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The Social Capital Effect on the Employees' Quality of Life in Noisy Work Environment

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Abstract
The noise exposure that exceeds NAB can cause the change of physiology, psychology, and employees' behavior, including those employees who work in weaving subdivision in textile industry. Social capital is the social aspect that consists of trust, a norm for regulating the relation among members, and network, which can increase mental health and can be used as the access to health information, hence, it can influence the employees' quality of life. This research was purposed to value the social capital effect toward the employees' quality of life in noisy work environment through social stressor and the change of employees' behavior. The design of this research was observational analytic by using cross sectional approach. The population of this research was all of the employees in weaving 1, weaving 2 and administration division in textile industry of PT. Kusumahadi Santosa Karanganyar, Middle East, Indonesia, from which 250 samples of people were taken by using simple random sampling method. The data was collected by using questioner and interviewing. The data was analyzed by using path analysis and applied partial Least Square method. The result of this research showed that social capital indirectly influenced the employees' quality of life in noisy work environment, which was mediated by social stressor factor and the change of employees' behavior (0.219). Despite the noisy work environment, the social capital factor needed to be increased though it did not directly influence the employees' quality of life.

Keywords: *Social capital, quality of life, environmental noise*

I. INTRODUCTION

Employees who were in weaving subdivision were social group in the work environment, who had value, expectation and aim, which was believed and done together as the moral guide, secular standard (professional code of ethics) to regulate the relation inter-employees, including the relationship between employee and supervisor which was applied to organize the cooperation (aspect of norm). In the interaction, employees had mutual belief which was performed by honesty, regularity and cooperation based on trust. Social interaction needed to be supported by the cooperation of inter-society members to facilitate the process of communication and interaction; so that it would grow the belief and cooperation. In this case, network was required to be fulfilled. Trust, norm, and network were the aspects of social capital (Ridell, 1997). Employees who were in weaving subdivision had responsibility to control continuously to know whether there was broken weft and to repair the spinning machine.

The intensity of sound exceeded NAB as much as (>85 dBA) in the work environment of weaving in textile industry that could cause the noise. A level of the noise in weaving division in Textile Industry of Karachi, Pakistan was around (88.4 -104) dBA (Ashraf, 2009). In weaving division in Agung Saputra Text was 99 dBA (Budiyanto, 2010). In Textile Based Cottage Industries was 101.6 dBA until 109.8 dBA (Aitbar Ali Abbasi, 2010); whereas in part of weaving in PT Triangga Dewi Surakarta was about 101.15 dBA (Nadhiroh, 2011). The noise with its intensity that exceeded NAB could cause the change of either employees' physiology or employees' psychology. The examples of physiological change were the increase of blood pressure and heartbeat (Dyah, 2008), the increase of basal metabolism, constriction of small blood vessels particularly in foot, pale and sensory disturbance (Gayathri et al, 2012), hearing disturbance, communication disturbance, safety and health of workers disturbance, the decrease of performance and work productivity (Malu, 2011). The examples of psychological change were less comfortable, less concentration, emotional, and sleep disturbance (Permatasari, 2004). Noise could cause physiological disturbance (Peker & Altin, 2005) and (Aitbar Ali Abbasi, 2010).

Noise could also be stressful for employees (Budiyanto, 2010). Getting stress for a long time within a high intensity caused exhaustion mentally and physically. These condition were called as burnout; it was a state of physical, mental and emotional of exhaustion as a consequence of stress in a long-term in the situation that demanded high emotional involvement. The physiological change as the result of noise continuously could cause chronic stress for employees. About 95% of employees in weaving division were getting stress in medium level. Budiyanto (2010) reported that noise significantly related to stress for the employees who worked in weaving

division. Employees who were exposed to the intensity of noise of >85 dBA, had greater risk of medium work stress, which was in 1.875 bigger rather than its intensity of noise of <85 dBA. Besides, he also stated that stress effect did not directly relate to the work exhaustion (Birowo,2012).

Nadhiroh (2011) also reported that noise affected the employees' stress. Noise, which was as a source of physical stressor, could cause the physiological, psychological, and behavioral changes. Behavioral change could be characterized as constructive or destructive. Constructive behavior helped someone to overcome the problem or conflict and it became more challenging in the context of performance. Destructive behavior was directed to damage themselves or other people. Whereas, physiological and adaptive behavior was the mechanism of ego defense to regulate an emotional distress, then it gave emotion and protection toward anxiety and stress (Potter & Perry, 2006). Work stress was employees' response, either physically or mentally, to the changes of environment that disturbed or threatened (Anoraga, 2009).

