

IMPACT OF INDUSTRIAL RECREATION UPON JOB SATISFACTION AND PRODUCTIVITY

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ABSTRACT

An important issue to the future growth of employee recreation will be the benefits and impacts that a program has upon the individual in relation to company outcomes. This study examined the relationship between a health and fitness program in a major company and its influence upon job satisfaction and productivity. Findings indicate that employee services have a major impact upon job satisfaction and productivity and service as a device to develop leadership and organizational skills to the benefit of the employee and the company.

INTRODUCTION

Employee recreation has been an expanding field within the business and recreation disciplines [1]. One of the primary issues to the future growth of this field will be the benefits and impact it has upon the individual in relation to company outcomes [2-7]. The question, in terms of benefits and outcomes, is one of job satisfaction for the employee and productivity for the company. A problem in studying job satisfaction and productivity in relation to recreation has been one of methodology as well as difficulty in obtaining access to flexible scheduling to conduct studies in companies [7-10]. Many of the methodologies that have been developed to study these questions have been of an experimental and laboratory nature. A difficulty with these studies has been that they have not had wide applicability to the industrial setting.

The question of job satisfaction and productivity in relation to the employee recreation programs must be answered. If it is not, industrial recreation will be a

qualitative science because those factors that improve programs in relation to positive outcomes will be difficult to isolate. At the very core of this question is one of methodology and the ability to quantify relationships to determine the exact impact and how to improve the quality of employee services [2, 11]. At the center of this quantification issue is relationships to illustrate the benefits and impacts, but also a methodology that is related to program change and justification. The purpose of this study is to develop a methodology to quantitatively examine the issue of the relationships between an employee recreation program and job satisfaction and productivity.

A common design used to study job satisfaction and productivity has been a pre-post type [12–14]. The only definitive conclusion from such a design is that an experimental treatment has or has not contributed to the overall impact on job satisfaction and productivity. There are many activities that can take place during a day that may or may not contribute to the development of job satisfaction and productivity [15, 16]. This study was undertaken to pilot test a different design that would help isolate those particular program elements that significantly contribute to positive change in job satisfaction and productivity. The major thrust of this study is one of methodology.

TEST DESIGN

The design utilized is one in which instantaneous measures based upon program components are correlated to a net change of long term measures. Net changes in job satisfaction and productivity were isolated; mood, in terms of program segments were correlated to these changes. Mood was utilized as a short-term social-psychological measure. This gave an indication about those parts of the program that contribute significantly to job satisfaction and productivity [17–21]. Also correlated with the changes were instantaneous measures of job satisfaction and productivity during each segment. The uniqueness of this design is that it is based upon the component approach which allows program components to be correlated to the net changes in job satisfaction and productivity. A problem in the past has been evaluating what parts of a program or treatment need to be changed and which need to be continued to improve program quality. The primary advantage of the design outlined above is that treatments can be broken into their component parts.

METHODOLOGY

The purpose of this study was to test a methodology to determine the diagnostic capability of mood and the instantaneous measures of job satisfaction and productivity as short term elements to indicate effectiveness of program components to cause long term changes in job satisfaction and productivity. A case study was undertaken for a major manufacturing company in the

Southeastern United States. The company wishes to remain anonymous to protect employees and the company. There were 150 participants in the study. The study was conducted on two study groups: Group 1 were those individuals who did not participate in the health and fitness program or any other recreational program within the company (N = 50). Group 2 were those individuals who participated in the recreation programs and the health and fitness program on a regular basis (N = 100). (The participants in the treatment group were executives and active members in a health and fitness program.) Groups 1 and 2 were also asked to change or reverse their recreation participation patterns on randomly selected days to test the impact or change upon job satisfaction and productivity. The participants in the study were requested to maintain their normal pattern for six months and then they were asked to reverse their pattern during the last six months. In terms of the long term measures, the individual completed questionnaires at the beginning and end of each six month period. Individuals were asked to select thirty random days and complete the instantaneous measures form for each of the days. This allowed for the determining of the impact of recreation in terms of a fitness program. Test phases were established before the reversal pattern to determine the net effect, especially in relation to the activity that provided the increases or decreases in the overall job satisfaction and productivity. Individuals were selected to participate in the program at random.

Comparisons were made using an analysis of variance framework. Program data were analyzed using a step-wise regression framework with the productivity and job satisfaction scores being used as dependent variables and mood, the instantaneous measures of job satisfaction or productivity, and job task being used as independent variables. Since mood and job task are qualitative characterizations, they were incorporated into the regression equation using a dummy variable framework. A hierarchical scale was used to measure job satisfaction and productivity, therefore equal interval assumptions were made for analysis of this data.

