



## Development of Actively Caring Model for Occupational Health and Safety on Informal Sector Workers at Sasirangan Industry

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### ABSTRACT

*Information of worker health and work health development in the informal sector at sasirangan industry is relatively lack of attention, so it should be anticipated and given a solution for a variety of obstacles in the implementation of occupational health and safety with the implementation of the Post of Occupational Health Efforts to support the active concern of occupational health and safety. This observational study using cross sectional approach aims to develop a model actively caring for occupational health and safety in informal sector workers at sasirangan industry. The population in this study were all informal sector workers at sasirangan industry registered in the Department of Industry and Trade of South Kalimantan Province in April-May 2016. The sampling technique is a Two Stage Sampling and gained as much as 230 respondents who met the inclusion criteria and come from 50 sasirangan industry in the City of Banjarmasin, Banjarbaru and Banjar. The analysis used is descriptive analysis and Structural Equation Modeling with the help of Amos software. The results showed implementation of post occupational health efforts has indirect effect on actively caring for occupational health and safety. Informal sector workers at sasirangan industry can improve the quality of self, awareness and concern about occupational health and safety, use of personal protective equipment to prevent occupational diseases and avoid injury or accident. Sasirangan entrepreneurs can pay attention to workers conditions and the use of Post of Occupational Health Efforts.*

**Keywords :** Occupational Health, Safety, Sasirangan, Informal Sector.

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### INTRODUCTION

Development of industrialization in Indonesia is growing rapidly both in the formal and informal sectors, along with the increasing number of working population, now reaches 111.3 million. The informal sector absorbs 76.69 million of labor. The success of businesses in the informal sector is also supported by occupational health seeks to address health problems as a result of work, thus increasing the welfare and productivity [1-2].

Implementation of occupational health efforts is the development strategy of health in the informal

sector in Indonesia which include promotive, preventive, curative and rehabilitative. Occupational health efforts is a form of community development in the field of occupational health and safety (OHS) in the informal sector to protect workers in order to live healthy and free of health problems and the adverse effects resulting from the work [1].

Occupational health efforts need to be developed in an effort to increase the empowerment of the target group (informal sector) to be able to take appropriate action on a variety of health problems experienced. Notoatmodjo (2005) says that health literacy and health promotion are the framework of a comprehensive approach. Empowerment finished by increasing the ability of self-help and self-efficacy to use her abilities through the utilization of the potential of working environment [3].

World Health Organization defines health literacy as cognitive and social skills that lead to motivation and ability of individual or community to always access health information and is not just a treaty, but managed to make them understand the use of health information in accordance with their capacity in the maintenance of good health [4].

Occupational health literacy is a cognitive skill and social levels of one's understanding of OHS, in which the person has the capacity to access information about OHS, understand and using OHS information in the maintenance of health, or take action to prevent hazards in the work environment [5].

Empowerment of informal sector workers are important to be held since 2016 has already begun the ASEAN Economic Community (EAC), which is an agreement between the countries in Southeast Asia to establish a good cooperation in the social and economic. The purpose of the EAC is to realize ASEAN as a region that is prosperous, ingenious and have high competitiveness in creating an equitable economy, by reducing poverty and socioeconomic inequality [6].

Indonesia is one of the ASEAN countries are also competing in the EAC. Number of small and medium industries in Indonesia since the 2009-2012 are increase, the average growth of 2.4% and the number of informal sector workers is increasing every year, the average growth of 3.45% [7].

Implementation of Post of Occupational Health Efforts (POHE) in informal sector workers is beneficial to increase the knowledge and understanding of OHS. The importance in grasp of OHS is to increase awareness and compliance with OHS norms, the participation of all parts to the optimization and realization of safety culture. Actively caring towards their OHS and the importance of safety culture will affect the safety of workers, communities and environment [8]. Strong safety culture that includes 5 elements that want to find information of OHS culture, report culture, learning culture, responsive culture, flexible and fair culture [9].

OHS is a world problem because it occurs everywhere in the world. There is always a risk of occupational diseases. Occupational diseases not only in developing countries but also in developed countries, as an example of research in Europe found new cases of pneumoconiosis still popping up on workers after retiring as England, Belgium and France. Some OHS research in the textile and garment industry in the world also have a big impact for workers in the form of occupational accidents and occupational diseases [10].

