acceptable level of absence. Based on goal setting theory, it is not surprising that those individuals who have "easier" goals (i.e. find acceptable a higher level of absence) have more absences (Pinder, 1984). The other variable, Rationalization, measured the strength of employees' own pressure to attend by assessing the degree to which they could rationalize or justify their absence from work. For example, if employees responded affirmatively to the statement, "Sometimes I need to be absent to get some rest," then their Rationalization score was higher. Once again, it is not surprising that those employees with less demanding expectations for themselves (evidenced by higher scores on the Rationalization Scale) also had more absences.

Next, it is useful to consider how other absence researchers have viewed this construct (or very similar ones) and what results they found. Ilgen and Hollenback (1977) identified a similar construct, which they called "value system pressure" and others (see review by Steers & Rhodes, 1978) have called "work ethic" or Protestant ethic. Ilgen and

Hollenback found a correlation of  $-.15$  ( $p < .05$ ) between sick leave and pressures arising from the individuals' values regarding why they should attend work. Goodale (1973) and Feldman (1974) also found a negative relationship between work ethic and absence behavior.

While Steers and Rhodes (1978) indicated a need for more study of the work ethic variable in relationship to absenteeism, it has not received such study. This lack of further inquiry could be a result of current interest in the construct of "job involvement," which examines how central work is to an individual and thus partly encompasses the work ethic construct. The significant finding of this study, that individuals who believe absence from work is more acceptable have higher absence behavior, is indicative of the importance of work values for understanding absence behavior.

*Hypothesis 4<sub>SUP</sub>* hypothesized differences between supervisory groups on the two Explanations for Absence variables (Rationalization and Acceptable Level of Absence). It was supported using traditional statistical methods (ANOVA), but tests of practical significance found the within-supervisory group variation to be stronger (see second column in Table 15). Statistically significant between-supervisory group differences were found for both Rationalization ( $R^2 = .074$ ,  $p < .01$ ) and Acceptable Level of Absence ( $R^2 = .147$ ,  $p < .01$ ). The two general reasons for finding differences between supervisory groups are the same as those discussed under the dimension of Organizational Pressure to Attend. The specific reasons for finding between-supervisory group differences for Rationalization and Acceptable Level of Absence are discussed below.

First, employees' beliefs about what constitutes acceptable reasons or explanations for absence and what constitutes an acceptable level of absence are not necessarily tied to objective facts. Consequently, such beliefs cannot be readily checked for accuracy. Cartwright and Zander (1968: 142) stated that groups apply pressure to conform in order to provide "subjective validity of an opinion." In other words, when a situation cannot be judged by objective data, then group members are provided security by the shared agreement among individual members of the group.

Second, while Chadwick-Jones et al. (1982) found that there were differences between blue-collar workers in different industries (e.g., employees working in the clothing industry found it more acceptable to take off a day now and then, than did employees working in public transport), no studies were found that researched this question at the level of work groups. The different production tasks which characterize the supervisory groups of this study (in contrast to the different technologies which characterize the industries studied by Chadwick-Jones, et al. [1982]) may influence the degree to which individuals rationalize their absence from work.

The lack of practical significance may be better understood by considering the variables comprising Rationalization and Acceptable Level of Absence. These variables are most closely tied to an individual's own values and belief system. This is in contrast to the variables regarding organizational pressure to attend or consequences of absence which are more directly related to the absence practices of the formal organizational structure.

As can be seen in the third column of Table 15, no support was found for *Hypothesis 5:2<sub>SUP</sub>*. This hypothesis examined whether *supervisory groups* which rationalized absence

behavior and perceived higher levels of absence as more acceptable, also had higher absence behavior. Since no significant between-supervisory group inferences were found, Hypothesis 5:2<sub>SUP</sub> was rejected.

Between-supervisory group inferences were expected because groups can influence the beliefs as well as the behaviors of their members by offering desired reinforcers (such as social acceptance, social support, and provision of information) in exchange for conformity of opinion and behavior. The lack of significant findings might, however, be due not to any failure of social exchange theory, but rather to the three reasons enumerated below.

First, it could be that the wrong "grouping" or aggregation of workers was made. In other words, it may well be that the group influences employees' beliefs about what is acceptable absence, but perhaps it is the employees' familial group, friendship group or car pool "buddies" which is the social unit influencing them rather than the supervisory group. Second, absence from work may not be a high priority of the supervisory group and hence efforts by the group to apply pressure for uniformity of opinion and behavior about acceptable reasons for absence and acceptable levels of absence simply do not occur. Third, attendance by the work group may not be perceived as a high priority by management. While management wants high attendance by individual employees, if attention is not focused on the supervisory group, then attendance does not become a work group goal.

The lack of significant findings at the level of the supervisory group (as evidenced by the rejection of both Hypothesis 4 and Hypothesis 5) means that the supervisory group is not the appropriate entity for the study of Explanations for Absence in this research. While there were significant differences between supervisory groups on the two absence

climate variables comprising Explanations for Absence (Hypothesis 4<sub>SUP</sub>), there was no relationship between either of those variables and either measure of absence behavior at the level of the supervisory group (Hypothesis 5:2<sub>SUP</sub>). As noted previously, according to Joyce and Slocum (1984) both criteria must be met in order to confirm that the appropriate aggregation has been chosen.

*Hypothesis 4<sub>PLT</sub>* examined whether there were differences between plants on either of the two Explanations for Absence variables (Rationalization or Acceptable level of Absence). As can be seen from the fourth column of Table 15, Hypothesis 4<sub>PLT</sub> was rejected. No significant between-plant differences were found for Rationalization ( $R^2 = .014$ , n.s.) or Acceptable Level of Absence ( $R^2 = .080$ , n.s.).

A possible reason why statistically significant between-supervisory group differences, but no statistically significant between-plant differences were found for Explanations for Absence is that supervisory groups were formed for different production tasks. Since absence could affect completion of the task, beliefs about what are acceptable reasons for absence and what is an acceptable level of absence could vary according to the nature of the task (and therefore according to supervisory group). Each plant, however, was comprised of the same types of tasks and hence the same types of supervisory groups. Therefore any effect of task would disappear when differences between-plants were considered. (All plants had the same technological processes.)

*Hypothesis 5:2<sub>PLT</sub>* asked whether those plants whose members rationalized absence more and perceived a higher number of absences as acceptable would have higher absence behavior. As a result of insufficient degrees of freedom, this hypothesis could not be examined in its original form.

*Hypothesis 6<sub>MULT</sub>* examined whether cross-level inferences for the variables comprising Explanations for Absence would be found. A cross-level inference requires that a significant between-unit relationship found at the lower level of analysis (in this case the supervisory group) also be found at the higher level of analysis (in this case the plant). Since there were no significant between-supervisory group findings, no cross-level inferences were made. Thus, Hypothesis 6<sub>MULT</sub> was rejected, as shown in the last column of Table 15. This provides further support that the individual level of analysis is most appropriate for the examination of this dimension of absence climate.

## **Conclusions Related to Explanations for Absence**

In summary, this examination of Explanations for Absence indicates: (1) there is support for further investigation of individuals' perceptions about acceptable reasons for absence and acceptable levels of absence, since those employees perceiving absence as more acceptable have higher absence behavior; (2) rationalizations of absence behavior by employees may be quite important to the study of absence and might even be used to select employees having beliefs in accord with the climate desired by management; (3) work groups (but not plants) differ in their perception of what are acceptable reasons

and an acceptable level of absence using traditional statistical methods; and (4) the most appropriate entity for the study of Explanations for Absence in this study is the individual. This is because a significant relationship was found between employees' perceptions of when and how much absence was acceptable and their absence behavior, and no final between-supervisory group or between-plant inferences were made.

## *Consequences of Absence*

The third dimension of absence climate, i.e. Consequences of Absence, was conceptualized as the results or consequences arising from absence behavior. It focused on employees' perceptions of organizational consequences for being either present or absent from work. Consequences of Absence was measured by one scale, Organizational Sanctions. A summary of the results for the absence climate dimension of Consequences of Absence can be found in Table 16.

The first hypothesis related to the dimension of Consequences of Absence, *Hypothesis 3<sub>IND</sub>*, examined whether employees who perceived positive consequences for attendance and negative consequences for absence had lower absence behavior. As can be seen from the first column of Table 16, Hypothesis 3<sub>IND</sub> was rejected. This was because no significant relationship was found between Consequences of Absence and either measure of absence behavior at the individual level of analysis. How is this lack of significance to be explained?



**Table 16. Summary of Results for the Absence Climate Dimension of Consequences of Absence**

**CONSEQUENCES OF ABSENCE**

The following is a summary of the results from the hypotheses related to Consequences of Absence. Subscripts by the hypothesis number are used to indicate the level of analysis being considered. Thus, H<sub>IND</sub> refers to the individual, H<sub>SUP</sub> refers to the Supervisory Group, H<sub>PLT</sub> refers to the Plant and H<sub>MULT</sub> refers to Multiple Levels of Analysis.

	HYPOTHESES					
	H3 <sub>IND</sub>	H4 <sub>SUP</sub>	H5:3 <sub>SUP</sub>	H4 <sub>PLT</sub>	H5:3 <sub>PLT</sub>	H6 <sub>MULT</sub>
<b>12-Month Absence Rate</b>						
Organizational Sanctions	NO	NO	YES	NO	-	NO
<b>12-Month Absence Frequency</b>						
Organizational Sanctions	YES		YES		-	NO
<b>SUMMARY</b>	Reject	Reject	Accept	Reject	-	Reject

YES= Results are as hypothesized

NO = Results are not as hypothesized

H3<sub>IND</sub> suggests that employees perceiving positive consequences for attendance or negative consequences for absence will have lower absence behavior.

H4<sub>SUP/PLT</sub> suggests that there are significant differences between supervisory groups/plants on the absence climate dimensions.

H5:3<sub>SUP/PLT</sub> suggests that those supervisory groups/plants whose members perceive positive consequences for attendance or negative consequences for absence will have lower absence behavior.

H6<sub>MULT</sub> suggests that relationships found at the level of the supervisory group will also be found at the level of the plant.

First, reinforcement theory (Thorndike, 1911) indicates that if the consequences of an individual's response (behavior) to a stimulus were positive then the behavior would be repeated or conversely, if the consequences of an individual's response (behavior) to a stimulus were negative, then the behavior would be weakened and/or disappear. A lack of significant findings would mean, according to reinforcement theory, that even though employees say they perceive consequences, those consequences do not in fact occur to shape actual behavior.

A second possibility would be that the group in which an individual employee held membership would make a difference and hence need to be considered in determining whether or not an individual perceived consequences for absence. It could be that in *some* supervisory groups (but not others) there were consequences for good and poor attendance. Consequently, members of those groups in which consequences occurred would change their absence behavior if the consequences for good attendance were positive, or the consequences for poor attendance were negative, or both. Thus, Thorndike's (1911) reinforcement theory would still apply, but for groups. The relationship at the individual level of analysis would be obscured, because the perception of consequences would vary by supervisory group.

*Hypothesis 4<sub>SUP</sub>* showed significant differences between supervisory groups on employees' perceptions of organizational sanctions for good and/or poor attendance using traditional statistical methods (ANOVA). The  $R^2$  for Organizational Sanctions was .082,  $p < .01$ . However, since practical significance was not also found (WABA I) Hypothesis 4<sub>SUP</sub> was rejected as shown in the second column of Table 16. Once again, the general

explanation of differences between supervisory groups is that the different leadership styles and the social exchange among group members resulted in different perceptions about the degree to which there were consequences for absence behavior.