In addition, it influenced the work situation and concentration in finishing the job (Griffin, 2010). The exposition of noise in high intensity was impossible to be avoided by employees of weaving division. It was because its responsibility to control spinning machine whether there was the broken weft or the need of reparation. The changes of physiology, psychology, and behavior of the employees in weaving division were estimated to influence the employees' quality of life. The quality of life was someone's perception, regarding to her or his position in life, in which it was viewed from the cultural context and the system of value where someone stayed and the connection with the goal, hope, standard, pleasure, and etcetera that became an individual concern (WHO, 1999).

Generally, the quality of life was utilized to depict the people's prosperity in their environment (Molar, 2009). The improvement of quality of life was often taken into the consideration and used as a strategy to develop Indonesia. Quality of life was valued based on someone's perception to some aspects of whole life and public health. According to WHO (1999), domain of quality of life consisted of physical health, physiological condition, degree of freedom, social relationships, environment, and spiritual aspect.

II. METHOD OF RESEARCH

This research used cross sectional design by using observational approach. It was conducted toward employees who worked in weaving 1, weaving 2, and administration in textile industry of PT. Kusumahadi Santosa. It took 250 samples of people by using simple random sampling method. The data was collected by utilizing questioner, including the variables of social capital, social stressor, physiological change, and employees' quality life.

The instrument of data collected was tested its validity and reliability to obtain the degree of truth based on 30 respondents. Moreover, it was required to obtain the degree of truth and conclusion (Murti, 2011). The research data was presented in the forms of table and figure. The data was analyzed by using Structural Equation Modeling and Partial Least Square (PLS) approach; with the aid of Smart PLS software, which was predictive model (Murti, 2015).

III. RESULT

Table 1 Characteristic of Respondents

Characteristic of Respondents		Total	Percentage
Sex	Female	102	40.8%
	Male	148	59.2%
Education	Elementary School	22	8.8%
	Junior High School	58	23.2%
	Senior High School	165	66.0%
	PT	5	2.0%
Marital status	Unmarried	37	14.8%
	Married	208	83.2%
	Widow/widower	5	2.0%
Groups of age	< 26 years old (adolescent)	41	16.4%
	26 - 35 years old (early adulthood)	30	12.0%
	36 - 45 years old (late adulthood)	49	19.6%
	> 45 years old (elderly)	130	52.0%
Groups of work period	Work period of 1 up to 8 years	58	23.2%
	Work period of 9 up to 15 years	10	4.0%
	Work period of 16 up to 22 years	19	7.6%
	Work period of 23 up to 29 years	89	35.6%
	Work period of > 29 years	74	29.6%

The table above showed that most of respondents were male (59.2%), educated in senior high school (66%), marriage status (83.2%), >45 years old (52%) and work period of 23-29 years old (35.6%).

All the indicators came from social capital, which was in the category of trust = 92.8%, norm = 81.6%, and network = 78.8% (Table 2).

Table 2 Result of valuation based on weaving employees' perception toward social capital factor

Indicators	Categories of valuation		
	Less %	Good %	Very Good %
Trust	0.8	92.8	6.4
Norm	3.2	81.6	15.2
Network	16	78.8	5.2

All the indicators came from social stressor which was in the category of climate of family life = 54.4%, job = 56% and environment climate = 73.6% (Table 3).

Table 3 Result of valuation based on weaving employees' perception toward social stressor

Sources of social stressor	Categories of valuation		
	Less %	Good %	Very Good %
Climate of family life	36.4	54.4	9.2
Job		56	44
Environment climate	24.8	73.6	1.6

All the indicators came from behavioral change in the categories of habit in postponing work = 54%, decrease of achievement = 56%, risky behavior = 62.4%, presence = 50%, the habit of eating = 61.6% and intrapersonal change = 70% (Table 4).

Table 4 Result of valuation based on weaving employees' perception toward behavioral changes

Behavioral changes	Categories of valuation		
	Less %	Good %	Very Good %
Postponing of work	27.2	54	22.8
Decrease of work achievement	1.6	56	2.4
Risky behavior	25.2	62.4	12.4
Level of presence	27.2	50	22.8
A habit of eating	35.2	61.6	3.2
Intrapersonal change	28	70	2

There were two categories of the indicator of quality life, which was less, including physical health = 55.2%. Whereas, the categories of good were physiological condition = 69.2%, level of freedom = 49.2%, social relationships = 66.8%, and religion = 46.4% (Table 5).

Table 5 Result of valuation based on weaving employees' perception toward the quality of life

Qualities of life	Characteristics of valuation		
	Less %	Good %	Very Good %
Physical health	55.2	44.8	
Psychological	28	69.2	2.8
A level of freedom	49.6	49.6	0.8
Social relationships	32.8	66.8	0.4
Environment	28.4	60.8	10.8
Religion	29.6	46.4	24

Results of the final structural model test would be showed in the table 6.