Hiremath, et al (2014) in his study of the occupational diseases in the textile industry in Solapur (India), found that all the workers who have several years of work in the textile industry, now in a state of unhealthy and unsafe because it has been exposed to high level air pollution. About 85% of workers experienced respiratory problems and only 1 of the 180 workers who have normal lung function, 60% of workers have experienced asthma, 25% of Chronic Bronchitis and the other suffering from chronic distress. Workers interviewed by Hiremath et al (2014) also mentions the

existence of musculoskeletal complaints (73%), eye problems (48%) and there was a needle stick injuries, burns, deafness, fatigue, wakeful and digestive problems. The problem is also a result of bad habits such as workers' behavior as smoking, drinking alcohol, chewing tobacco, drinking intoxicating substances [11].

Saramon (2014) from Thailand, found that workers who works in the textile industry (over 10 years) of 62.1% were in the age range 20-39 years. Workers who wear ear protectors 7.3% and only 16% of workers who use Personal Protective Equipment (PPE). Workers with respiratory disease 20.5%, 23.8% ear problems, 33.8% eye problems, 14.2% skin diseases, 6.4% hypertension, 5.9% gastritis, 4.6% musculoskeletal and 11.4% malnutrition [12].

Khan, Mustaq and Tabassum (2014), doing research with a risk analysis that explores the OHS situation in the textile industry in Lahore, Malaysia. The study found there is a different issue by creating a challenge to implement an effective OHS system in the textile industry.

Concern for the OHS is not too high and awareness to implement OHS also not satisfactory. OHS vigilance team may not include personal competent and specialized work in the field of OHS. The existence of medical facility is also unsatisfactory and among workers themselves no concern for OHS. There was never a meaningful conversation about OHS among workers with decision makers in the textile industry [13].

## MATERIALS AND METHODS

### Research Methods

The type of this research is observational because it does not require treatment and only carry out observation and analysis of the respondent. The study design in terms of time of execution of the research, including cross sectional to study the influence of exogenous variables on endogenous.

This research was conducted in the informal sector industry at sasirangan fabric production in Banjarmasin, Banjarbaru and Banjar Regency, South Kalimantan Province. The population is all informal sector workers at Sasirangan industry registered in the Department of Industry, Trade of South Kalimantan Province in April-May 2016. The samples in this study by using the estimation formula rule of thumb [14].

The technique used for sampling is a Two Stage Sampling or two stages: the first stage by identifying the Regency / City of sasirangan Industry that have registered according to the Department of Industry and Trade of South Kalimantan; the second stage by determining the sasirangan industry of each Regency / City elected. The instrument used in this study was a questionnaire, observation sheet or checklist. Part A questionnaire consisting of individual characteristics of workers who responded compiled [15] such as age, sex, marital status, education and tenure. Section B questionnaire consisting of questions about the role of sasirangan entrepreneur, health workers and stakeholder.

Part C questionnaire: scale actively caring for occupational health and safety based on the theory from Roberts and Geller (1992; 2014a) [16]. Item questions adapted to the conditions of informal sector workers at sasirangan industry in the manufacture of patterns, baste sewing, dyeing, and finishing release thread.

Total score of each questionnaire as follows:

1. Post health questionnaire consisting of 30 items of questions the highest value of each item questions 4 and the lowest 1, to get the final score of POHE by dividing the total score by

the number of the item in question.

2. Questionnaires actively caring for occupational health and safety is composed of 30 items of questions, the highest value of each item questions 4 and the lowest 1, to get the final score actively caring for occupational health and safety by dividing the total score by the number of the item in question

Quantitative data on the research presented in the form of a frequency distribution table. Data was analyzed using a computerized program (Structural Equation Modeling-SEM) using the Amos software.