The statistically significant between-supervisory group differences for Organizational Sanctions could have been a result of different methods of supervision. Supervisors had the potential of creating a relationship between good attendance and positive consequences or poor attendance and negative consequences. For example, supervisors had the authority to make decisions about the allocation of work to employees. This meant that supervisors had the power to provide "better" work to those employees with better attendance records. As another example, supervisors could also control who would be "clocked out," i.e. asked to leave if there were insufficient work. Thus, supervisors had it within their power to relate consequences to behavior. However, having the ability to make such a connection does not assure that a supervisor would do so, nor does it assure that such a connection would be made in a consistent manner. This would depend upon the supervisor and his/her beliefs and behavior. Thus, one might expect differences between supervisors to occur unless there was an overall training program with reinforcements to supervisors for handling attendance matters in a similar and consistent manner. The lack of practical significance is indicative of the wide variation of perceptions found within the supervisory groups.

*Hypothesis 5<sub>SUP</sub>* examined Hypothesis 3 at the level of the supervisory group. In other words, it asked whether supervisory groups whose members perceived positive consequences for good attendance or negative consequences for poor attendance had lower

absence behavior. Hypothesis 5:3<sub>SUP</sub> was accepted, as shown in the bottom portion of the third column of Table 16. The results indicated a group effect. A between-supervisory group inference was made for the relationship between Organizational Sanctions and 12-Month Absence Rate ( $Z = -2.39, p < .01$ ), as well as between Organizational Sanctions and 12-Month Absence Frequency ( $Z = -2.90, p < .01$ ). These results mean that in some of the supervisory groups, members perceived a relationship between good attendance and positive consequences and between poor attendance and negative consequences. While the effect might not be completely a result of the supervisor's method of supervision, it would certainly be affected by supervisory style. Since significant differences were also found between supervisory groups on Consequences of Absence ( $F = 2.20, p < .01$ ), further support for using the supervisory group level of analysis is evidenced.

These results are important in that there was no significance for the relationship between Consequences of Absence and either measure of absence behavior at the individual level of analysis. The group effect was "hidden" by considering the individual's score in relationship to the overall mean of employees at the five plants, rather than considering the score of the individual's supervisory group in relationship to that overall mean. If the results had *not* been examined for a group effect, erroneous conclusions would have been reached, i.e. that employees' perceptions of consequences of absence were not related to their absence behavior (when, in fact, it depended upon the group to which the employee belonged).

While no absence studies were found that examined the relationship between absence behavior and consequences of absence at the level of the supervisory group, numerous studies at the individual level of analysis have shown that positive consequences for at-

tendance result in lower individual absence behavior (Grove, 1968; Panyan and McGregor, 1976; Pedalino & Gamboa, 1974; Schlotzhauer & Rosse, 1985; Scott, Markham & Robers, 1985). Some studies have shown that negative consequences for absence lower absence behavior, while other studies have shown null results (Baum & Youngblood, 1975). This study's finding of no significant relationships between absence behavior and consequences of absence at the individual level of analysis would appear initially to contradict previous research. However, it should be noted that in the research cited, absence programs had been implemented and *then* a relationship between absence behavior and consequences of good/poor attendance assessed. In this current study, no formal absence program had been initiated. Consequently, the finding of a between-supervisory group effect could have been a result of some supervisors independently establishing a relationship between good/bad attendance and positive/negative consequences without benefit of a formal program.

In summary, the relationship found between Organizational Sanctions and both measures of absence behavior (Hypothesis 5:3<sub>sup</sub>), in addition to the statistically significant between-group differences found for Organizational Sanctions (Hypothesis 4<sub>SUP</sub>) provide further evidence for the conclusion that the absence climate dimension of Consequences of Absence is appropriately examined in this study at the level of the supervisory group. However, both the predictability and discrimination criteria (Joyce and Slocum, 1984) must be met for confirming the appropriate level of aggregation and since there was no practical significance found, the criteria of discrimination was not fully met and thus the supervisory group is not found to be the appropriate level of analysis.

*Hypothesis 4<sub>PLT</sub>* was rejected, as no statistically significant between-plant differences were found for Organizational Sanctions. (See the fourth column of Table 16.) The  $R^2$  was .023, n.s. This finding is consistent with all the previously reported insignificant between-plant differences for the absence climate variables. Once again, these results may be explained by the overall influence of the larger organization of which the plants were subunits and the potential applicability of social exchange theory to smaller groups rather than the larger plants. As regards the specific variable of Organizational Sanctions, it would appear that the individual supervisors in the various plants are responsible for significant differences between supervisory groups, rather than a managerial influence at the level of the plant.

*Hypothesis 5<sub>PLT</sub>* asked whether plants whose members perceived positive consequences for good attendance and negative consequences for poor attendance had lower absence behavior. Insufficient degrees of freedom made it impossible to investigate this hypothesis in its original form.

As can be seen from the last column of Table 16, *Hypothesis 6<sub>MULT</sub>* was rejected. While a cross-level effect had been hypothesized, between-unit inferences were not found, when the results of Hypothesis 4 and Hypothesis 5 were considered simultaneously. This means that neither the supervisory group nor the plant are appropriate aggregations in this study for examining the absence climate dimension of Consequences of Absence in this study (nor is the individual level of analysis appropriate). The strong between-unit

covariation found for the relationship between absence behavior and consequences of absence may however indicate that this dimension would emerge at the level of the supervisory group, if absence were made a priority at the group or plant level of analysis.

## **Conclusions Related to Consequences of Absence**

In summary, this examination of Consequences of Absence indicates: (1) there is support for focusing managerial attention on supervisory groups (or the unit in which consequences for good and poor attendance are administered), since groups perceiving such consequences have lower absence behavior; (2) previous absence research may have overlooked significant findings by not paying attention to multiple levels of analysis; this study showed no significant findings for this dimension at the individual level of analysis (which is where most absence studies have focused their attention) but strong findings at the level of the supervisory group; and (3) the most appropriate entity for the study of Consequences of Absence in this study is the supervisory group, given some evidence of between-supervisory group differences and a relationship between a group's absence behavior and its members' perceptions of the consequences of being absent. However, there was the limitation of having also found significant within-unit variation.

## ***Summary for the Three Dimensions of Absence Climate***

Table 17 places into perspective the results from all six hypotheses. The results suggest that absence climate is not a single climate which pervades an entire organization. In-

stead there may be "pockets" of absence climate consisting of different dimensions and relevant to distinctive units within the organization. Such pockets are suggested in this study by the finding that relevant dimensions of absence climate differed for individuals and supervisory groups. This finding supports Powell and Butterfield's (1978) contention that organizations have subsystem climates.

At the individual level of analysis, absence climate consists of employee perceptions about acceptable reasons for absence and acceptable levels of absence (both elements of Explanations for Absence). A relationship between such perceptions and the absence behavior of individuals exists; thus this dimension of absence climate is best examined at the individual level of analysis. While there are some differences among supervisory groups in how their members perceive this dimension of absence climate, there is no relationship between such perceptions and the absence behavior of those supervisory groups. Hence, this dimension might not be relevant for supervisory groups.

What this means conceptually is that the perceptions employees hold about the acceptability of absence may be related to their personal and work related goals. Such goals appear to be related to the individual beliefs employees bring with them into the work place. Thus, employees' explanations about their absence behavior, rather than being affected or even shaped by the plant or the supervisory work group seem to be specific to the individual.

Supervisory groups appear to differ in their perceptions of what sanctions the organization provides for good/poor attendance (Consequences of Absence). In addition there is a relationship between the perception of such sanctions by supervisory group members and the absence behavior of the supervisory group. However, this finding must be qualified since significant within supervisory group variation was also found for Conse-



Table 17. Full Summary of Results for the three Absence Climate Variables

	HYPOTHESES										
	INDIVIDUAL			SUPERVISORY			PLANT		MULT		
	H1 IND	H2 IND	H3 IND	H4 sup	H5:1 sup	H5:2 sup	H5:3 sup	H4 PLT	H5 PLT	H6 MULT	
<b>12-MONTH ABSENCE RATE</b>											
<b>Organizational Pressure to Attend</b>											
Attendance Encouragement	NO			NO	NO			NO	-	NO	
Management's Goal	YES			NO	NO			NO	-	NO	
Employee Pressure	NO			NO	NO			NO	-	NO	
<b>Explanations for Absence</b>											
Rationalization		YES		NO				NO	-	NO	
Acceptable Level of Absence		YES		NO				NO	-	NO	
<b>Consequences of Absence</b>											
Organizational Sanctions			NO	NO			YES	NO	-	NO	
<b>12-MONTH ABSENCE FREQUENCY</b>											
<b>Organizational Pressure to Attend</b>											
Attendance Encouragement	NO				NO				-	NO	
Management's Goal	YES				NO				-	NO	
Employee Pressure	NO				NO				-	NO	
<b>Explanations for Absence</b>											
Rationalization		YES							-	NO	
Acceptable Level of Absence		YES							-	NO	
<b>Consequences of Absence</b>											
Organizational Sanctions			NO				YES		-	NO	
<b>SUMMARY</b>	Reject	Accept	Reject	Reject	Reject	Reject	Accept	Reject	NA	Reject	

YES = Results are as hypothesized

NO = Results are not as hypothesized

quences of Absence. Thus, there is some evidence that absence climate at the level of the supervisory group is characterized by the practices and procedures related to the consequences of good and poor attendance, but not enough to say that the supervisory group is the appropriate aggregation.

What this means conceptually is that the supervisory group can affect the relationship between the perceptions members of that group hold regarding consequences of good and poor attendance and their absence behavior. While this study does not investigate the specific cause of such a group effect, it could be that the supervisor's ability to control organizational sanctions for attendance (or absence) would mean that some supervisors would choose to exercise such authority, while others would choose not to do so. Thus, differences between supervisory groups would be expected unless there were an overall program designed to insure uniformity among supervisory procedures.

### ***Methodological Limitations of the Study***

All studies have limitations, and this study is no exception. Six limitations of this study have been identified. None is considered a serious threat to the validity of the results, but each deserves consideration in order to interpret the findings and to aid in replication of this study.

The primary limitation of this study was the limited number of plants, which prevented examination of the full absence climate model at the level of the plant. Since there were three control variables (Gender, Age and Tenure) and at least one absence climate vari-

able specified in a model, a minimum of 5 degrees of freedom would be required in any of the regression equations. Since there were only five (5) plants, the degrees of freedom available were only 4 ( $N-1=4$ ). Thus, it was impossible to consider the full absence climate model across three levels of analysis (i.e., the individual, supervisory group and plant). Also, it remains uncertain whether the significant relationships between Organizational Sanctions and both measures of absence behavior which emerged at the of the supervisory group level would also be present at the plant level.

A second limitation was that Employee Pressure to Attend was not adequately assessed. Hence, it was impossible to determine whether some of the insignificant findings for that construct (which was a single item) were because of measurement error or because the construct was not pertinent to the study of absence climate. In two cases the variable was close to being significant. In the first case (Hypothesis 1<sub>IND</sub>) no significant relationship was found between 12-Month Absence Rate and Employee Pressure to Attend. In the second case (Hypothesis 4<sub>SUP</sub>) Employee Pressure to Attend was the only absence climate variable not showing significant between-supervisory group differences ( $p < .0893$ ). Given the unexpected inverse relationship found between Employee Pressure to Attend and 12-Month Absence Frequency, it might also have been preferable to consider Employee Pressure to Attend as a separate dimension.

The third limitation was that this study was not longitudinal, hence it was impossible to determine whether the findings would be stable across time. A longitudinal study would allow a determination of how long the absence climate at the various levels had been in effect. It would also allow for an investigation of whether the direction of the absence climate (favorable versus unfavorable climate toward good attendance) and its pervasiveness (extent of spread) across levels would change over a period of time. All

of these things would be important to management if a change in the organization's absence climate were desired.

A fourth limitation is that this study was part of a large scale absence research project and hence the measures available were already developed. If this study had been specifically tailored to absence climate, the primary change would have been to incorporate more measures of employee pressure to attend in order to better determine employees' perceptions of the influence of their co-workers on their own relationship to the task to be accomplished. Moreover, items would have been added to the Consequences of Absence dimension in order to better assess employees' perceptions of the positive consequences of good attendance and not primarily the negative consequences.

