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Analysis of Education and Knowledge's Relationship on Worker Behavior in Waste Processing and Disposal in The Sasirangan Home Industry in Banjarmasin

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Abstract:

Sasirangan is a typical cloth from the South Kalimantan which is produced by the Banjarist people in home industries. The production of sasirangan has a very positive impact on the welfare of Banjarist people. However, the processing and liquid waste resulting from the production process can have a negative impact on workers' health and the environment because it contains synthetic dyes and heavy metals. This is caused by poor worker behavior in processing and disposing of liquid waste from sasirangan cloth. Worker behavior can be related to worker education and knowledge. This research aims to analyze the relationship between education, knowledge and the behavior of sasirangan workers in processing and disposing of waste in the home-based sasirangan industry in Banjarmasin. This research is an analytical observational study with a cross sectional approach, carried out at 3 (three) sasirangan production locations: Sungai Jingah, Seberang Masjid Village and Surgi Mufti subdistricts. Sampling used a purposive sampling technique with a sample size of 30 workers. Data analysis was carried out using descriptive and statistical analysis using the Chi Square test with the alternative Fisher Exact Test. The results of data analysis show the p value of the education variables (p=0.032) and knowledge (p=0.049). There is a significant relationship between education and knowledge and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin. This is in accordance with Lawrence Green's theory, the better the worker's education and knowledge, the better the worker's behavior. The existence of a significant relationship between education and knowledge and workers' behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin requires follow-up in the form of efforts to increase education and knowledge regarding the processing and disposal of sasirangan waste for workers in the sasirangan home industry in Banjarmasin.

Keywords: Sasirangan; Sasirangan Industry Waste; education; knowledge; workers behavior

Introduction

Sasirangan cloth is a typical cloth/textile product of the South Kalimantan region which is produced by the Banjar people on a small scale or in home industry.[1,2,3] Deveplopment of Sasirangan production brings positive impact for Banjarist prosperity. Sasirangan production develops well as one of superior textile products in South Kalimantan. Besides of its positive impact, Sasirangan production also bring negative impact such as pollution of the environment caused by the liquid waste from Sasirangan industry that wasted without any process.[3,4,5]

In production activities, liquid waste is produced in quite large amounts. Liquid waste is thrown away directly to nearby places without going through any processing. Liquid waste from Sasirangan production contains of contaminants that exceed waste raw materials for textile industries, as ruled in Environtment Ministry Regulation KEP-51/MENLH/10/1995 and South Kalimantan Regulation 036 Year 2008 about Liquid Raw Materials from Industrial Activities.[1,2,3,6]

Sasirangan dye waste contains some heavy metals. Heavy metals can affect human health depending on which part of the body is bound with heavy metals. The toxicity will work as enzyme barrier, that makes metabolism stop. Furthermore, heavy metals will cause allergen, gen mutations, teratogen, or carsinogen for human. The entrance is from skin, respiration organ, and digestive organ.[7,8,9,10]

Based on Saputra Reaseach (2014) heavy metal content in Lead (Pb) at Sasirangan industry in Banjarmasin is as much as 4,1090 mg/L. This Pb concentration exceeds maximal limit quality standards of Governor Regulation No.4 Year 2007 whereas maximum allowed Lead (Pb) content is 0,5 mg/L. the exceed of Pb concentrations will disturb aquatic organisms and human health such as severe anemia, damage of neuro system, immunity disturbance, nauseasous, renal damage and other which can happen for a long time. [1,2,5,11] Some kind of dye suspected to be carsinogenic and endanger human health.[4,5,12,13]

Bussiness owner activity for Sasirangan industry in Banjarmasin has direct access to ecological life of Maratapura River located at 3 locations: Sungai Jingah, Surgi Mufti, and Seberang Mesjid Subdistricts, whereas Martapura River is one of rivers that has main function for Banjarist people. Most industrial workers directly dispose of the waste to Martapura River without going through any process, so that river got polluted and give bad impact to human health and surrounding environment.