## RESULT AND DISCUSSION

### 1. Variable Frequency Distribution

**Table 1** Overview of Age, Gender, Marital Status, Education and Periode of Working Informal Sector Workers, Sasirangan Industries in Banjarmasin, Banjarbaru and Banjar Regency

No	Characteristic Individual	Category	Frequency	
			$\Sigma$	%
1	Age	< 20 years old	35	15,2
		20 - 39 years old	122	53,1
		40 - 59 years old	69	30,0
		> 60 years old	4	1,7
		Total	230	100,0
2	Gender	Male	90	39,1
		Female	140	60,9
		Total	230	100,0
3	Education	Low education	53	23,0
		Middle education	165	71,8
		High education	12	5,2
		Total	230	100,0
4.	Marital Status	Not married	77	33,5
		Married	132	57,4
		Widow	21	9,1
		Total	230	100,0
5.	Periode of Working	1 - 9 years old	151	65,7
		10 -19 years old	60	26,1
		20 - 29 years old	16	6,9
		> 30 years old	3	1,3
		Total	230	100,0

Table 1 showed that 53,1% of the informal sector workers, Sasirangan industry have an age group of 20-39 years, 60,9% of workers are women, 57,4% of workers are married status, 71,8% of workers were graduate from middle education, 65,7% have worked in the sasirangan industry during the period of 1-9 years.

**Table 2.** Distribution of POHE and Actively Caring for Occupational Health and Safety Workers in Banjarmasin, Banjarbaru and Banjar Regency

No	Post of Occupational Health Efforts (POHE)	Category	Frequency	
			$\Sigma$	%
1	X1. Sasirangan Entrepreneur	Lesser role	20	88,7
		Quite role	4	
		Good role	23	10,0
2	X2. Health Workers	Lesser role	3	1,3
		Quite role	18	81,7
		Good role	8	
3	X3. Stakeholders	Lesser role	35	15,2
		Quite role	7	3,0
		Good role	78	33,9
4	Y. Actively Caring for Occupational Health and Safety Pekerja	Lesser role	14	63,5
		Quite role	6	
		Good role	6	2,6
		Less concerned about the OHS	0	0
		Enough care about the OHS	24	10,4
		Good care about the OHS	20	89,6
			6	

Based on table 2. 88.7% sasirangan entrepreneur has less role in the implementation Post of Occupational Health Efforts (POHE) because during this time most of business owners of sasirangan were not involved primarily in terms of the management and development of occupational health program. Sasirangan entrepreneur has it own working groups meet periodically, but the meeting has not been much mention about OHS in sasirangan workers, they are more focused on business productivity, innovation and promotion.

Mainly health workers have lesser role (81.7%) in the implementation of POHE means service preventive, promotive and curative to the workers has not been well established. This is consistent with data from the Ministry of Health, Republic of Indonesia (2012) showed that only 27% of public health centers to provide guidance POHE, so nationally 83% of health workers had a minimal role in the POHE.

Respondents considered stakeholder quite a role (63.5%) in group foster sasirangan workers especially in providing sasirangan training cloth making but have not touched on OHS issues specifically. Stakeholders are actively fostering sasirangan industry worker is an officer of the Department of Industry and Trade of South Kalimantan, almost every month held Sasirangan related training in several regencies / cities in South Kalimantan.

The majority of votes actively caring for occupational health and safety (OHS actively to the concerns) associated with the willingness of both categories with a percentage of 89.6%. Willingness good means there is a desire of workers to report any incidence of illness or injury that occurs in the workplace to the sasirangan entrepreneur.

## 2. Relationship analysis of Post of Occupational Health Efforts and Actively Caring for Occupational Health and Safety Workers in Banjarmasin, Banjarbaru and Banjar Regency

**Table 2.** Relationship of Post of Occupational Health Efforts and Actively Caring for Occupational Health and Safety Workers in Banjarmasin, Banjarbaru and Banjar Regency

Pathways Influence	Value Effect	Type of Influence
	-0,018	Indirect
	0,069	Indirect
Post of Occupational Health Efforts (X) > Actively Caring (Y)	0,081	Indirect
	-0,013	Indirect
	0,015	Indirect

The total value of the effect is obtained from the sum of the weights of direct and indirect influence, ie the total value of the effect of Pos Occupational Health Efforts to construct 0.134 Actively Caring for the results obtained from  $(0.069 + 0.081 + 0,015 - 0,018 - 0,013 = 0.134)$ . Post of Occupational Health Efforts indirect effect on Actively caring for occupational health and safety.