A fifth limitation is that the generalizability of the findings of this study may be limited to the apparel industry and to piecework operations in particular. On the other hand, the apparel industry continues to be a significant one for the South and in particular for the western part of Virginia, where this study occurred.

## *Implications of the Research*

This study has a number of theoretical and practical implications. First, evidence was found to warrant the use of different levels of analysis in the study of absence. If this research had examined absence climate from only the perspective of the individual (the most common type of analysis), sanctions for good/poor attendance would not have been recognized as a variable potential of importance in understanding absence from

work. This is because at the individual level of analysis there was no significant relationship between absence behavior and consequences for good/poor attendance, however at the level of the supervisory group such a relationship was found. On the other hand, if only the level of the supervisory group had been studied, the significant correlations between absence behavior and management's goal for absence, employee pressure to attend (albeit not in the hypothesized direction) and beliefs about the acceptability of absence would have been overlooked.

A final limitation of this study is that the study's initial conceptualizations did not clearly differentiate between the adjustment and social models of absence. While it was noted that the adjustment model is concerned with the individual level of analysis, and the social model is concerned with the level of the group (a question of entities), little discussion followed of the different variables utilized in each model. This is because Chadwick-Jones et al. (1982) built their social theory upon the the adjustment model (cf. Hill and Trist, 1962), adding to it the value of considering the social context on an individual's absence behavior. Thus, there is a good deal of overlap between the two theories, particularly with regard to how individuals are socialized into an organization.

Second, by simultaneously examining several levels of analysis, it is possible to test the theoretical basis used in choosing a level of analysis. Thus, by examining the individual level of analysis in conjunction with the level of the supervisory group, it was possible to affirm the appropriateness of the individual level for studying employees' perceptions of what is management's goals for absence and what are acceptable reasons and levels of absence, thus providing further support for the use of goal setting theory to assist in explaining absence behavior. Insufficient degrees of freedom prevented a comparable analysis for the supervisory group and the plant. However, some support for the ap-

appropriateness of examining an organization's sanctions for absence at the level of the supervisory group (in contrast to the plant) was provided by examining the relationship between organizational sanctions and absence behavior (without controls). In this case, social exchange and leadership theory were helpful in explaining the significant group covariation found at the level of the supervisory group.

Third, while employees' explanations about the legitimacy of absence affect their absence behavior, little is known about what absence means or the functions absence serves for individuals (Johns & Nicholson, 1982). Are there acceptable reasons (other than those legitimized or certified by a company) for being absent? Would flexible schedules, for example, allow time for personal business (such as getting children off to school or seeing a doctor or dentist) and thereby negate the need to be late or absent from work? By decreasing the need for rationalizing absence, work values could be encouraged that actively supported good attendance.

The fourth practical implication of this research is the empirical support for clearly identifying management's goals for attendance. Employees who perceived management's goals as more difficult had significantly lower absence behavior. Akin and Hopelain (1986: 20) noted that unless management makes it clear to "insiders" that productivity is desired, productivity will not be forthcoming. The same is true of work attendance (Sandwich, 1987). Standards and policies need to be clearly articulated, in order for employees to know what is expected. A related implication (although not empirically tested in this study since there were no attendance control programs in effect) is that by focusing attention on attendance standards for supervisory groups, departments or other organizational subunits, attendance may be improved for that particular level within the organization. To date only a few studies have focused their attention

on improving the attendance of organizational subunits (Scott et al., 1985). This is therefore a relatively unexplored area that may produce significant benefits to an organization.

A fifth implication is that management must actively reinforce those employees who meet its goals and standards. Empirical evidence was found in this study that absence behavior was lower in those supervisory groups where a connection was perceived by members between good attendance and positive consequences or poor attendance and negative consequences. This finding suggests the importance of the supervisor, who controls organizational sanctions. By reinforcing the desired behavior, absence was reduced. Dalton and Enz (1987) warn that if a supervisor does not support good attendance, then standards of the work group will prevail. Thus, management needs to show that attendance is a priority.

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# **Appendix 1**

## ***Factor Analysis***



V A R I M A X   R O T A T I O N

I T E M S	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
A30JOBSA	.763	-.110	.089	.026	.098
A25ENJOY	.700	-.100	.083	.064	.172
A29WKCON	.538	-.037	.108	.165	.123
A27REGRT	.535	-.295	.108	.047	-.044
A18WAGES	.483	-.005	.066	.201	.248
A28SUPEX	.413	-.059	.198	.178	.032
A26LIKEM	.353	-.016	.105	.132	-.171
A24SOCAL	.342	.019	-.031	.059	-.104
A33CHGMO	-.451	.171	-.066	.052	-.145
A17MOBIL	-.594	-.022	-.128	-.052	-.118
*A10IREST	-.182	.528	-.037	-.007	-.095
*A14SPOUS	-.056	.490	-.014	-.018	-.081
*A12BENEF	-.093	.459	-.091	-.107	.185
*A31TRANS	-.009	.412	-.008	.128	-.136
*A02NOPAY	-.039	.393	-.018	-.103	.285
*A16FPROB	-.035	.363	-.019	.154	-.253
A03MGTST	-.189	.323	.040	.074	.086
*A34EMPAT	-.009	.315	.005	-.003	.109
*A08EFORT	.126	.305	.111	.211	.165
A09PEREZ	-.078	.272	-.066	.020	-.104
A13MOMET	.029	.238	.024	-.006	-.030
*A05PERAT	.130	-.017	.739	.079	-.001
*A06MGRAT	.085	-.028	.649	.090	-.046
*A04SUPAT	.204	.026	.624	.096	.004
A07REWAD	.240	-.017	.299	.191	.254
*A20FIRED	.041	-.017	.188	.538	-.000
*A19PORCO	.098	.110	-.044	.523	.154
*A01GDWOK	.061	.073	.056	.395	.219
*A23POREC	.057	.003	.046	.308	-.106
A15MONEY	.058	-.098	.040	.217	-.175
A21OFFEZ	.023	-.120	.170	.193	-.130
A11SWING	.076	.047	.015	.119	-.037
A32WAKUP	.216	-.055	.022	-.027	.272
A22ORDER	.139	-.071	-.010	.041	.239
<b>VARIANCE EXPLAINED BY EACH FACTOR</b>	<b>Factor 1 3.1720</b>	<b>Factor 2 1.8116</b>	<b>Factor 3 1.6639</b>	<b>Factor 4 1.2218</b>	<b>Factor 5 .7936</b>

\* indicates those variables utilized in this study

Note:           Factor 2 corresponds to the Rationalization Scale  
                  Factor 3 corresponds to the Attendance Encouragement Scale  
                  Factor 4 corresponds to the Organizational Sanctions Scale

## **Appendix 2**

### ***Correlation Matrix at the Individual Level of Analysis (N=1139)***

VARIABLES	ABF12CTR	GENDER	AVRSOLD	ATENURE	AENCOUR	A59MGTGO	A34EMPAT	ARATNAL	A39ACEPT	ASANCTS
ABR12CTR	.297***	.108***	-.190***	-.196***	.023	-.102***	.058*	.234***	2.10***	.017
ABF12CTR		.122***	-.241***	-.240***	.012	-.163***	.087*	.304***	.297***	.015
GENDER			.027	-.037	.003	-.028	.004	.095**	.085*	-.143***
AVRSOLD				.486***	.061*	.095**	-.044	-.142***	-.160***	-.004
ATENURE					-.005	.126***	-.018	-.091**	-.114***	-.175***
AENCOUR						.027	-.000	-.006	-.105***	.179***
A59MGTGO							-.027	-.095**	-.185***	.002
A34EMPAT								.227***	.012	.064
ARATNAL									.145***	.085***
A39ACEPT										-.056

p < .05 = \*

p < .01 = \*\*

p < .001 = \*\*\*

KEY:

- ABR12CTR -- 12-Month Absence Rate
- ABF12CTR -- 12-Month Absence Frequency
- GENDER -- Gender
- AVRSOLD -- Age
- ATENURE -- Tenure
- AENCOUR -- Management's Encouragement of Attendance
- A59MGTGO -- Management's Goal for Attendance
- A34EMPAT -- Employee Pressure to Attend
- ARATNAL -- Rationalization
- A39ACEPT -- Acceptable Level of Absence
- ASANCTS -- Organizational Sanctions

## Appendix 4

### *Descriptive Statistics at the Individual Level of Analysis*

Individuals = 1139 Female = 1089 Male = 50	N	Mean	Standard Deviation	Minimum Value	Maximum Value
12-Month Absence Rate	1139	4.38	4.50	0.00	32.98
12-Month Absence Frequency	1139	6.79	5.92	0.00	33.00
Age	1139	36.68	11.76	17.00	69.00
Tenure	1139	65.75	64.09	0.00	371.00
Attendance Encouragement	1139	5.07	0.77	1.00	6.00
Management's Goal	1139	2.19	1.30	1.00	5.00
Employee Pressure	1139	2.23	1.09	1.00	6.00
Rationalization	1139	2.80	0.78	1.00	5.67
Acceptable Level of Absence	1139	9.97	8.52	0.00	90.00
Organizational Sanctions	1139	4.08	0.95	1.33	6.00

## Appendix 3

### *Descriptive Statistics at the Supervisory Group Level of Analysis*

Supervisory Group = 1 Female=21 Male=0	N	Mean	Standard Deviation	Minimum Value	Maximum Value
12-Month Absence Rate	21	4.77	5.12	0.00	23.67
12-Month Absence Frequency	21	6.43	4.50	0.00	18.00
Age	21	40.38	12.53	19.00	64.00
Tenure	21	117.67	104.92	1.00	371.00
Attendance Encouragement	21	5.03	0.74	2.67	6.00
Management's Goal	21	1.95	1.36	1.00	5.00
Employee Pressure	21	1.75	0.54	1.00	3.00
Rationalization	21	2.80	0.47	1.71	3.57
Acceptable Level of Absence	21	6.81	3.91	0.00	15.00
Organizational Sanctions	21	3.81	1.04	2.33	6.00

<b>Supervisory Group = 2 Female=2 Male=6</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>8</b>	<b>3.93</b>	<b>4.30</b>	<b>0.00</b>	<b>11.12</b>
<b>12-Month Absence Frequency</b>	<b>8</b>	<b>5.25</b>	<b>4.68</b>	<b>0.00</b>	<b>14.00</b>
<b>Age</b>	<b>8</b>	<b>26.50</b>	<b>4.57</b>	<b>22.00</b>	<b>34.00</b>
<b>Tenure</b>	<b>8</b>	<b>30.86</b>	<b>25.91</b>	<b>1.00</b>	<b>78.00</b>
<b>Attendance Encouragement</b>	<b>8</b>	<b>4.83</b>	<b>0.31</b>	<b>4.33</b>	<b>5.33</b>
<b>Management's Goal</b>	<b>8</b>	<b>2.14</b>	<b>1.12</b>	<b>1.00</b>	<b>4.00</b>
<b>Employee Pressure</b>	<b>8</b>	<b>1.75</b>	<b>0.46</b>	<b>1.00</b>	<b>2.00</b>
<b>Rationalization</b>	<b>8</b>	<b>2.54</b>	<b>1.00</b>	<b>1.00</b>	<b>3.86</b>
<b>Acceptable Level of Absence</b>	<b>8</b>	<b>7.25</b>	<b>3.20</b>	<b>3.00</b>	<b>12.00</b>
<b>Organizational Sanctions</b>	<b>8</b>	<b>4.88</b>	<b>0.61</b>	<b>3.75</b>	<b>5.75</b>

