



RESEARCH ARTICLE

Social Capital, Family Support, Behavior Use of Personal Protective Equipment (PPE) as the Alternative to Improve the Performance of Employees Exposed to High Intensity Noise

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Abstract

Introduction: Many previous studies have shown that noise intensity in weaving of the textile industry exceeds TLV (> 85dBA) which is difficult to avoid and impossible to reduce. Employees who are exposed to noise and do not use PPE with a long duration of exposure will get an effect in terms of both physical and psychological health. This results in a decline in their performance. This study aims to examine the social aspects of the workplace (social capital), social aspects of the family (family support), and the attitude of employees towards PPE to the performance of those working in weaving exposed to high intensity noise for a long time through work stress. **Methods:** This study used an observational analytic design with a cross-sectional approach. The location of this research was the textile industry of PT Dan Liris in Banaran, Grogol, Sukoharjo, Central Java. The population of this study was 343 employees working in the weaving department of PT Dan Liris, who met the criteria. The sample size was 170, taken by proportional simple random sampling technique. Exogenous variables in this study included: social capital, family support, employee attitudes toward PPE, and work stress. Endogenous variables in this study included: employee performance, social capital variables, family support, employee attitude towards PPE, work stress, and performance which were measured using a questionnaire. The data were analyzed using path analysis. **Results:** There was a positive direct effect between social capital and employee attitudes towards PPE on employee performance, meaning that the social environment of employees who had good social capital could improve their performance by 0.085 points. In addition, good employee attitude towards PPE could also improve their performance by 0.376 points.

Keywords: *Social capital, Employee Attitude towards PPE, Performance.*

Introduction

There have been many textile industries that produce fabrics for various types of textile industry needs in Indonesia, especially to meet domestic and export fabric needs. PT Dan Liris a textile industry which is able to produce its own yarn as raw material for fabric and process it into fabric (weaving). The industrial production capacity reaches 55 million meters per year which is produced by weaving 2 with 300 employees. Besides producing products that can meet basic human needs for clothing, PT Dan Liris has an issue in terms of noise produced by weaving machines. The intensity of noise of weaving is generally quite high. The high

noise intensity has been proven by various studies on noise intensity in the textile industry with an average of > 100 dBA. Previous study conducted at PT Dan Liris showed that the average noise intensity in weaving 2 reached 101 dBA, and the duration of employees exposed to noise was 8 hours per day for 6 working days/48 hours per week. The number of employees in the weaving 2 was 300 employees divided into 7 groups using 3 work shifts per day. In the Decree of the Minister of Manpower and Transmigration No. 13 of 2011, it is stated that Noise Threshold Limit Value (TLV) based on exposure time is set < 85 dBA with

a duration of exposure of 8 hours per day for 5 working days (40 hours per week). Referring to this provision, the employees in the weaving 2 of PT Dan Liris have exceeded the specified threshold value. Efforts to reduce the noise intensity of weaving machine are technically difficult. The efforts to reduce the noise exposure administratively to comply with the provisions in the attachment to the Decree of the Minister of Manpower and Transmigration No. 13 of 2011 are also impossible since they require very high costs.

Furthermore, the efforts to reduce noise exposure to workers by using Personal Protective Equipment (PPE) in the form of ear plugs and ear muffs also experienced obstacles due to the employees who rarely use them for various reasons. The condition of employees exposed to high intensity noise in a long duration definitely has a health impact. Many studies have shown that the high intensity noise that exceeds TLV causes health problems both physiologically and psychologically as well as behavior changes.

The results of a study conducted by Budiyanto [1] showed that employees working in the weaving of the Agung Saputra Tex textile industry experienced moderate stress levels of 95% and mild stress levels of 5%. Noise as a source of stress causes psychological changes of the employees including feeling uncomfortable, insomnia, lack of concentration, unstable emotion, and sleep disturbance [2]. Noise can also cause psychological or mental disorders [3, 4].

According to Budiyanto [1] noise causes stress on employees. Long-term stress with high intensity results in individuals suffering from physical or mental fatigue. Burnout is physical, mental and emotional exhaustion that occurs due to stress for a long period of time in situations that require high emotional involvement. From the aforementioned description of the problems, it is necessary to find effective and efficient solutions for both companies and employees to reduce the occurrence of work stress.

Social aspects consisting of social capital, family support, and employee behavior using PPE are considered to affect the psychological condition of employees in reducing work stress and are expected to have good performance and be able to work

for a long time even though the workplace environment has high intensity noise [5].

The social support of spouse, family, and coworkers increases the positive relationship between work stress and Work Family Conflict (WFC), meaning that good support from spouse, family, coworkers can reduce the employee work stress [6]. For the purpose of testing these assumptions, the performance as an employee's work product is assessed based on the quantity and quality of work, the level of independence, work effectiveness, social capital consisting of (norms, mutual trust, and social networks), family support (assessment support, informational support, instrumental support, emotional support).

Based on the above problems, a research needs to be conducted to analyze the role of social capital, family support, and employee behavior using PPE to the performance of employees exposed to high intensity noise for a long duration. The purpose of this study was to analyze the effect of social capital, family support, and the behavior of the use of PPE on the performance of employees in weaving who were exposed to high intensity noise for a long duration.