Sasirangan industry consists of workers in the manufacture of pattern / motif, dyeing dye, sewing and stitching and finishing release (completion of the work). Although this sasirangan industry including small and medium enterprises, but productivity is high enough so that the production process contains a potential danger. So the principle is still required OHS [17].

The results of field observations indicate that most sasirangan entrepreneurs have less role in the implementation of health effort because during the sasirangan entrepreneur feel have not been involved in the organization of POHE particularly in terms of the management and development of OHS Program. POHE in Sasirangan industry can not be enjoyed by the people. Informal sector workers who are sick tend to go to health centers. Supposedly workers can be handled in the POHE if not impossible, not referred to health centers by health officials assisted by Cadre of occupational health efforts.

Cadre of occupational health efforts have not been specifically. During that acts as a cadre of occupational health efforts are cadres of Posyandu and have not received the material on OHS. Cadre training efforts need to be planned. Based on information in the field are already some sasirangan entrepreneur or workers who are interested in becoming a Cadre of Occupational Health Efforts.

Occupational health cadre training efforts sasirangan can be held if there is already planning and budgeting postal training occupational health efforts by the Department of Health in collaboration with the Provincial Health Training Center of South Kalimantan. Health workers in health centers have the skills and knowledge about different OHS so that not all health care providers can play a role in the organization of POHE. Health workers are deemed to be lacking role means service preventive, promotive and curative to the sasirangan working population has not been well established.

This fact is caused partly because health workers also do not have concern for the OHS community and informal sector workers has not been rising regulation (Regulation of the Governor or regulation Regent / Mayor) as the umbrella law regulating this matter as well as the absence of written instructions from the Provincial Health Office to District Health Office / City of the importance of the establishment and administration of POHE.

Stakeholders considered quite instrumental in fostering group of sasirangan workers especially in terms of providing capital funding support and training related to the manufacture of sasirangan

industry but the training has not been touched on OHS.

Terms in the establishment and administration of occupational Health efforts is the group of informal sector workers who need health care workers, the wishes of the workers to form a POHE, there is the willingness of workers to be cadres of occupational health efforts, there is a place that is adequately equipped nameplate, availability of office equipment (stationery, blackboards, desks, chairs), provided medical equipment (scales, height measuring, mattresses, medicine box as well as posters and leaflets) and also there are examples of equipment of PPE [18].

Informal sector workers who have the willingness well to concern actively to OHS 89,6%. Sasirang entrepreneur, health workers can also apply actively caring for occupational health and safety that will affect the OHS workers, community and environment sasirangan industry. OHS culture implementation can begin on the situational aspects (Post of Occupational Health Efforts) elevates the spirit of mutual cooperation; togetherness, each open to one another; sense of family: communication; labor productivity and responsiveness to developments outside world [19-20].

Actively caring is full attention, concern for the aspects relating to safety, security in the workplace environment and behavior, perception and attitude of the person who is obliged to implement OHS (Geller, 2001). According to Nursalam (2014) appearance of behavioral health personnel influencing client satisfaction is health care workers who have a caring soul, always maintained and updated continuously so as to improve the image softskill.

Five major components of caring behavior that maintaining belief on the events and see it full of wisdom), knowing (trying hard to understand the significance of the top events in others), doing for (work / do something for others as for themselves) and enabling (facilitating others in the transition state and not familiar) [21].

The research result from Randall (2013) which states that the survey showed Actively caring health efforts work very good consistency factor. Convergen and divergent validity by measuring five personality traits, social status, cognitive failure questionnaire, impulsiveness and personality questionnaires demonstrated 88.9% predict: actively caring but has a negative correlation with social status [22].

Description the research results prove that the model theory actively caring for occupational health and safety leave a good impact on the quality of health workers, it is necessary to the health program development efforts in the informal sector is by organizing POHE at sasirangan industry.

The research findings actively theoretical model caring for occupational health and safety in this study can be applied to the field of promotion of OHS in the workplace and the informal sector in the formal sector as firms or in hospital.

## CONCLUSION

Based on the results of this study concluded the implementation of POHE are supported by entrepreneur, health workers and stakeholder will increase awareness of informal sector workers at sasirangan Industry. These factors affect worker self-empowerment, a sense of usefulness of self and sense of belonging to his fellow group members sasirangan industrial informal sector workers.