This workers' behaviour relates to various ages, education level, economic level, and personality. Another thing that also influences is the lack of attention to the environment, lack of awareness of protecting the environment, the level of knowledge and attitudes of Sasirangan industry workers.[14] Research by Febriyanti et al (2021) found that there is a relationship between education level and unsafe behavior in workers. Workers who have low education and behave unsafely are greater than workers who have high education and behave unsafely.[15] Research by Alghofiqy (2018) found that the level of knowledge of workers is related to worker behavior.[16]

Until now there has been no research regarding the behavior of workers in sasirangan cloth craftsmen in processing and disposing of waste in the sasirangan home industry in Banjarmasin.

Research Method

Research Design

The type of research used in this research is analytical observational research, using a cross sectional approach. This research looks for factors that influence workers' behavior in processing and disposing of waste in the

sasirangan home industry in Banjarmasin, which is measured by approach, observation, and data collection over a period of time.

Time and Place of Research

The research was conducted at 3 (three) sasirangan production locations in Banjarmasin, namely Sungai Jingah, Surgi Mufti, and Seberang Masjid Subdistrics, which have a direct impact on pollution of the Martapura River in Banjarmasin. The research was conducted in September 2023.

Research Subject

The research population was all workers in the Sasirangan home industry. The sample size in this study used the minimum sample size according to Bailey (1982) in Sugiyono (2013) which states that the sample size for correlational purposes requires a minimum of 30 subjects. The sampling technique used in this research was a purposive sampling technique.

Data Analysis

Data analysis was carried out in two ways, namely univariate analysis, and bivariate analysis. Univariate analysis uses a frequency distribution table, while bivariate analysis uses the chi square test using a 2x2 table, with an alternative test being the Fisher Exact test.

Results

Respondents Characteristics

In the research, respondents' characteristics include age and gender. (Table 1).

Table 1 Respondent's characteristics

Characteristics	Category	n	%
Age	Adult	23	76,7%
	Pre-Elderly	7	23,3%
Gender	Women	8	26,7%
	Men	22	73,3%

Table 1 shows the highest frequency based on age is from adult group (26-45 years old) with 23 respondents (76,7%). The men respondents are the most respondents from gender category, 22 respondents (73,3%).

Univariat Analysis

The distribution of education level, knowledge level, and behaviour from Sasirangan workers is presented in Table 2.

Table 2 The distribution and frequency of education level, knowledge level, and behaviour from sasirangan workers in Banjarmasin

Variable	n	%
Education Level		
Basic	22	73,3%
Secondary	8	26,7%
Total	30	100%
Knowledge Level		
Less	12	40%
Good	18	60%
Total	30	100%
Behaviour		
Deficient	21	70%
Decent	9	30%
Amount	30	100%

Bivariat Analysis

Bivariat analysis used Chi Square with Fisher Exact Alternative Test at trust level 95% (α = 0,05) to find out the relationship between dependent variable (workers behaviour) and independent variables (education and knowledge levels). The result can be defined as related if p value < 0,05.

This research resulted in relationships between education level and behaviour of Sasirangan workers on processing and disposing waste in sasirangan home industry in Banjarmasin (Table 3).

Table 3. Analysis of relationship between education level and and behavior of Sasirangan workers on waste processing and disposal in Sasirangan home industry in Banjarmasin

Education Level	Behavior		Total	p
	Deficient	Decent		
Basic	18 (60%)	4 (13,33%)	22 (73,33%)	
Secondary	3 (10%)	5 (16,67%)	8 (26,67%)	0,032
Total	21 (70%)	9 (30%)	30 (100%)	

Table 3 shows a cross table between education level and worker behavior in processing and fertilizing sasirangan cloth waste, showing that from the group of respondents with basic education (elemntary school), there were 18 respondents (60%) with poor waste processing and fertilization behavior, while there were 4 respondents (13 .33%) with good behavior. From the group of respondents with secondary education (junior and senior high school), there were 5 respondents (16,67%) with good behavior, while there were 3 respondents (10%) with poor waste processing and fertilization behavior.

Based on statistical tests using the Fisher Exact test table 2x2, the p value = 0,032 (p < 0,05), which shows that there is a significant relationship between education level and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin. In this research, the results of the relationship between knowledge and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin are presented in table 4.