An additional value of using instruments such as mood, job satisfaction and productivity during a program is that it helps individuals clarify the value of each of the programs for the individual. What is being suggested is that instrumentation may be an educational tool in itself.

INSTRUMENTATION

The long term measures used were job satisfaction and productivity, and the instantaneous measures used were mood, job satisfaction and productivity. The purpose of this case study was to correlate the short term measures to job satisfaction and productivity.

Job satisfaction was measured utilizing a scale composed of sixty-three items [21–28]. A four-point scale (satisfied, neutral, dissatisfied, and not appropriate)

was used to record the responses [29]. Job satisfaction scores were obtained through the summation process. Scores ranged from 63 to 189, with the larger score indicating higher job satisfaction. This particular scale was chosen for job satisfaction because it analyzes the component of work on a diagnostic basis.

Productivity, the long term factor, was measured using the concept of objectives accomplished [18, 30–36].¹ This type of measure was utilized because it is easier to deal with percentage of objectives accomplished as a measure of worker effectiveness than the more elusive concept of productivity. Participants are more defensive about the word productivity when compared to the word objectives. Two measures of productivity were utilized:

1. an objective measure, that is, a job supervisor's or occupational counselor's rating; and
2. a subjective measure, that is, an employee's self-rating.

The job supervisor or occupational counselor and the employee were asked to establish a number of work related objectives for the allotted time. At the end of the measurement period, the employee and job counselor and supervisor were asked to rate the objectives accomplished on the following scale: completely achieved, partially achieved, not achieved at all. The following scale was used to rate the objectives: If an objective was completely accomplished, it was assigned a value of one. If it was partially accomplished, it was assigned a value of 0.5, and if there was an unexpected outcome, it was assigned a value of 0.25. The sum of these scores was divided by the total number of objectives listed. This provided an index of tasks accomplished in terms of an objective and subjective rating.

Mood, in terms of some personality theories, is a short term element that indicates social-psychological status. Moods are the basic building blocks of social-psychological constructs such as job satisfaction and productivity. A list of words describing feelings were given to each participant. He was asked to indicate, using no more than three words, his feelings during the various segments of the day [37]. The author feels that it was important for mood to be characterized using only a word description list and not a scale because mood is a qualitative characteristic. The scale used to rate instantaneous job satisfaction was not a diagnostic scale and utilized the following rating system: high, medium, fair, or low job satisfaction. The following non-diagnostic scale was used to rate productivity on an instantaneous basis: high (75-100% of the objectives accomplished), medium (50-75% of the objectives accomplished), fair (25-50% of the objectives accomplished), and low productivity (0-25% of the objectives accomplished). The instantaneous measurement scales of mood, job satisfaction, and productivity were rated in relation to activity on a day and

¹ A more detailed description of the methodology used may be obtained in reference [37].

hourly basis. The activities codes used for recording responses were decision-making, planning, organizing, staffing, communication, budgeting and resource allocation, evaluation, stimulation, recreation, eating. There was also an open-ended response available. The activity codes were confined to white collar or professional types of tasks.

PROGRAM DESCRIPTION

Since the company did not have facilities on site, there was a YMCA within two blocks walking distance from the main headquarters. This facility was used and the local YMCA worked in cooperation with the company to develop their program. The YMCA helped establish the fitness program, but it did not provide the necessary expertise to supervise it. The cooperative relationship that developed between the YMCA and the company was one of paying fees or dues for use of the facilities without the necessary programmers to implement the program.

The treatment utilized in this study was the YMCA's health and fitness program [38–44]. This program is progressive and designed to improve health based upon skill level [45–48]. As a result of different skills, there were two groups established to reduce the confounding of this issue. One skill level was the low to medium and the other a high skill level. Individuals were placed in the skill groups based on a preliminary test and upon their advancement and progress through the program. The program was self-administered and their progress was recorded by the individual after every session. Checks on progress were made once a week by the YMCA professional and the occupational counselor. The skill level groupings were only appropriate for the participant group (group 2). The program itself was not highly rigorous, but based upon progress and steady development. The basic objective of the program was to increase strength and flexibility with an emphasis upon conditioning at first. The company did not have an individual to supervise the fitness program.

RESULTS

The first type of analysis was a comparison between the objective and subjective ratings of productivity. A Correlation Coefficient was used to determine the amount of relationship between these two factors. Comparisons made were based upon pre-test scores. The categories utilized for the comparisons were the recreation vs. the non-recreation groups and the low and medium vs. the high skills in the recreation group. The results from these comparisons indicated that there was a very high correlation between the objective and subjective rating of productivity among all categories (see Table 1). Therefore, the subjective rating of the employee will be used throughout the study as an indicator of productivity.