## Conflict of Interest

The Author declare that there is no conflict of interests regarding the publication of this paper.

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## REFERENCES

- [1] Ministry of Health Republic Indonesia. Policies and Strategies for Development of Occupational Health Informal Sector in Indonesia, Jakarta: Directorate of Occupational Health and Sports, World Health Organization, **2012**.
- [2] Sholihah dan Kuncoro. Occupational Health Safety, Concept, Development and Implementation of Safety Culture, Medical Book Publishers, Jakarta, **2014**.
- [3] Notoatmodjo, S. Health Promotion, Theory and Application, Rineka Cipta, Jakarta, **2005**.
- [4] Nutbeam, D. Health Literacy as a Public Health goal: a challenge for contemporary health education and communication strategies into the 21<sup>st</sup> century, Health Promotion International, Departement of Public Health and Community Medicine, University of Sydney, **2000**;15(3): pp: 259-267.
- [5] Rauscher K.J., Myers, D.J. Occupational health literacy and work related injury among U.S. adoslescents, International Journal Contr Safety Promotion, **2014**;21(91):pp 81-9.
- [6] ASEAN . ASEAN Economic Community Blueprint, ASEAN Secretary: Jakarta, **2008**.
- [7] Anggraeny,. Analysis of Factors Affecting the Production Results In the Production Department on Labor of Handmade Batik in Small Industry, Tuban, Faculty of Economics and Business, Brawijaya University, Malang, **2016**.
- [8] Stranks, J. Human Factors and Behavioral Safety, 1<sup>st</sup> Oxford: Elseiver Ltd. **2007**.
- [9] Reason, J. (1997) Managing the Risk of Organizational Accidents, Ashgate, Aldershot; Douglas, E., Cronie, S., Leva, C., Balfe, N. (2014) Modelling the Reporting Culture within a Modern Organization, Journal Chemical Engineering Transactions, **2014**;38: 589-594.
- [10] Kurniawidjaja, L.M. Theory and Application of Occupational Health, University of Indonesia Publisher, Jakarta, **2011**.
- [11] Hiremath, R.B., Kattumuri, R., Kumar, B. Health and Safety aspects of textile workers from Solapur (India) textile industries, Indian Journal of Community Health, **2014**;26(4):pp 364-369.
- [12] Saramon, S. A study on exposure related health problems in textile industry, Journal Occup Med Health Aff, **2014**;2(3):67.
- [13] Khan, W.A., Mustaq, T., Tabassum, A. Occupational Health, Safety and Risk Analysis, International Journal of Science, Environment and Technology, **2014**;3(4):pp 1336-1346.
- [14] Hair, J.F. Jr. Anderson, R.E., Tatham, R.L. Multivariate Data Analysis, 7<sup>th</sup> edition, Upper saddle River, Prentice Hall International, UK, **2010**.
- [15] Notoatmodjo, S. Health Research Methodology, Rineka Cipta, Jakarta, **2012**.
- [16] Roberts, S. Building an Ideal Safety Culture, Journal of Applied Radical Behavior Analysis,



Public Lectures-27<sup>th</sup>, **2014**; pp: 5-9.

[17] Kuswana, W.S. Ergonomics and OHS, PT Remaja Rosdakarya, Bandung, **2014**.

[18] Ministry of Health Republic Indonesia. Post of Occupational Health Efforts, Fourth Edition, Jakarta, **2006**.

[19] Geller, E.S. The Psychology of Safety Handbook, Lewis Publishers, Boca Raton London New York Washington DC, **2001**.

[20] Cooper, D. Management Safety Culture A model for understanding and quantifying a difficult concept, Journal Professional Safety, Juni, **2002**;47(6): 30-36.

[21] Nursalam, Scientific Oration of Prof Nursalam, M.Nurs, Faculty of Nursing Science, Airlangga University., **2014**.

[22] Randall, P. Actively Caring About The Actively Caring Survey: Evaluating the Reliability and Validity of A Measure of Dispositional Altruism, Electronic Theses and Dissertation, School of Graduate Studies East Tennessee State University, **2013**.