<b>Supervisory Group = 3 Female=32 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>32</b>	<b>3.98</b>	<b>3.70</b>	<b>0.00</b>	<b>12.39</b>
<b>12-Month Absence Frequency</b>	<b>32</b>	<b>6.03</b>	<b>4.93</b>	<b>0.00</b>	<b>15.00</b>
<b>Age</b>	<b>32</b>	<b>34.81</b>	<b>11.61</b>	<b>18.00</b>	<b>64.00</b>
<b>Tenure</b>	<b>32</b>	<b>70.19</b>	<b>62.17</b>	<b>1.00</b>	<b>191.00</b>
<b>Attendance Encouragement</b>	<b>32</b>	<b>5.08</b>	<b>0.84</b>	<b>2.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>32</b>	<b>2.00</b>	<b>1.18</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>32</b>	<b>2.37</b>	<b>1.09</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>32</b>	<b>2.77</b>	<b>0.62</b>	<b>1.57</b>	<b>4.29</b>
<b>Acceptable Level of Absence</b>	<b>32</b>	<b>6.28</b>	<b>2.85</b>	<b>0.00</b>	<b>12.00</b>
<b>Organizational Sanctions</b>	<b>32</b>	<b>3.90</b>	<b>0.95</b>	<b>2.00</b>	<b>5.75</b>

<b>Supervisory Group = 4 Female = 9    Male = 6</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	15	1.06	1.61	0.00	4.90
<b>12-Month Absence Frequency</b>	15	1.87	2.77	0.00	9.00
<b>Age</b>	15	46.13	9.43	22.00	60.00
<b>Tenure</b>	15	107.13	63.51	2.00	204.00
<b>Attendance Encouragement</b>	15	5.51	0.42	5.00	6.00
<b>Management's Goal</b>	15	1.33	0.73	1.00	3.00
<b>Employee Pressure</b>	15	2.93	1.83	1.00	6.00
<b>Rationalization</b>	15	2.20	0.76	1.00	3.86
<b>Acceptable Level of Absence</b>	15	3.33	1.95	0.00	6.00
<b>Organizational Sanctions</b>	15	4.63	1.07	3.00	6.00

<b>Supervisory Group = 5 Female = 21    Male = 1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	22	6.02	6.20	0.00	22.40
<b>12-Month Absence Frequency</b>	22	8.50	6.89	0.00	21.00
<b>Age</b>	22	32.95	9.43	20.00	57.00
<b>Tenure</b>	22	50.41	48.39	2.00	213.00
<b>Attendance Encouragement</b>	22	5.24	0.75	3.67	6.00
<b>Management's Goal</b>	22	2.10	1.51	1.00	5.00
<b>Employee Pressure</b>	22	1.95	0.90	1.00	5.00
<b>Rationalization</b>	22	2.58	0.73	1.43	4.14
<b>Acceptable Level of Absence</b>	22	7.00	4.32	3.00	20.00
<b>Organizational Sanctions</b>	22	3.91	0.77	2.75	5.75

<b>Supervisory Group = 6 Female=24 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>24</b>	<b>4.08</b>	<b>4.14</b>	<b>0.00</b>	<b>18.80</b>
<b>12-Month Absence Frequency</b>	<b>24</b>	<b>6.75</b>	<b>4.80</b>	<b>0.00</b>	<b>15.00</b>
<b>Age</b>	<b>24</b>	<b>39.92</b>	<b>11.85</b>	<b>20.00</b>	<b>59.00</b>
<b>Tenure</b>	<b>24</b>	<b>87.96</b>	<b>75.88</b>	<b>0.00</b>	<b>220.00</b>
<b>Attendance Encouragement</b>	<b>24</b>	<b>5.21</b>	<b>0.45</b>	<b>4.67</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>24</b>	<b>1.49</b>	<b>0.92</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>24</b>	<b>2.05</b>	<b>0.75</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>24</b>	<b>3.12</b>	<b>0.82</b>	<b>1.57</b>	<b>5.20</b>
<b>Acceptable Level of Absence</b>	<b>24</b>	<b>7.25</b>	<b>3.23</b>	<b>3.00</b>	<b>15.00</b>
<b>Organizational Sanctions</b>	<b>24</b>	<b>4.02</b>	<b>0.97</b>	<b>2.00</b>	<b>5.50</b>

<b>Supervisory Group = 7 Female=24 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>24</b>	<b>8.12</b>	<b>8.69</b>	<b>0.00</b>	<b>32.98</b>
<b>12-Month Absence Frequency</b>	<b>24</b>	<b>9.04</b>	<b>6.45</b>	<b>0.00</b>	<b>21.00</b>
<b>Age</b>	<b>24</b>	<b>37.17</b>	<b>11.52</b>	<b>22.00</b>	<b>62.00</b>
<b>Tenure</b>	<b>24</b>	<b>72.79</b>	<b>67.78</b>	<b>1.00</b>	<b>195.00</b>
<b>Attendance Encouragement</b>	<b>24</b>	<b>5.06</b>	<b>0.77</b>	<b>3.67</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>24</b>	<b>2.32</b>	<b>1.42</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>24</b>	<b>2.70</b>	<b>1.20</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>24</b>	<b>2.82</b>	<b>0.82</b>	<b>1.29</b>	<b>4.29</b>
<b>Acceptable Level of Absence</b>	<b>24</b>	<b>9.38</b>	<b>6.10</b>	<b>0.00</b>	<b>25.00</b>
<b>Organizational Sanctions</b>	<b>24</b>	<b>3.71</b>	<b>1.02</b>	<b>1.75</b>	<b>6.00</b>



<b>Supervisory Group = 8 Female=37 Male=2</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>39</b>	<b>3.77</b>	<b>4.81</b>	<b>0.00</b>	<b>22.08</b>
<b>12-Month Absence Frequency</b>	<b>39</b>	<b>6.31</b>	<b>6.37</b>	<b>0.00</b>	<b>25.00</b>
<b>Age</b>	<b>39</b>	<b>34.15</b>	<b>12.66</b>	<b>17.00</b>	<b>61.00</b>
<b>Tenure</b>	<b>39</b>	<b>70.54</b>	<b>74.17</b>	<b>0.00</b>	<b>338.00</b>
<b>Attendance Encouragement</b>	<b>39</b>	<b>5.00</b>	<b>0.90</b>	<b>2.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>39</b>	<b>2.05</b>	<b>1.32</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>39</b>	<b>2.44</b>	<b>1.22</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>39</b>	<b>3.15</b>	<b>0.77</b>	<b>1.60</b>	<b>4.67</b>
<b>Acceptable Level of Absence</b>	<b>39</b>	<b>9.87</b>	<b>8.01</b>	<b>0.00</b>	<b>30.00</b>
<b>Organizational Sanctions</b>	<b>39</b>	<b>4.00</b>	<b>1.00</b>	<b>1.75</b>	<b>5.50</b>

<b>Supervisory Group = 9 Female=17 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>17</b>	<b>3.43</b>	<b>3.37</b>	<b>0.00</b>	<b>11.92</b>
<b>12-Month Absence Frequency</b>	<b>17</b>	<b>4.47</b>	<b>4.29</b>	<b>0.00</b>	<b>17.00</b>
<b>Age</b>	<b>17</b>	<b>31.53</b>	<b>11.96</b>	<b>18.00</b>	<b>59.00</b>
<b>Tenure</b>	<b>17</b>	<b>52.76</b>	<b>94.29</b>	<b>0.00</b>	<b>298.00</b>
<b>Attendance Encouragement</b>	<b>17</b>	<b>5.28</b>	<b>1.81</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>17</b>	<b>2.06</b>	<b>1.20</b>	<b>1.00</b>	<b>4.00</b>
<b>Employee Pressure</b>	<b>17</b>	<b>2.65</b>	<b>1.57</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>17</b>	<b>2.50</b>	<b>0.78</b>	<b>1.14</b>	<b>4.00</b>
<b>Acceptable Level of Absence</b>	<b>17</b>	<b>7.53</b>	<b>4.98</b>	<b>2.00</b>	<b>21.00</b>
<b>Organizational Sanctions</b>	<b>17</b>	<b>4.84</b>	<b>0.86</b>	<b>3.25</b>	<b>6.00</b>

<b>Supervisory Group = 10 Female=31 Male=1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>32</b>	<b>4.93</b>	<b>4.83</b>	<b>0.00</b>	<b>19.70</b>
<b>12-Month Absence Frequency</b>	<b>32</b>	<b>9.03</b>	<b>7.38</b>	<b>0.00</b>	<b>28.00</b>
<b>Age</b>	<b>32</b>	<b>35.69</b>	<b>10.56</b>	<b>18.00</b>	<b>60.00</b>
<b>Tenure</b>	<b>32</b>	<b>73.56</b>	<b>77.19</b>	<b>1.00</b>	<b>249.00</b>
<b>Attendance Encouragement</b>	<b>32</b>	<b>5.28</b>	<b>0.68</b>	<b>3.33</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>32</b>	<b>2.18</b>	<b>1.42</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>32</b>	<b>2.50</b>	<b>1.38</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>32</b>	<b>3.00</b>	<b>0.91</b>	<b>1.00</b>	<b>5.00</b>
<b>Acceptable Level of Absence</b>	<b>32</b>	<b>8.00</b>	<b>4.83</b>	<b>2.00</b>	<b>30.00</b>
<b>Organizational Sanctions</b>	<b>32</b>	<b>4.12</b>	<b>1.02</b>	<b>1.75</b>	<b>6.00</b>

<b>Supervisory Group = 11 Female=7 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>7</b>	<b>4.59</b>	<b>3.92</b>	<b>0.42</b>	<b>10.73</b>
<b>12-Month Absence Frequency</b>	<b>7</b>	<b>7.29</b>	<b>5.35</b>	<b>1.00</b>	<b>16.00</b>
<b>Age</b>	<b>7</b>	<b>37.29</b>	<b>14.57</b>	<b>18.00</b>	<b>57.00</b>
<b>Tenure</b>	<b>7</b>	<b>108.57</b>	<b>83.91</b>	<b>0.00</b>	<b>225.00</b>
<b>Attendance Encouragement</b>	<b>7</b>	<b>5.24</b>	<b>0.42</b>	<b>5.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>7</b>	<b>2.86</b>	<b>1.35</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>7</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>
<b>Rationalization</b>	<b>7</b>	<b>2.54</b>	<b>0.35</b>	<b>2.17</b>	<b>3.17</b>
<b>Acceptable Level of Absence</b>	<b>7</b>	<b>6.00</b>	<b>4.16</b>	<b>3.00</b>	<b>15.00</b>
<b>Organizational Sanctions</b>	<b>7</b>	<b>4.29</b>	<b>0.96</b>	<b>3.00</b>	<b>6.00</b>

<b>Supervisory Group = 12 Female=29 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>29</b>	<b>4.69</b>	<b>4.09</b>	<b>0.00</b>	<b>15.91</b>
<b>12-Month Absence Frequency</b>	<b>29</b>	<b>7.52</b>	<b>6.53</b>	<b>0.00</b>	<b>28.00</b>
<b>Age</b>	<b>29</b>	<b>38.38</b>	<b>12.13</b>	<b>18.00</b>	<b>66.00</b>
<b>Tenure</b>	<b>29</b>	<b>89.38</b>	<b>77.93</b>	<b>3.00</b>	<b>335.00</b>
<b>Attendance Encouragement</b>	<b>29</b>	<b>5.28</b>	<b>0.55</b>	<b>4.33</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>29</b>	<b>2.07</b>	<b>1.41</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>29</b>	<b>2.34</b>	<b>1.34</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>29</b>	<b>2.90</b>	<b>0.72</b>	<b>1.14</b>	<b>4.43</b>
<b>Acceptable Level of Absence</b>	<b>29</b>	<b>7.90</b>	<b>3.73</b>	<b>2.00</b>	<b>20.00</b>
<b>Organizational Sanctions</b>	<b>29</b>	<b>4.03</b>	<b>0.91</b>	<b>2.00</b>	<b>5.25</b>