Table 4. Analysis of the relationship between knowledge and worker behavior on waste processing and disposal in the sasirangan home industry in Banjarmasin

Knowledge Level	Workers Behavior		Total	p
	Deficient	Decent		
Less	11 (36,67%)	1 (3,33%)	12 (40%)	
Good	10 (33,33%)	8 (26,67)	18 (60%)	0,013
Total	21 (70%)	9 (30%)	30 (100%)	

Table 4 shows a cross table between knowledge and workers' behavior in processing and fertilizing sasirangan waste, showing that from the group of respondents with less knowledge there were 11 respondents (36,67%) with deficient waste processing and fertilization behavior, while there was 1 respondent (3,33 %) with decent behavior. From the group of respondents with good knowledge, there were 8 (26,67%) respondents with decent waste processing and disposal behavior, while there were 10 respondents (33.33%) with deficient behavior.

Based on statistical tests using the Fisher Exact test table 2x2, the p value = 0.013 (p < 0,05) is obtained, which shows that there is a significant relationship between knowledge and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin.

Discussion

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Table 3 shows a statistical test using the Fisher Exact test, a 2x2 table, p value = 0.032 (p < 0,05), which shows that there is a significant relationship between education level and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin.

Education is formal education obtained at school and greatly influences worker behavior.17 Normatively, education is the basic capital in improving human resources. One of the goals of education is to prepare someone to be capable and skilled in a field of work. This is because the level of education will reflect a person's knowledge and skills.[18]

Education influences the learning process, the higher a person's education, the easier it is to receive information.[19] The level of education can influence participation and roles of the community in behavior. Someone who receives higher education will usually be better able to think objectively and rationally so that it is easier to accept new things that are considered beneficial for him.[20]

Education is one of the characteristics that a person has and can influence worker behavior. Education is one of the factors that is the basis for providing motivation for a person's behavior in their learning experience. A worker's education level can show how much knowledge they have and how they behave at work.[21]

In this research, the results showed that there was a significant relationship between education level and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin with p value = 0.032 (p < 0.05). This is in line with research by Febriyanti (2021) that there is a relationship between education level and worker behavior with a p value of 0,004.[14]

The results of this research are in accordance with Lawrence Green's theory (2005), one of the factors that influences behavior is education.22 A person's education greatly influences a person's mindset in facing the work entrusted to him, apart from that, education will also influence the level of absorption of the training provided to carry out work and work safety.[14]

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Table 4 shows a statistical test using the Fisher Exact test, a 2x2 table, p value = 0.013 (p < 0,05), which shows that there is a significant relationship between knowledge and worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin. One of the things that influences behavior is knowledge. According to Notoatmodjo (2007), knowledge is the result of knowing after people sense certain objects. Most human knowledge is acquired through the eyes and ears. The knowledge obtained by workers, whether from formal education, training or from reading or seeing, fosters good perceptions in workers about behavior at work. [19]

The results of this research are in line with research by Alghofiqy (2018) which explains that the level of worker knowledge is related to worker behavior with p value = 0,013.15 The results of this research are also in line with Rahayu's (2015) research that there is a

relationship between knowledge and employee behavior with p value = <0,001.21 The results of this research are also in line with research by Gunawan (2016), that there is a relationship between knowledge and worker behavior with a p value of 0,002.[23]

The results of this research are in accordance with Lawrence Green's theory (2005), that one of the factors that influences behavior is knowledge.22 Workers who have low knowledge tend to behave badly, especially in maintaining the health and safety of themselves and the environment at work, and vice versa, workers who have high knowledge tend to behave well in maintaining the health and safety of themselves and the environment at work. Adopting behavior that is based on positive knowledge and awareness means that the behavior will be long lasting, but on the other hand, if the behavior is not realized by knowledge and awareness, then the behavior is temporary or does not last long.[23]

Conclusions

The existence of a significant relationship between education, knowledge and workers' behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin requires follow-up in the form of efforts to increase education and knowledge regarding the processing and disposal of sasirangan waste to workers in the sasirangan home industry in Banjarmasin.

Suggestions that can be given for further research are to examine other factors related to worker behavior in processing and disposing of waste in the sasirangan home industry in Banjarmasin.

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