Methods

This study used an observational analytic design with a cross-sectional approach. The location of this research was the textile industry of PT Dan Liris in Banaran, Grogol, Sukoharjo, Central Java. The population of this study was 343 employees working in the weaving department of PT Dan Liris, who met the criteria. The sample size was 170, taken by proportional simple random sampling technique. Exogenous variables in this study included: social capital, family support, employee attitudes toward PPE, and work stress. Endogenous variables in this study included: employee performance, social capital variables, family support, employee attitude towards PPE, work stress, and performance which were measured using a questionnaire. The data were analyzed using path analysis.

Results

Direct effect: a) the direct effect of social capital on work stress. The path analysis results showed that there was a direct effect of social capital on employee work stress and

was statistically significant. Good social capital in an employee environment could increase work stress by 0.094 points higher than employees with low social capital; b) the direct effect of family support on work stress. The path analysis results showed the direct effect of family support on work stress. Employees who had high family support could reduce their work stress by 0.32 points; c) the direct effect of attitudes towards PPE.

The path analysis results showed the direct effect of employee attitudes in using PPE to work stress. Employees who had a high attitude in using PPE could reduce their work stress by 0.04 points. Indirect effect: a) the effect of social capital on performance. The path analysis results showed that there was an indirect effect between social capitals on performance through work stress. Employees who had high social capital could increase work stress by 0.341 point. Employees who had high work stress could improve their performance by 0.094 points; b) the effect to family support on performance.

The path analysis results showed that there was an indirect effect of family support on performance through work stress. Employees who had good family support could reduce the work stress by 0.032 points. Employees who had high work stress could improve their performance by 0.094 points; c) the effect of employee attitudes in using PPE on performance.

The path analysis results showed that there was an indirect effect of employee attitudes in using PPE to performance through the work stress. Employees who had high work stress could improve their performance by 0.094 points.

Discussion

The Effect of Social Capital on Performance

Good social capital cannot be separated from the quality of social interaction between employees who have been built for a long time. Based on the research results, it was found that the majority of employees have worked for a long period of time. It means that with a period of more than 23 years, employees have known each other's employees' characters. Social capital in a good workplace is inseparable from the social structure that consists of norms to regulate relations between individuals, mutual trust

between individuals, and social networks. Written or unwritten norms in the work environment are used to regulate the relationship between employees and employees, as well as employees with superiors so that good social interaction occurs. Thus, norms, networks and trust are components that have a close relationship. Strong ties built between employees in a long period of time will form a network of social capital that has a very important role to strengthen the relationship between one individual with another individual.

In addition, weaving employees also have homogeneous characteristics since they have the same goals, duties and responsibilities. Good social capital is formed based on social capital ties based on a network of people who have homogeneous interest groups and characteristics. Social interaction in the work environment is shown through a dynamic reciprocal relationship regarding the relationship between employees, employees with a group of employees, and employees with institutions/companies [7].

Dynamic reciprocal relationships are described through the actions of each employee (social action) based on mutual understanding, feelings, attitudes and other actions in the social life of the employees [8]. Reciprocal relationships using good communication form social networks that can connect employees with other employees [9].

The Effect of Family Support on Performance

The results of this study showed that employees who had a good family support on average had low work stress, while those who had high work stress on average could reduce the performance of weaving employees. The family is part of the smallest social structure consisting of a nuclear family (husband, wife, and/or child) or additional family (grandfather and grandmother) who have strong emotional ties between family members and have their respective roles.

This is in line with the opinion of Friedman [10] which points out that families are two or more individuals who are joined because of blood relations, marriage or adoption and they live in one household, interact with one another, have their respective roles and maintain culture. Role conflicts and family conflicts faced by employees usually cannot

be resolved by themselves and become a source of work stress. Therefore, assistance is needed from various sources or parties which, according to him, can provide solutions to the problems faced [11].

The Influence of Employee Attitudes in Using PPE on Their Performance

The attitude of employees in using PPE is a form of acceptance or rejection of employees against the provisions of using PPE. Personal protective equipment is actually intended for employees to protect them in terms of safety and health. Even though the use of PPE does not benefit the employees directly, anticipating or preventing various possibilities should always be considered. PPE has characteristics and is usually adjusted to the risks that exist in four occupations related to the employee's health and/or safety. The results showed that there was a direct effect of employee attitudes in using PPE to work stress.

It means that the employees who had a good attitude in using PPE could reduce work stress by 0.04 points. They would be disrupted if they experienced high work stress. However, there were also employees who actually needed the stress in order to work well, which means that an employee or someone needed a challenge in carrying out the work so that the performance or work results could increase.

Conclusion

1) There was a positive direct effect between attitude to use PPE with the employee performance. A good attitude using PPE increased the employee performance by 0.376 points. 2) There was a direct positive effect between social capital and performance. Employees who had good social capital in the work environment could improve their performance by 0.085 points. 3) There was a positive direct effect between work stress and performance. Employees who had good work stress could increase their performance. 4) There was an indirect effect that was negative and statistically not significant.

Employees who had a good attitude in using PPE could reduce their work stress by 0.04 points, while good work stress could improve employee performance. 5) There was an indirect effect that was positive and not significant. Employees who had good social capital at work could increase their work

stress, while those who had good work stress could improve their performance. 6) There was an indirect effect that was negative and not significant. Employees who had good family support could reduce work stress, while those who had good work stress could improve their performance.

Suggestion

a) To maintain a good social network, the company should continuously give good attention to employees to create a good work climate based on quality social interactions that are constantly monitored and guided by the norm; b) Every employee needs to increase mutual trust between employees based on shared goals while maintaining the family ties; c) Families should continue to provide support and motivation to family members who work to help the family economy. Giving good attention will motivate them to remain enthusiastic in carrying out their duties and responsibilities.

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