<b>Supervisory Group = 13 Female=11 Male=7</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>18</b>	<b>1.38</b>	<b>1.08</b>	<b>0.00</b>	<b>3.81</b>
<b>12-Month Absence Frequency</b>	<b>18</b>	<b>2.50</b>	<b>2.18</b>	<b>0.00</b>	<b>8.00</b>
<b>Age</b>	<b>18</b>	<b>31.94</b>	<b>10.52</b>	<b>22.00</b>	<b>54.00</b>
<b>Tenure</b>	<b>18</b>	<b>46.44</b>	<b>28.30</b>	<b>5.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>18</b>	<b>5.20</b>	<b>0.60</b>	<b>4.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>18</b>	<b>2.18</b>	<b>1.29</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>18</b>	<b>2.11</b>	<b>1.18</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>18</b>	<b>2.51</b>	<b>0.64</b>	<b>1.29</b>	<b>3.86</b>
<b>Acceptable Level of Absence</b>	<b>18</b>	<b>5.72</b>	<b>3.63</b>	<b>0.00</b>	<b>13.00</b>
<b>Organizational Sanctions</b>	<b>18</b>	<b>4.48</b>	<b>0.63</b>	<b>3.50</b>	<b>5.50</b>

<b>Supervisory Group = 14 Female = 2 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>2</b>	<b>2.01</b>	<b>1.73</b>	<b>0.79</b>	<b>3.23</b>
<b>12-Month Absence Frequency</b>	<b>2</b>	<b>5.00</b>	<b>4.24</b>	<b>2.00</b>	<b>8.00</b>
<b>Age</b>	<b>2</b>	<b>43.00</b>	<b>7.07</b>	<b>38.00</b>	<b>48.00</b>
<b>Tenure</b>	<b>2</b>	<b>37.00</b>	<b>0.00</b>	<b>37.00</b>	<b>37.00</b>
<b>Attendance Encouragement</b>	<b>2</b>	<b>5.50</b>	<b>0.71</b>	<b>5.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>2</b>	<b>2.50</b>	<b>2.12</b>	<b>1.00</b>	<b>4.00</b>
<b>Employee Pressure</b>	<b>2</b>	<b>1.50</b>	<b>0.71</b>	<b>1.00</b>	<b>2.00</b>
<b>Rationalization</b>	<b>2</b>	<b>2.43</b>	<b>0.61</b>	<b>2.00</b>	<b>2.86</b>
<b>Acceptable Level of Absence</b>	<b>2</b>	<b>7.50</b>	<b>3.54</b>	<b>5.0</b>	<b>10.0</b>
<b>Organizational Sanctions</b>	<b>2</b>	<b>3.88</b>	<b>0.53</b>	<b>3.50</b>	<b>4.25</b>

<b>Supervisory Group = 15 Female = 37 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>37</b>	<b>3.82</b>	<b>3.06</b>	<b>0.00</b>	<b>12.86</b>
<b>12-Month Absence Frequency</b>	<b>37</b>	<b>6.22</b>	<b>4.45</b>	<b>0.00</b>	<b>16.00</b>
<b>Age</b>	<b>37</b>	<b>39.97</b>	<b>11.68</b>	<b>20.00</b>	<b>62.00</b>
<b>Tenure</b>	<b>37</b>	<b>55.22</b>	<b>33.36</b>	<b>1.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>37</b>	<b>5.27</b>	<b>0.54</b>	<b>3.67</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>37</b>	<b>2.47</b>	<b>1.45</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>37</b>	<b>2.18</b>	<b>1.00</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>37</b>	<b>2.63</b>	<b>0.70</b>	<b>1.00</b>	<b>4.00</b>
<b>Acceptable Level of Absence</b>	<b>37</b>	<b>14.24</b>	<b>10.29</b>	<b>0.00</b>	<b>48.00</b>
<b>Organizational Sanctions</b>	<b>37</b>	<b>4.09</b>	<b>0.80</b>	<b>2.75</b>	<b>6.00</b>

<b>Supervisory Group = 16 Female=40 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	40	4.64	3.54	0.00	13.30
<b>12-Month Absence Frequency</b>	40	7.83	5.84	0.00	21.00
<b>Age</b>	40	36.58	10.62	19.00	63.00
<b>Tenure</b>	40	60.65	29.43	0.00	91.00
<b>Attendance Encouragement</b>	40	5.12	0.57	3.67	6.00
<b>Management's Goal</b>	40	2.97	1.33	1.00	5.00
<b>Employee Pressure</b>	40	2.03	0.92	1.00	5.00
<b>Rationalization</b>	40	2.61	0.74	1.20	4.25
<b>Acceptable Level of Absence</b>	40	12.58	7.40	3.00	36.00
<b>Organizational Sanctions</b>	40	3.84	0.87	1.50	5.25

<b>Supervisory Group = 17 Female=45 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	45	4.20	3.26	0.00	12.77
<b>12-Month Absence Frequency</b>	45	7.80	5.36	0.00	21.00
<b>Age</b>	45	35.56	11.36	18.00	69.00
<b>Tenure</b>	45	51.60	31.62	0.00	91.00
<b>Attendance Encouragement</b>	45	5.25	0.67	3.33	6.0
<b>Management's Goal</b>	45	2.07	1.24	1.00	5.00
<b>Employee Pressure</b>	45	2.13	0.91	1.00	5.00
<b>Rationalization</b>	45	3.06	0.89	1.57	5.57
<b>Acceptable Level of Absence</b>	45	14.07	9.40	0.00	40.00
<b>Organizational Sanctions</b>	45	4.07	0.80	2.00	5.75

<b>Supervisory Group = 18 Female = 2 Male = 1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	3	2.09	1.94	0.00	3.84
12-Month Absence Frequency	3	3.00	3.00	0.00	6.00
Age	3	32.00	5.00	27.00	37.00
Tenure	3	51.67	37.45	20.00	93.00
Attendance Encouragement	3	4.78	1.17	3.67	6.00
Management's Goal	3	2.67	1.53	1.00	4.00
Employee Pressure	3	2.33	1.53	1.00	4.00
Rationalization	3	2.48	1.33	1.57	4.00
Acceptable Level of Absence	3	8.67	5.51	5.00	15.00
Organizational Sanctions	3	3.97	0.87	3.00	4.67

<b>Supervisory Group = 19 Female = 35 Male = 1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	36	3.89	2.86	0.00	11.30
12-Month Absence Frequency	36	6.50	4.97	0.00	22.00
Age	36	36.11	11.67	18.00	61.00
Tenure	36	49.50	35.33	0.00	91.00
Attendance Encouragement	36	5.06	0.63	3.67	6.00
Management's Goal	36	2.56	1.58	1.00	5.00
Employee Pressure	36	2.58	1.35	1.00	6.00
Rationalization	36	2.74	0.76	1.71	5.57
Acceptable Level of Absence	36	13.44	10.05	1.00	36.00
Organizational Sanctions	36	4.19	0.95	2.00	5.50

<b>Supervisory Group = 20 Female=35 Male=1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>36</b>	<b>4.45</b>	<b>3.74</b>	<b>0.00</b>	<b>13.96</b>
<b>12-Month Absence Frequency</b>	<b>36</b>	<b>7.47</b>	<b>5.59</b>	<b>0.00</b>	<b>18.00</b>
<b>Age</b>	<b>36</b>	<b>31.97</b>	<b>9.06</b>	<b>19.00</b>	<b>56.00</b>
<b>Tenure</b>	<b>36</b>	<b>23.83</b>	<b>27.44</b>	<b>4.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>36</b>	<b>5.14</b>	<b>0.96</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>36</b>	<b>2.36</b>	<b>1.28</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>36</b>	<b>2.12</b>	<b>.98</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>36</b>	<b>2.68</b>	<b>0.66</b>	<b>1.57</b>	<b>4.00</b>
<b>Acceptable Level of Absence</b>	<b>36</b>	<b>14.97</b>	<b>9.48</b>	<b>4.00</b>	<b>36.00</b>
<b>Organizational Sanctions</b>	<b>36</b>	<b>4.27</b>	<b>0.90</b>	<b>1.75</b>	<b>6.00</b>

<b>Supervisory Group = 21 Female=30 Male=2</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>32</b>	<b>3.72</b>	<b>3.45</b>	<b>0.00</b>	<b>15.46</b>
<b>12-Month Absence Frequency</b>	<b>32</b>	<b>5.47</b>	<b>3.93</b>	<b>0.00</b>	<b>17.00</b>
<b>Age</b>	<b>32</b>	<b>41.69</b>	<b>11.40</b>	<b>19.00</b>	<b>65.00</b>
<b>Tenure</b>	<b>32</b>	<b>65.97</b>	<b>28.30</b>	<b>0.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>32</b>	<b>4.82</b>	<b>0.98</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>32</b>	<b>1.83</b>	<b>1.19</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>32</b>	<b>2.21</b>	<b>1.15</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>32</b>	<b>2.60</b>	<b>0.46</b>	<b>2.00</b>	<b>3.71</b>
<b>Acceptable Level of Absence</b>	<b>32</b>	<b>9.06</b>	<b>6.71</b>	<b>0.00</b>	<b>25.00</b>
<b>Organizational Sanctions</b>	<b>32</b>	<b>3.79</b>	<b>0.89</b>	<b>2.25</b>	<b>6.00</b>

<b>Supervisory Group = 22 Female=38 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>38</b>	<b>4.57</b>	<b>3.83</b>	<b>0.00</b>	<b>15.64</b>
<b>12-Month Absence Frequency</b>	<b>38</b>	<b>7.76</b>	<b>5.44</b>	<b>0.00</b>	<b>23.00</b>
<b>Age</b>	<b>38</b>	<b>33.13</b>	<b>10.15</b>	<b>19.00</b>	<b>57.00</b>
<b>Tenure</b>	<b>38</b>	<b>48.39</b>	<b>32.83</b>	<b>1.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>38</b>	<b>4.91</b>	<b>0.73</b>	<b>3.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>38</b>	<b>1.90</b>	<b>1.12</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>38</b>	<b>2.14</b>	<b>1.02</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>38</b>	<b>2.95</b>	<b>0.83</b>	<b>1.43</b>	<b>5.29</b>
<b>Acceptable Level of Absence</b>	<b>38</b>	<b>19.26</b>	<b>14.32</b>	<b>0.00</b>	<b>76.00</b>
<b>Organizational Sanctions</b>	<b>38</b>	<b>4.01</b>	<b>0.78</b>	<b>2.50</b>	<b>5.75</b>

<b>Supervisory Group = 23 Female=5 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>5</b>	<b>2.15</b>	<b>3.75</b>	<b>0.00</b>	<b>8.79</b>
<b>12-Month Absence Frequency</b>	<b>5</b>	<b>3.60</b>	<b>5.41</b>	<b>0.00</b>	<b>13.00</b>
<b>Age</b>	<b>5</b>	<b>43.20</b>	<b>8.07</b>	<b>32.00</b>	<b>54.00</b>
<b>Tenure</b>	<b>5</b>	<b>60.00</b>	<b>40.96</b>	<b>5.00</b>	<b>91.00</b>
<b>Attendance Encouragement</b>	<b>5</b>	<b>5.67</b>	<b>0.47</b>	<b>5.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>5</b>	<b>2.00</b>	<b>1.73</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>5</b>	<b>2.00</b>	<b>1.22</b>	<b>1.00</b>	<b>4.00</b>
<b>Rationalization</b>	<b>5</b>	<b>2.21</b>	<b>0.36</b>	<b>1.71</b>	<b>2.57</b>
<b>Acceptable Level of Absence</b>	<b>5</b>	<b>17.60</b>	<b>10.71</b>	<b>10.00</b>	<b>36.00</b>
<b>Organizational Sanctions</b>	<b>5</b>	<b>4.70</b>	<b>1.41</b>	<b>2.67</b>	<b>5.33</b>