Table 1. Productivity: Objectivity and Subjectivity

Non-Participant	$r = 0.68$
Recreation (Skill Level)	
Low and Medium	$r = 0.73$
High	$r = 0.85$

Table 2. Work Related Dimension:
Job Satisfaction and Productivity

Non-Participant	$r = 0.31$
Recreation (Skill Level)	
Low and Medium	$r = 0.38$
High	$r = 0.54$

Analysis was also conducted to determine the relationship between job satisfaction and productivity. The same category comparisons were made as with the objective vs. subjective ratings. Again, only the pre-test scores were used in this comparison to ascertain the relationship. It was found that there was similarity between job satisfaction and productivity, but there was a high degree of aberrations in correlation among the categories (see Table 2). Therefore, a complete analysis was done for each of the constructs.

Comparisons were made between the pre- and post-test scores for job satisfaction and productivity, utilizing the same categories or breakdowns as used for the objective vs. subjective comparisons. It was found that with the "normal recreation patterns" there were no significant differences between the pre- and post-test scores for the recreation high skill group and the non-recreation group for both job satisfaction and productivity. There were differences on the low and medium skill level for job satisfaction and productivity (see Table 3). There were significant differences between the pre- and post-test scores when the recreation patterns were reversed, indicating the importance of the impact of recreation upon job satisfaction and productivity. There were increases in job satisfaction and productivity in the non-recreation group. There were greater changes in productivity than job satisfaction. There were decreases in employee satisfaction and productivity in the recreation group. There was more of a decrease in productivity than job satisfaction for the high skill group. The decrease in productivity and job satisfaction for the low and medium skill group was in the same range (see Table 4). An analysis of variance test was used as a basic unit of statistical comparison. A 0.05 probability level was used to determine significance. These results only give an indication of the impact of

Table 3. Normal Pattern

	<i>Mean Scores</i>	
	<i>Pre</i>	<i>Post</i>
<i>A. Job Satisfaction</i>		
Non-Participant	137	131
Recreation (Skill Level)		
Low and Medium	144	159
High	174	168

<i>B. Productivity</i>		
Non-Participant	0.30	0.36
Recreation (Skill Level)		
Low and Medium	0.41	0.58
High	0.72	0.74

Table 4. Reversed Pattern

	<i>Mean Scores</i>	
	<i>Pre</i>	<i>Post</i>
<i>A. Job Satisfaction</i>		
Non-Participant	131	151
Recreation (Skill Level)		
Low and Medium	159	131
High	168	145

<i>B. Productivity</i>		
Non-Participant	0.36	0.51
Recreation (Skill Level)		
Low and Medium	0.58	0.45
High	0.74	0.59

recreation and not about those particular kinds of activities and events that are related to increased job satisfaction and productivity.

A stepwise regression was conducted to isolate the major factors that are related to job satisfaction and productivity. The dependent variables utilized

were mood (dummy variables), instantaneous job satisfaction, productivity and job task (dummy variable). The independent variables in the study were job satisfaction and productivity. Only those relationships were analyzed where a significant difference was isolated between pre- and post-test scores. The index for the dependent variable was built using the difference between the pre- and post-test scores. A separate regression equation was used for each segment of the day. Of the program components, the following have the greatest significance in the development of job satisfaction and productivity. (Only equations with an R^2 value of 0.5 are listed below. A 0.1 probability level was used to determine the significance of variables.)

JOB SATISFACTION

Significant Difference – Reversed Pattern/Non-Participant – 12:00 - 1:00 PM: Mood – carefree (0.6 = Standardized Beta Coefficient) and active (0.4); Productivity (0.6); Job task – Recreation (0.7)

Significant Difference – Reversed Pattern/Non-Participant – 9:00 - 10:00 AM: Mood – energetic (0.3) and concentrating (0.4); Productivity (0.7); Job task – planning (0.4) and organizing (0.5)

PRODUCTIVITY

Significant Difference – Reversed Pattern/Non-Participant – 12:00 - 1:00 PM: Mood – active (0.3), playful (0.4), sluggish (0.2); Job Satisfaction (0.5); Job task – recreation (0.7)

Significant Difference – Reversed Pattern/Non-Participant – 9:00 - 10:00 AM: Mood – tired (0.3), clutched up (0.5), jittery (0.4); Job task – decision-making (0.6) and organizing (0.2)