Table 6 Result of t-test and coefficient value of the influence of exogenous factor to the endogenous factor in structural model

No	The influence of exogenous factor to endogenous factor	Coefficient influence	t-statistics	t-table	Test Result
1	X1.Social capital to Y1.Social Stressor	0.443	8.61	1.96	Significant
2	Y1.Social Stressor to Y2.Behavioral change	0.733	30.14	1.96	Significant
3	Y2.Behavioral change to Y3.Quality of life	0.674	23.31	1.96	Significant
The virtue of model could be seen based on result of Q-square test: 0.797, which meant that the prediction result of the model of social capital effect toward employees' quality of life in noisy work environment was good.					

Inner model of the social capital effect on employees' quality of life, which the employees worked in noisy work environment, was presented in the figure 1.

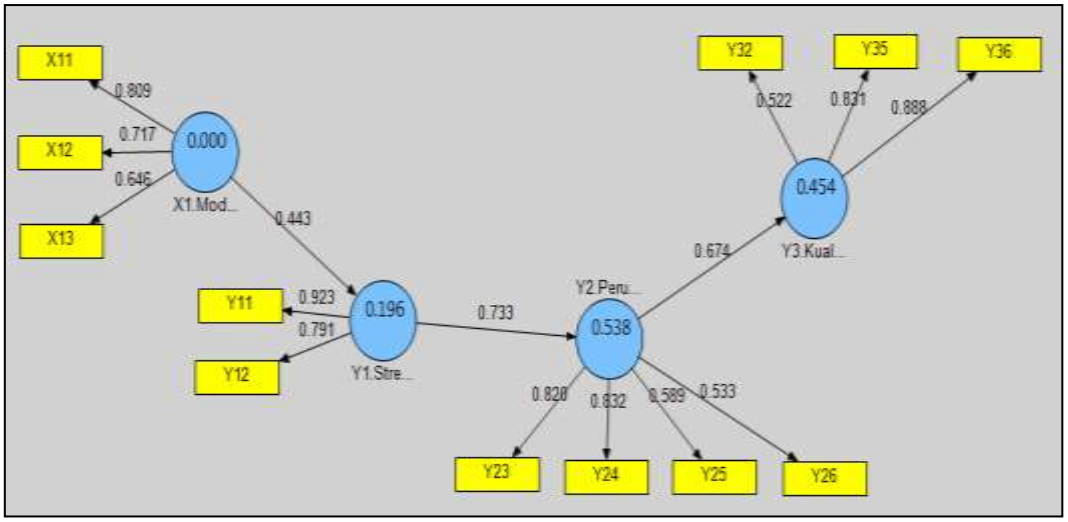

Figure 2 Final SEM model. The social capital effect on the employees' quality of life in noisy work environment

IV. DISCUSSION

The quality of life was someone's perception, regarding to its position in life, which it was viewed from the cultural context and the system of value, where someone stayed, and the connection with the goal, hope, standard, pleasure, and etcetera that became an individual concern (WHO, 1999). Quality life was multidimensional concept, including the physical, social and psychological aspect which were interconnected in daily health (Panthee & Kritprache, 2005), cited in Rochmayanti (2011). According to Green (1999), cited in Gielen (2002), behavioral change of someone was influenced by the valuation of someone toward the aspects of social, epidemiology, environment, which were supported by the factors of predisposition, enabling, and reinforcing. Notoarmodjo (2003) defined that behavioral change was based on three domains. They were cognitive, affective, and psychomotor.

The aspect of environment could influence behavioral change, including the biological, social, physical (noise, temperature, frequency), and chemical environments which were connected each other. The noise in high pitch (either discontinuous or continuous) was physical environment that caused stress for someone (Hartono, 2010).
In the employees' work environment, there was social capital which required the characteristics of norm that could be used to regulate the relation among members, trust, and social network in the work environment (Ridel, 1997). Furthermore, social capital had role as the access to the health information to spread the valuable information about behavior of healthy life that would influence someone's perception in valuing health condition, which was undergone as the assessment to the quality of life (M. Brown & Rice, 2007). In the social environment, good social capital could influence the aspect of psychology for the employees. In contrary, less social capital could become stressor for employees, thus, it would influence someone's behavioral change and the quality of life.

V. CONCLUSION

Based on the result of the research, it could be concluded that:

1. Employees' quality of life was directly influenced by behavioral change
2. Employees' quality of life was indirectly influenced by employees' social stressor through the factor of behavioral change
3. Employees' quality of life was indirectly influenced by social capital through the behavioral change factor and social stressor
4. Prediction ability of the model of social capital effect on employees' quality of life which the employees worked in noisy environment was good.

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