<b>Supervisory Group = 24 Female=31 Male=1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>32</b>	<b>4.90</b>	<b>5.23</b>	<b>0.00</b>	<b>20.12</b>
<b>12-Month Absence Frequency</b>	<b>32</b>	<b>6.25</b>	<b>5.56</b>	<b>0.00</b>	<b>18.00</b>
<b>Age</b>	<b>32</b>	<b>34.69</b>	<b>12.06</b>	<b>19.00</b>	<b>60.00</b>
<b>Tenure</b>	<b>32</b>	<b>46.00</b>	<b>59.64</b>	<b>0.00</b>	<b>205.00</b>
<b>Attendance Encouragement</b>	<b>32</b>	<b>4.94</b>	<b>0.90</b>	<b>2.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>32</b>	<b>2.21</b>	<b>1.37</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>32</b>	<b>1.97</b>	<b>0.93</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>32</b>	<b>2.81</b>	<b>0.82</b>	<b>1.00</b>	<b>4.29</b>
<b>Acceptable Level of Absence</b>	<b>32</b>	<b>10.09</b>	<b>7.84</b>	<b>0.00</b>	<b>30.00</b>
<b>Organizational Sanctions</b>	<b>32</b>	<b>4.16</b>	<b>0.80</b>	<b>2.00</b>	<b>5.75</b>

<b>Supervisory Group = 25 Female=14 Male=8</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>22</b>	<b>1.61</b>	<b>1.48</b>	<b>0.00</b>	<b>5.20</b>
<b>12-Month Absence Frequency</b>	<b>22</b>	<b>2.68</b>	<b>2.40</b>	<b>0.00</b>	<b>9.00</b>
<b>Age</b>	<b>22</b>	<b>32.55</b>	<b>13.19</b>	<b>17.00</b>	<b>58.00</b>
<b>Tenure</b>	<b>22</b>	<b>45.95</b>	<b>52.68</b>	<b>1.00</b>	<b>166.00</b>
<b>Attendance Encouragement</b>	<b>22</b>	<b>4.82</b>	<b>1.20</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>22</b>	<b>1.40</b>	<b>0.78</b>	<b>1.00</b>	<b>4.00</b>
<b>Employee Pressure</b>	<b>22</b>	<b>2.05</b>	<b>1.36</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>22</b>	<b>2.49</b>	<b>0.84</b>	<b>1.00</b>	<b>5.00</b>
<b>Acceptable Level of Absence</b>	<b>22</b>	<b>5.82</b>	<b>4.03</b>	<b>0.00</b>	<b>15.00</b>
<b>Organizational Sanctions</b>	<b>22</b>	<b>4.68</b>	<b>0.72</b>	<b>3.33</b>	<b>6.00</b>

<b>Supervisory Group = 26 Female = 16 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	16	2.24	2.37	0.00	7.94
12-Month Absence Frequency	16	2.63	3.30	0.00	12.00
Age	16	43.25	12.13	20.00	60.00
Tenure	16	116.94	96.10	2.00	318.00
Attendance Encouragement	16	5.10	0.63	3.67	6.00
Management's Goal	16	1.87	1.26	1.00	5.00
Employee Pressure	16	1.91	0.44	1.00	3.00
Rationalization	16	2.37	0.50	1.71	3.57
Acceptable Level of Absence	16	8.19	7.03	0.00	30.00
Organizational Sanctions	16	4.39	0.90	3.00	6.00

<b>Supervisory Group = 27 Female = 34 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	34	3.28	3.51	0.00	14.67
12-Month Absence Frequency	34	5.62	5.50	0.00	20.00
Age	34	34.71	11.00	18.00	58.00
Tenure	34	76.35	87.65	0.00	306.00
Attendance Encouragement	34	4.92	1.06	2.00	6.00
Management's Goal	34	2.45	1.43	1.00	5.00
Employee Pressure	34	2.00	0.85	1.00	5.00
Rationalization	34	2.84	0.72	1.67	4.71
Acceptable Level of Absence	34	9.74	6.42	0.00	36.00
Organizational Sanctions	34	4.54	0.81	2.50	5.75

<b>Supervisory Group = 28 Female=48 Male=3</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>51</b>	<b>3.81</b>	<b>5.32</b>	<b>0.00</b>	<b>23.98</b>
<b>12-Month Absence Frequency</b>	<b>51</b>	<b>4.08</b>	<b>4.47</b>	<b>0.00</b>	<b>15.00</b>
<b>Age</b>	<b>51</b>	<b>40.27</b>	<b>14.06</b>	<b>19.00</b>	<b>63.00</b>
<b>Tenure</b>	<b>51</b>	<b>70.63</b>	<b>85.79</b>	<b>2.00</b>	<b>316.00</b>
<b>Attendance Encouragement</b>	<b>51</b>	<b>5.28</b>	<b>0.61</b>	<b>3.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>51</b>	<b>1.58</b>	<b>1.14</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>51</b>	<b>2.26</b>	<b>1.26</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>51</b>	<b>2.70</b>	<b>0.91</b>	<b>1.00</b>	<b>5.67</b>
<b>Acceptable Level of Absence</b>	<b>51</b>	<b>6.69</b>	<b>9.29</b>	<b>0.00</b>	<b>60.00</b>
<b>Organizational Sanctions</b>	<b>51</b>	<b>4.44</b>	<b>0.88</b>	<b>2.50</b>	<b>6.00</b>

<b>Supervisory Group = 29 Female=10 Male=1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>11</b>	<b>3.84</b>	<b>4.08</b>	<b>0.40</b>	<b>14.09</b>
<b>12-Month Absence Frequency</b>	<b>11</b>	<b>6.00</b>	<b>5.23</b>	<b>1.00</b>	<b>17.00</b>
<b>Age</b>	<b>11</b>	<b>39.45</b>	<b>11.73</b>	<b>19.00</b>	<b>55.00</b>
<b>Tenure</b>	<b>11</b>	<b>116.82</b>	<b>91.84</b>	<b>3.00</b>	<b>264.00</b>
<b>Attendance Encouragement</b>	<b>11</b>	<b>5.09</b>	<b>0.70</b>	<b>4.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>11</b>	<b>2.18</b>	<b>1.33</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>11</b>	<b>2.00</b>	<b>0.63</b>	<b>1.00</b>	<b>3.00</b>
<b>Rationalization</b>	<b>11</b>	<b>2.52</b>	<b>0.69</b>	<b>1.14</b>	<b>3.6</b>
<b>Acceptable Level of Absence</b>	<b>11</b>	<b>8.55</b>	<b>6.30</b>	<b>0.00</b>	<b>24.00</b>
<b>Organizational Sanctions</b>	<b>11</b>	<b>3.94</b>	<b>0.97</b>	<b>2.25</b>	<b>5.50</b>

<b>Supervisory Group = 30 Female = 35 Male = 1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>36</b>	<b>6.55</b>	<b>5.35</b>	<b>0.76</b>	<b>26.20</b>
<b>12-Month Absence Frequency</b>	<b>36</b>	<b>11.08</b>	<b>7.34</b>	<b>2.00</b>	<b>33.00</b>
<b>Age</b>	<b>36</b>	<b>35.97</b>	<b>10.80</b>	<b>18.00</b>	<b>63.00</b>
<b>Tenure</b>	<b>36</b>	<b>54.11</b>	<b>54.57</b>	<b>3.00</b>	<b>181.00</b>
<b>Attendance Encouragement</b>	<b>36</b>	<b>4.98</b>	<b>0.76</b>	<b>3.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>36</b>	<b>3.14</b>	<b>1.39</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>36</b>	<b>2.37</b>	<b>1.27</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>36</b>	<b>3.19</b>	<b>0.76</b>	<b>1.83</b>	<b>4.71</b>
<b>Acceptable Level of Absence</b>	<b>36</b>	<b>12.56</b>	<b>7.26</b>	<b>2.00</b>	<b>36.00</b>
<b>Organizational Sanctions</b>	<b>36</b>	<b>4.03</b>	<b>1.01</b>	<b>1.75</b>	<b>5.75</b>

<b>Supervisory Group = 31 Female = 40 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>40</b>	<b>5.08</b>	<b>3.98</b>	<b>0.00</b>	<b>15.92</b>
<b>12-Month Absence Frequency</b>	<b>40</b>	<b>8.18</b>	<b>6.30</b>	<b>0.00</b>	<b>28.00</b>
<b>Age</b>	<b>40</b>	<b>37.73</b>	<b>12.10</b>	<b>19.00</b>	<b>60.00</b>
<b>Tenure</b>	<b>40</b>	<b>42.35</b>	<b>37.47</b>	<b>1.00</b>	<b>120.00</b>
<b>Attendance Encouragement</b>	<b>40</b>	<b>5.06</b>	<b>0.59</b>	<b>3.33</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>40</b>	<b>2.53</b>	<b>1.16</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>40</b>	<b>2.47</b>	<b>1.06</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>40</b>	<b>2.93</b>	<b>0.78</b>	<b>1.43</b>	<b>4.67</b>
<b>Acceptable Level of Absence</b>	<b>40</b>	<b>11.33</b>	<b>7.11</b>	<b>2.00</b>	<b>35.00</b>
<b>Organizational Sanctions</b>	<b>40</b>	<b>4.15</b>	<b>0.86</b>	<b>2.00</b>	<b>6.00</b>

<b>Supervisory Group = 32 Female=9 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>9</b>	<b>7.71</b>	<b>10.45</b>	<b>0.00</b>	<b>30.67</b>
<b>12-Month Absence Frequency</b>	<b>9</b>	<b>11.00</b>	<b>11.86</b>	<b>0.00</b>	<b>28.00</b>
<b>Age</b>	<b>9</b>	<b>38.56</b>	<b>11.99</b>	<b>23.00</b>	<b>58.00</b>
<b>Tenure</b>	<b>9</b>	<b>32.33</b>	<b>34.75</b>	<b>3.00</b>	<b>114.00</b>
<b>Attendance Encouragement</b>	<b>9</b>	<b>5.19</b>	<b>0.65</b>	<b>4.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>9</b>	<b>2.79</b>	<b>0.86</b>	<b>1.00</b>	<b>4.00</b>
<b>Employee Pressure</b>	<b>9</b>	<b>2.22</b>	<b>1.09</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>9</b>	<b>2.69</b>	<b>0.67</b>	<b>1.71</b>	<b>3.71</b>
<b>Acceptable Level of Absence</b>	<b>9</b>	<b>9.33</b>	<b>4.12</b>	<b>2.00</b>	<b>15.00</b>
<b>Organizational Sanctions</b>	<b>9</b>	<b>4.19</b>	<b>1.11</b>	<b>2.25</b>	<b>5.50</b>

<b>Supervisory Group = 33 Female=40 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>40</b>	<b>3.78</b>	<b>3.29</b>	<b>0.00</b>	<b>11.00</b>
<b>12-Month Absence Frequency</b>	<b>40</b>	<b>6.63</b>	<b>5.41</b>	<b>0.00</b>	<b>20.00</b>
<b>Age</b>	<b>40</b>	<b>32.30</b>	<b>10.35</b>	<b>18.00</b>	<b>59.00</b>
<b>Tenure</b>	<b>40</b>	<b>44.00</b>	<b>43.76</b>	<b>1.00</b>	<b>144.00</b>
<b>Attendance Encouragement</b>	<b>40</b>	<b>4.95</b>	<b>0.79</b>	<b>2.67</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>40</b>	<b>2.70</b>	<b>1.22</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>40</b>	<b>2.08</b>	<b>0.86</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>40</b>	<b>2.87</b>	<b>0.89</b>	<b>1.00</b>	<b>4.43</b>
<b>Acceptable Level of Absence</b>	<b>40</b>	<b>9.90</b>	<b>8.18</b>	<b>0.00</b>	<b>36.00</b>
<b>Organizational Sanctions</b>	<b>40</b>	<b>3.77</b>	<b>1.06</b>	<b>1.75</b>	<b>5.50</b>