Significant Difference – Normal Pattern/Low and Medium Recreation Skill – 12:00 - 1:00 PM: Mood – defiant (0.4), boastful (0.2), and playful (0.5); Job Satisfaction (0.5); Job task – recreation (0.5)

IMPLICATIONS

Results indicate that short-term measures such as mood, productivity, and job satisfaction can be related to long-term measures to give an indication about factors that influence job satisfaction and productivity. Such a design has the advantage of helping to determine effectiveness of components to produce

desired changes. This type of information is of value for administrative decisions because it is based upon net instead of gross value indicators. It also lends itself to an administrative framework because of the process of efficiency and effectiveness are natural outcomes of the measurement process [49]. Effectiveness is the number of objectives or desired changes accomplished. Efficiency is the amount of time needed to produce the desired change. If effectiveness and efficiency are combined with the component analysis approach, a system for assessing administrative changes can be developed.

Results indicate that there is a high degree of relationship between objective and subjective measures of productivity. They also indicate that there is a difference in relationship between job satisfaction and productivity. Results suggest further that when recreation is manipulated in the industrial setting, it has a significant impact upon job satisfaction and productivity. The increase in job satisfaction and productivity that may be expected with a non-recreation group is in the range of 15 to 25 per cent. The decrease that may be associated with loss of recreation opportunity is in the range of 20 to 35 per cent.

Further analysis indicates the correlates of job satisfaction and productivity are factors related to independence, that is, programs that recognize employee initiative. Activities such as planning and organizing were the ones related to job satisfaction. Elements related to productivity were factors that relate to seeing the impact or product of the work. Categories such as motivation and evaluation were the ones related to productivity. Comparisons were made using the net measures of job satisfaction and productivity as a dependent variable and the instantaneous factors of mood, job satisfaction and productivity as the independent variables. The equations utilized were the ones where there was a significant difference isolated between pre- and post-test scores. The non-recreation group, as opposed to the recreation group, have a higher level of productivity, but they seemed to engage more in activities that were related to organization and planning and implementing their day, whereas, those engaged in non-recreation activities seemed to have a lower productivity because of being less able to plan and organize their day effectively. Recreation in this instance is a device that helps to develop such factors as leadership and organizational abilities. Recreation is an activity that is able to bridge the work and leisure setting to take the activities where they can develop such benefits as leadership organizational skills and inject them into the company in a non-obtrusive manner. Even though the lower productivity in itself does not indicate the major impact of recreation, the reversal of role is the conclusive evidence that illustrates the positive benefits of recreation.

FOLLOW-UP INVESTIGATIONS

Further investigation was conducted using a cluster analysis to determine the types of productivity patterns during the day and its associated effects upon

Table 5. Comparison of Productivity With and Without Recreation^a

		<i>Productivity Mean Scores</i>		
		<i>With</i>	<i>Without</i>	
		<i>Recreation</i>	<i>Recreation</i>	
PATTERN 1				
Low	High			(Morning Measurement
Morning	Afternoon	1.9	1.1	8:00 - 12:00 AM)
PATTERN 2				
High	Low	2.1	1.0	(Afternoon Measurement
Morning	Afternoon			1:00 - 4:00 PM)
PATTERN 3				
Low-High	Low-High	2.0	1.0	(Early Morning Measurement
Morning	Afternoon			8:00 - 10:00 AM)
		1.8	1.0	(Early Afternoon Measurement
				1:00 - 3:00 PM)
PATTERN 4				
High-Low	High-Low	2.1	1.1	(Late Morning Measurement
Morning	Afternoon			10:00 - 12:00 AM)
		1.9	1.0	(Late Afternoon Measurement
				2:00 - 4:00 PM)

^a The instantaneous measure of productivity was used in this phase of the study.

recreation [50–53]. It was found that there were four major patterns of productivity based upon a time analysis:

1. a high to low gradient;
2. a low to high gradient;
3. a low to high to low gradient; and
4. a high to low to high gradient.

An additional hypothesis was tested: when recreation is interjected into an employee's day prior to his low productivity period, it will increase his productivity. A pilot test was conducted on a smaller sample of fifteen to test this hypothesis. The fifteen were selected at random from each pattern. Fifteen people from each pattern were utilized and the recreation period was injected into their day right before the low productivity pattern on ten random days. It was found from this analysis, when a comparison was made between the two patterns, with and without recreation at that appropriate period, the level of productivity tended to mediate (see Table 5). This indicates further the potential impact of recreation. The primary question not raised in this study is one of a longitudinal nature. This study is not meant to be definitive but only suggestive of the types of studies that are needed in industrial recreation. Much further analysis is needed on a more complete sample and population to verify and refine these findings.

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