<b>Supervisory Group = 34 Female=21 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	21	4.68	3.48	0.00	11.75
12-Month Absence Frequency	21	7.71	5.21	0.00	21.00
Age	21	38.10	10.45	22.00	59.00
Tenure	21	73.95	52.11	0.00	162.00
Attendance Encouragement	21	5.08	0.56	3.33	6.00
Management's Goal	21	2.53	0.97	1.00	4.00
Employee Pressure	21	2.60	1.16	1.00	5.00
Rationalization	21	3.00	0.58	2.00	4.33
Acceptable Level of Absence	21	11.05	18.67	0.00	90.00
Organizational Sanctions	21	3.83	0.98	2.00	5.50

<b>Supervisory Group = 35 Female=47 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
12-Month Absence Rate	47	4.05	4.05	0.00	17.10
12-Month Absence Frequency	47	6.11	4.90	0.00	20.00
Age	47	38.47	10.96	20.00	60.00
Tenure	47	71.30	61.32	0.00	180.00
Attendance Encouragement	47	5.04	0.82	2.00	6.00
Management's Goal	47	2.22	1.22	1.00	5.00
Employee Pressure	47	2.07	1.05	1.00	6.00
Rationalization	47	2.74	0.72	1.14	4.14
Acceptable Level of Absence	47	9.11	9.85	0.00	60.00
Organizational Sanctions	47	3.93	1.07	1.50	6.00

<b>Supervisory Group = 36 Female=26 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>26</b>	<b>6.61</b>	<b>6.22</b>	<b>0.00</b>	<b>21.79</b>
<b>12-Month Absence Frequency</b>	<b>26</b>	<b>10.38</b>	<b>8.80</b>	<b>0.00</b>	<b>32.00</b>
<b>Age</b>	<b>26</b>	<b>33.42</b>	<b>10.25</b>	<b>21.00</b>	<b>56.00</b>
<b>Tenure</b>	<b>26</b>	<b>60.50</b>	<b>52.74</b>	<b>1.00</b>	<b>161.00</b>
<b>Attendance Encouragement</b>	<b>26</b>	<b>4.80</b>	<b>0.74</b>	<b>3.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>26</b>	<b>2.16</b>	<b>1.14</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>26</b>	<b>2.13</b>	<b>0.51</b>	<b>1.00</b>	<b>3.00</b>
<b>Rationalization</b>	<b>26</b>	<b>2.83</b>	<b>0.70</b>	<b>1.80</b>	<b>4.43</b>
<b>Acceptable Level of Absence</b>	<b>26</b>	<b>8.85</b>	<b>6.18</b>	<b>0.00</b>	<b>30.00</b>
<b>Organizational Sanctions</b>	<b>26</b>	<b>3.71</b>	<b>1.04</b>	<b>2.00</b>	<b>6.00</b>

<b>Supervisory Group = 37 Female=47 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>47</b>	<b>5.26</b>	<b>4.15</b>	<b>0.68</b>	<b>20.58</b>
<b>12-Month Absence Frequency</b>	<b>47</b>	<b>8.45</b>	<b>6.42</b>	<b>1.00</b>	<b>26.00</b>
<b>Age</b>	<b>47</b>	<b>37.19</b>	<b>11.17</b>	<b>20.00</b>	<b>61.00</b>
<b>Tenure</b>	<b>47</b>	<b>71.00</b>	<b>52.00</b>	<b>1.00</b>	<b>162.00</b>
<b>Attendance Encouragement</b>	<b>47</b>	<b>5.01</b>	<b>0.69</b>	<b>2.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>47</b>	<b>2.08</b>	<b>1.13</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>47</b>	<b>2.14</b>	<b>1.01</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>47</b>	<b>2.91</b>	<b>0.78</b>	<b>1.00</b>	<b>4.43</b>
<b>Acceptable Level of Absence</b>	<b>47</b>	<b>9.81</b>	<b>4.60</b>	<b>3.00</b>	<b>25.00</b>
<b>Organizational Sanctions</b>	<b>47</b>	<b>3.92</b>	<b>1.02</b>	<b>1.33</b>	<b>6.00</b>

<b>Supervisory Group = 38 Female=24 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	24	6.50	5.17	0.00	16.14
<b>12-Month Absence Frequency</b>	24	10.29	7.50	0.00	25.00
<b>Age</b>	24	37.21	12.68	19.00	61.00
<b>Tenure</b>	24	62.88	52.12	8.00	162.00
<b>Attendance Encouragement</b>	24	4.81	0.91	2.33	6.00
<b>Management's Goal</b>	24	2.05	1.12	1.00	4.00
<b>Employee Pressure</b>	24	2.29	1.30	1.00	6.00
<b>Rationalization</b>	24	2.76	0.92	1.43	5.00
<b>Acceptable Level of Absence</b>	24	9.75	5.10	3.00	20.00
<b>Organizational Sanctions</b>	24	3.93	0.98	1.75	5.75

<b>Supervisory Group = 39 Female=6 Male=4</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	10	3.29	2.59	0.00	7.80
<b>12-Month Absence Frequency</b>	10	4.70	2.50	0.00	8.00
<b>Age</b>	10	41.10	13.30	25.00	62.00
<b>Tenure</b>	10	123.50	26.50	71.00	154.00
<b>Attendance Encouragement</b>	10	4.90	1.14	2.00	6.00
<b>Management's Goal</b>	10	2.50	1.63	1.00	5.00
<b>Employee Pressure</b>	10	2.67	0.94	2.00	5.00
<b>Rationalization</b>	10	3.32	0.92	2.00	4.71
<b>Acceptable Level of Absence</b>	10	11.40	6.52	3.00	20.00
<b>Organizational Sanctions</b>	10	3.95	0.98	2.00	5.50



Supervisory Group = 40 Female = 19 Male = 1	N	Mean	Standard Deviation	Minimum Value	Maximum Value
12-Month Absence Rate	20	5.16	3.08	0.40	10.55
12-Month Absence Frequency	20	9.45	6.26	1.00	23.00
Age	20	32.95	10.89	20.00	58.00
Tenure	20	49.40	50.23	8.00	152.00
Attendance Encouragement	20	4.62	0.72	3.00	6.00
Management's Goal	20	1.91	0.98	1.00	4.00
Employee Pressure	20	2.42	1.23	1.00	5.00
Rationalization	20	2.92	0.64	1.71	4.29
Acceptable Level of Absence	20	15.35	18.43	0.00	75.00
Organizational Sanctions	20	3.87	0.79	2.33	5.25

Supervisory Group = 41 Female = 8 Male = 0	N	Mean	Standard Deviation	Minimum Value	Maximum Value
12-Month Absence Rate	8	4.00	1.96	2.22	8.34
12-Month Absence Frequency	8	6.63	2.45	4.00	10.00
Age	8	41.25	12.28	23.00	60.00
Tenure	8	57.25	51.03	0.00	130.00
Attendance Encouragement	8	5.54	0.50	5.00	6.00
Management's Goal	8	2.86	1.73	1.00	5.00
Employee Pressure	8	1.71	0.45	1.00	2.00
Rationalization	8	3.15	0.48	2.29	3.86
Acceptable Level of Absence	8	7.75	2.12	5.00	10.00
Organizational Sanctions	8	3.69	1.02	2.25	5.25

<b>Supervisory Group = 42 Female=25 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>25</b>	<b>5.08</b>	<b>4.75</b>	<b>0.00</b>	<b>15.16</b>
<b>12-Month Absence Frequency</b>	<b>25</b>	<b>7.72</b>	<b>6.99</b>	<b>0.00</b>	<b>23.00</b>
<b>Age</b>	<b>25</b>	<b>36.44</b>	<b>12.37</b>	<b>18.00</b>	<b>58.00</b>
<b>Tenure</b>	<b>25</b>	<b>71.52</b>	<b>69.78</b>	<b>1.00</b>	<b>312.00</b>
<b>Attendance Encouragement</b>	<b>25</b>	<b>5.36</b>	<b>0.48</b>	<b>4.67</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>25</b>	<b>2.10</b>	<b>1.26</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>25</b>	<b>2.22</b>	<b>1.04</b>	<b>1.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>25</b>	<b>2.94</b>	<b>0.96</b>	<b>1.71</b>	<b>5.29</b>
<b>Acceptable Level of Absence</b>	<b>25</b>	<b>6.68</b>	<b>4.70</b>	<b>0.00</b>	<b>24.00</b>
<b>Organizational Sanctions</b>	<b>25</b>	<b>4.18</b>	<b>0.97</b>	<b>2.67</b>	<b>6.00</b>

<b>Supervisory Group = 43 Female=7 Male=1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>8</b>	<b>1.44</b>	<b>2.89</b>	<b>0.00</b>	<b>6.36</b>
<b>12-Month Absence Frequency</b>	<b>8</b>	<b>1.38</b>	<b>2.56</b>	<b>0.00</b>	<b>6.00</b>
<b>Age</b>	<b>8</b>	<b>44.25</b>	<b>11.55</b>	<b>26.00</b>	<b>60.00</b>
<b>Tenure</b>	<b>8</b>	<b>193.63</b>	<b>67.25</b>	<b>94.00</b>	<b>302.00</b>
<b>Attendance Encouragement</b>	<b>8</b>	<b>5.33</b>	<b>0.36</b>	<b>5.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>8</b>	<b>1.17</b>	<b>0.35</b>	<b>1.00</b>	<b>2.00</b>
<b>Employee Pressure</b>	<b>8</b>	<b>3.00</b>	<b>1.20</b>	<b>2.00</b>	<b>5.00</b>
<b>Rationalization</b>	<b>8</b>	<b>2.46</b>	<b>0.85</b>	<b>1.71</b>	<b>4.00</b>
<b>Acceptable Level of Absence</b>	<b>8</b>	<b>9.13</b>	<b>2.10</b>	<b>6.00</b>	<b>12.00</b>
<b>Organizational Sanctions</b>	<b>8</b>	<b>4.30</b>	<b>0.84</b>	<b>3.25</b>	<b>5.67</b>

<b>Supervisory Group = 44 Female = 10 Male = 2</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	12	5.66	8.88	0.00	29.63
<b>12-Month Absence Frequency</b>	12	4.58	4.87	0.00	13.00
<b>Age</b>	12	39.67	17.16	19.00	66.00
<b>Tenure</b>	12	41.50	54.14	3.00	155.00
<b>Attendance Encouragement</b>	12	5.06	0.76	3.67	6.00
<b>Management's Goal</b>	12	2.27	1.21	1.00	4.00
<b>Employee Pressure</b>	12	2.75	1.26	1.00	6.00
<b>Rationalization</b>	12	2.97	0.76	2.00	4.57
<b>Acceptable Level of Absence</b>	12	5.75	2.60	0.00	10.00
<b>Organizational Sanctions</b>	12	4.77	0.77	3.50	6.00

<b>Supervisory Group = 45 Female = 35 Male = 0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	35	3.44	4.40	0.00	15.41
<b>12-Month Absence Frequency</b>	35	4.69	4.83	0.00	17.00
<b>Age</b>	35	40.06	12.36	20.00	68.00
<b>Tenure</b>	35	109.54	94.73	0.00	286.00
<b>Attendance Encouragement</b>	35	4.80	0.99	2.00	6.00
<b>Management's Goal</b>	35	1.86	1.07	1.00	4.00
<b>Employee Pressure</b>	35	2.09	0.92	1.00	5.00
<b>Rationalization</b>	35	2.64	0.79	1.29	4.43
<b>Acceptable Level of Absence</b>	35	6.69	4.96	0.00	30.00
<b>Organizational Sanctions</b>	35	3.85	1.09	2.00	6.00

<b>Supervisory Group = 46 Female=3 Male=0</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>3</b>	<b>3.35</b>	<b>0.46</b>	<b>2.89</b>	<b>3.81</b>
<b>12-Month Absence Frequency</b>	<b>3</b>	<b>5.00</b>	<b>2.00</b>	<b>3.00</b>	<b>7.00</b>
<b>Age</b>	<b>3</b>	<b>35.33</b>	<b>2.52</b>	<b>33.00</b>	<b>38.00</b>
<b>Tenure</b>	<b>3</b>	<b>15.33</b>	<b>7.77</b>	<b>9.00</b>	<b>24.00</b>
<b>Attendance Encouragement</b>	<b>3</b>	<b>5.00</b>	<b>1.00</b>	<b>4.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>3</b>	<b>3.33</b>	<b>2.08</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>3</b>	<b>2.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>
<b>Rationalization</b>	<b>3</b>	<b>2.82</b>	<b>0.71</b>	<b>2.00</b>	<b>3.29</b>
<b>Acceptable Level of Absence</b>	<b>3</b>	<b>7.67</b>	<b>0.58</b>	<b>7.00</b>	<b>8.00</b>
<b>Organizational Sanctions</b>	<b>3</b>	<b>4.25</b>	<b>0.75</b>	<b>3.50</b>	<b>5.00</b>

## Appendix 5

### *Descriptive Statistics at the Plant Level of Analysis*

Plant = 1 Female = 279 Male = 16	N	Mean	Standard Deviation	Minimum Value	Maximum Value
12-Month Absence Rate	295	4.60	5.07	0.00	32.98
12-Month Absence Frequency	295	6.91	6.08	0.00	28.00
Age	295	36.39	11.91	17.00	66.00
Tenure	295	76.88	75.22	0.00	371.00
Attendance Encouragement	295	5.18	0.73	1.00	6.00
Management's Goal	295	2.02	1.29	1.00	5.00
Employee Pressure	295	2.32	1.19	1.00	6.00
Rationalization	295	2.84	0.80	1.00	5.29
Acceptable Level of Absence	295	7.50	5.02	0.00	30.00
Organizational Sanctions	295	4.09	0.99	1.75	6.00

<b>Plant = 2 Female = 280 Male = 12</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>292</b>	<b>3.95</b>	<b>3.35</b>	<b>0.00</b>	<b>15.64</b>
<b>12-Month Absence Frequency</b>	<b>292</b>	<b>6.67</b>	<b>5.15</b>	<b>0.00</b>	<b>23.00</b>
<b>Age</b>	<b>292</b>	<b>36.16</b>	<b>11.11</b>	<b>18.00</b>	<b>69.00</b>
<b>Tenure</b>	<b>292</b>	<b>50.5</b>	<b>32.92</b>	<b>0.00</b>	<b>93.00</b>
<b>Attendance Encouragement</b>	<b>292</b>	<b>5.11</b>	<b>0.74</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>292</b>	<b>2.31</b>	<b>1.36</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>292</b>	<b>2.18</b>	<b>1.06</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>292</b>	<b>2.73</b>	<b>0.75</b>	<b>1.00</b>	<b>5.57</b>
<b>Acceptable Level of Absence</b>	<b>292</b>	<b>13.49</b>	<b>10.09</b>	<b>0.00</b>	<b>76.00</b>
<b>Organizational Sanctions</b>	<b>292</b>	<b>4.08</b>	<b>0.86</b>	<b>1.50</b>	<b>6.00</b>

<b>Plant = 3 Female = 208 Male = 16</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	<b>224</b>	<b>3.51</b>	<b>4.84</b>	<b>0.00</b>	<b>29.63</b>
<b>12-Month Absence Frequency</b>	<b>224</b>	<b>4.51</b>	<b>4.74</b>	<b>0.00</b>	<b>20.00</b>
<b>Age</b>	<b>224</b>	<b>38.05</b>	<b>12.98</b>	<b>17.00</b>	<b>68.00</b>
<b>Tenure</b>	<b>224</b>	<b>79.30</b>	<b>86.03</b>	<b>0.00</b>	<b>318.00</b>
<b>Attendance Encouragement</b>	<b>224</b>	<b>5.02</b>	<b>0.88</b>	<b>1.00</b>	<b>6.00</b>
<b>Management's Goal</b>	<b>224</b>	<b>1.92</b>	<b>1.25</b>	<b>1.00</b>	<b>5.00</b>
<b>Employee Pressure</b>	<b>224</b>	<b>2.14</b>	<b>1.05</b>	<b>1.00</b>	<b>6.00</b>
<b>Rationalization</b>	<b>224</b>	<b>2.68</b>	<b>0.80</b>	<b>1.00</b>	<b>5.67</b>
<b>Acceptable Level of Absence</b>	<b>224</b>	<b>7.80</b>	<b>6.88</b>	<b>0.00</b>	<b>60.00</b>
<b>Organizational Sanctions</b>	<b>224</b>	<b>4.33</b>	<b>0.91</b>	<b>2.00</b>	<b>6.00</b>

<b>Plant = 4 Female = 124 Male = 1</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	125	5.28	5.01	0.00	30.67
<b>12-Month Absence Frequency</b>	125	8.72	7.03	0.00	33.00
<b>Age</b>	125	35.54	11.29	18.00	63.00
<b>Tenure</b>	125	45.54	44.72	1.00	181.00
<b>Attendance Encouragement</b>	125	5.01	0.70	2.67	6.00
<b>Management's Goal</b>	125	2.78	1.24	1.00	5.00
<b>Employee Pressure</b>	125	2.30	1.07	1.00	6.00
<b>Rationalization</b>	125	2.97	0.81	1.00	4.71
<b>Acceptable Level of Absence</b>	125	11.08	7.36	0.00	36.00
<b>Organizational Sanctions</b>	125	4.00	0.99	1.75	6.00

<b>Plant = 5 Female = 198 Male = 5</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum Value</b>	<b>Maximum Value</b>
<b>12-Month Absence Rate</b>	203	5.08	4.36	0.00	21.79
<b>12-Month Absence Frequency</b>	203	8.14	6.38	0.00	32.00
<b>Age</b>	203	37.03	11.29	19.00	62.00
<b>Tenure</b>	203	68.99	54.43	0.00	180.00
<b>Attendance Encouragement</b>	203	4.95	0.78	2.00	6.00
<b>Management's Goal</b>	203	2.20	1.18	1.00	5.00
<b>Employee Pressure</b>	203	2.22	1.04	1.00	6.00
<b>Rationalization</b>	203	2.88	0.74	1.00	5.00
<b>Acceptable Level of Absence</b>	203	10.19	10.33	0.00	90.00
<b>Organizational Sanctions</b>	203	3.87	0.99	1.33	6.00

## Appendix 6

### *Relationship between 12-Month Absence Rate and the Absence Climate Variables with Controls for Gender, Age and Tenure*

ABSENCE CLIMATE VARIABLES	PARTIAL CORRELATIONS			CONDITION	
	Total	Within- Group	Between- Group	Z Score	Infer- ence
<b>SUPERVISORY GROUP</b>					
<b>12-Month Absence Rate, and</b>					
Attendance Encouragement	.031	.043	-.166	-1.36	N
Management's Goal	-.069**	-.052*	-.184	-.86	N
Employee Pressure	.048*	.042	.188	.95	N
Rationalization	.177***	.165***	.303**	.93	E
Acceptable Level of Absence	.147***	.167***	-.101	-1.74	N
Organizational Sanctions	.009	.043	-.316*	-2.39*	B

#### Degrees of Freedom

Within( N-J)  
Between (J-6)  
Total (N-5)

#### Supervisory Group

df = 1093  
df = 46  
df = 1139

p (< or = .05) = \*

p (< or = .01) = \*\*

p (< or = .001) = \*\*\*



## **Appendix 7**

### ***Summary of WABA Equation utilizing 12-Month Absence Rate as the Dependent Variable***

VARIABLES	WITHIN-UNIT COMPONENTS				BETWEEN-UNIT COMPONENTS				TOTAL CORR
	$\eta_{WXI}$	$\eta_{WY}$	$f_{WXY}$	prod	$\eta_{BXI}$	$\eta_{BY}$	$f_{BXY}$	prod	
SUPERVISORY GROUP									
X <sub>1</sub> – Attendance Encouragement	.971	.957	.038	.035	.238	.289	-.173	-.012	.023
X <sub>2</sub> – Management's Goal	.950	.957	-.074	-.035	.312	.289	-.384	-.067	-.102
X <sub>3</sub> – Employee Pressure	.974	.957	.056	.052	.226	.289	.093	.006	.058
X <sub>4</sub> – Rationalization	.962	.957	.216	.199	.271	.289	.449	.035	.234
X <sub>5</sub> – Acceptable Level of Absence	.924	.957	.212	.187	.383	.289	.204	.023	.210
X <sub>6</sub> – Organizational Sanctions	.958	.957	.061	.056	.288	.289	-.469	-.039	.017
PLANT									
X <sub>1</sub> – Attendance Encouragement	.890	.879	-.166	-.130	.456	.477	.199	-.043	-.173
X <sub>2</sub> – Management's Goal	.784	.879	-.329	-.213	.621	.477	-.530	-.282	-.384
X <sub>3</sub> – Employee Pressure	.959	.879	-.009	-.008	.284	.477	.740	.100	.093
X <sub>4</sub> – Rationalization	.901	.879	.310	.245	.434	.477	.986	.204	.449
X <sub>5</sub> – Acceptable Level of Absence	.672	.879	.354	.209	.740	.477	-.014	-.005	.204
X <sub>6</sub> – Organizational Sanctions	.853	.879	-.344	-.256	.522	.477	-.852	-.311	-.469

## Appendix 8

### *Relationship between 12-Month Absence Frequency and the Absence Climate Variables with Controls for Gender, Age and Tenure*

ABSENCE CLIMATE VARIABLES	PARTIAL CORRELATIONS			CONDITION	
	Total	Within- Group	Between- Group	Z Score	Infer- ence
<b>12-Month Absence Frequency, and</b>					
Attendance Encouragement	.023	.038	-.130	-1.09	N
Management's Goal	-.123***	-.095***	-.255*	-1.07	E
Employee Pressure	.053*	.054*	.144	.59	N
Rationalization	.229***	.215***	.352**	.97	E
Acceptable Level of Absence	.219***	.223***	.074	-.91	N
Organizational Sanctions	.004	.056*	-.376***	-2.90**	B

**Degrees of Freedom**

Within( N-J-5)  
Between (J-6)  
Total (N-5)

**Supervisory Group**

df = 1088  
df = 40  
df = 1134

p (< or = .05) = \*

p (< or = .01) = \*\*

p (< or = .001) = \*\*\*

## **Appendix 9**

### ***Summary of WABA Equation utilizing 12-Month Absence Frequency as the Dependent Variable***

VARIABLES	WITHIN-UNIT COMPONENTS				BETWEEN-UNIT COMPONENTS				TOTAL CORR
	$\eta_{wxi}$	$\eta_{wy}$	$f_{wxy}$	prod	$\eta_{bxi}$	$\eta_{by}$	$f_{bxy}$	prod	
SUPERVISORY GROUP									
$X_1$ – Attendance Encouragement	.971	.936	.030	.028	.238	.353	-.189	-.016	.012
$X_2$ – Management's Goal	.950	.936	-.122	-.108	.312	.353	-.500	-.054	-.163
$X_3$ – Employee Pressure	.974	.936	.071	.065	.226	.353	.026	.002	.067
$X_4$ – Rationalization	.962	.936	.277	.250	.271	.353	.567	.054	.304
$X_5$ – Acceptable Level of Absence	.924	.936	.279	.241	.383	.353	.414	.056	.297
$X_6$ – Organizational Sanctions	.958	.936	.077	.069	.288	.353	-.538	-.055	.015
PLANT									
$X_1$ – Attendance Encouragement	.890	.772	-.208	-.143	.456	.635	-.159	-.046	-.189
$X_2$ – Management's Goal	.784	.772	-.352	-.213	.621	.635	-.716	-.282	-.500
$X_3$ – Employee Pressure	.959	.772	-.115	-.085	.284	.635	.615	.111	.026
$X_4$ – Rationalization	.901	.722	.453	.315	.434	.635	.913	.252	.567
$X_5$ – Acceptable Level of Absence	.672	.772	.492	.256	.740	.635	.338	.159	.414
$X_6$ – Organizational Sanctions	.853	.772	-.344	-.227	.522	.635	-.938	-.311	-.538

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