Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI: 10.21474/IJAR01/20980
DOI URL: http://dx.doi.org/10.21474/IJAR01/20980

RESEARCH ARTICLE

SOCIAL FACILITIES AND UNSAFE ACTION AMONG INFORMAL FISHING WORKERS

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Manuscript Info

Manuscript History
Received: 27 March 2025
Final Accepted: 30 April 2025
Published:May 2025

Key words:-
Social Facilities, Unsafe Action, Informal Workers, Fishermen

Abstract

Informal workers contribute to many work accidents, even more than formal workers. Human factors such as dangerous actions are the main cause of work accidents among fishermen. Because informal fishing workers do not have a formal organization responsible for occupational safety and health practices, social facilities are thought to contribute to dangerous actions among informal fishing workers. This research uses an observational method with a cross-sectional study design. The research was conducted in Belang District in Southeast Minahasa Regency and East Likupang District, North Minahasa Regency, North Sulawesi Province. The location was chosen because the two sub-districts are traditional fishing villages famous as fish suppliers in North Sulawesi, and most of theresidentswork as fishermen. The population comprises informal workers who work full-time as fishermen and use outboard motorboats. The sample size was determined using a formula with 199 fishermen. Simple random sampling with exclusion criteria of refusing to participate or refusing to be interviewed. Data was collected by directly visiting fishermen, including inspecting the boats used, after signing informed consent. The instrument uses a questionnaire whose validity and reliability have been tested. The data was then analyzed descriptively and using a linear regression test. The results show that the presence of social support from peer groups and families has a significant impact on reducing unsafe acts in informal workers who work as fishermen. Peer group support refers to the support and interaction provided by coworkers in the same work environment. In contrast, family support includes the support and role of the family in supporting fishermen's work activities. With social facilitation through support from peer groups and families, informal fishing workers tend to be more aware of security and safety in doing their jobs. Support from coworkers helps raise awareness of safe practices that can reduce the risk of injury or accidents. In addition, support from family provides confidence and motivation to prioritize safety in carrying out their duties.

Introduction:-

The total working-age population in Indonesia is 199.4 million; 58.22 millionwork in the informal sector, and 41.78 millionwork in the formal sector. Traditional fishermen are informal workers, totalling 2.2 million people (BPS, 2021). Informal workers usually have more workload and time, while workers' wages are substandard and they lack knowledge about occupational health and (Rusdjijati & Aman, 2015), Health financing system coverage is still not good(Yusida et al., 2017).

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A study of informal fishermen found that 55% of the workers reported work-related health problems. Inadequate working conditions, such as heat and noise, can create additional stress for workers (Tripathi et al., 2017) 74.19% of fishermen worked at noise levels above the limit (>85 dB), and 92.47% did not use earplugs while working. Years and 60.2% had hearing loss(Hanafi & Sholihah, 2017) 80% of fishermen in Indonesia do not have access to social security, including work accident insurance, old age insurance, pension insurance, and death insurance (Azhar et al., 2020).
Informal workers are suspected to be the cause of a high number of work accidents (Yusida et al., 2017;Handayani et al., 2011), found that 77.8% of informal workers experienced work accidents, while (Ramdan & Handoko, 2016)reported that 62% experienced work accidents. In Samarinda, 58.33% of informal workers experienced work accidents(Duma & Nuryanto, 2018), whereas in Thailand, the number of work accidents among informal workers was 10 times higher than that among formal workers. (Kongtip et al., 2008). Several studies have evaluated the level of risk in fishermen's work and found a high frequency and seriousness of occupational accidents of 103 per 1000 fishermen (Chauvin et al., 2017).
The human factor is a significant component of the causes of accidents in the workplace, and behavioural factors are involved in more than 90% of fatal accidents (Feyer et al., 1997). Heinrich's et al., research (1980) found that the cause of work accidents was 88% of unsafe actions, unsafe conditions caused 10%, and 2% caused by other factors that could not be considered. The human factor is a major contributing component of workplace accidents(Patterson & Shappell, 2010;Gordon, 1998). The maritime industry shows that most accidents are caused by human error and are closely related to unsafe actions (Chan, Hamid, & Mokhtar, 2016; Fan et al., 2020).

Overall, the combination of unsafe action and unsafe conditions is the most common cause of death(Feyer et al., 1997;Kelly & Efthymiou, 2019; Zarei et al., 2019). The causes of work accidents in informal workers are related to human factors, most of which are caused by unsafe actions (Reason, 1995; Dodoo & Al-Samarraie, 2019). Research in three traditional fishing ports in Morocco found that 60.4% worked with unsafe action (Laraqui et al., 2017). The results of research on fishermen in Pantura showed that 85.7% did unsafe actions related to work accidents(Latif & Yulyanti, 2020).
Although informal workers operate in work environments that are highly risky to safety and health, occupational health and safety disciplines and practices are generally only applied in the formal employment sector in formal workplaces (Lund et al., 2016). Informal fishermen in Indonesia generally do not have an organizational structure like formal workers. They tend to work independently, although some makeup groups. However, these groups usually aim for short-term and unsustainable empowerment (Safaria et al., 2003). The Community Health Center is responsible for fostering occupational safety and health aspects through Occupational Health Efforts (UKK). However, reality shows that these efforts are not practical and focus more on curative efforts (Wilujeng & Martiana, 2006).
Due to the lack of formal organization among informal fishermen responsible for occupational safety and health, social support from family and fellow fishermen is expected to play an important role in encouraging safe behaviour in the work environment. Social attention can affect a person's relationships and behaviour. The presence of others in social attention can improve one's performance in simple or preemptive tasks, known as the social facilities effect (Glanz et al., 2002;Ryan, 2020;Ryan & Sawin, 2009), social support can also increase reputation issues, making individuals likely to adjust their behaviour to conform to the expectations of others(Glanz et al., 2002) including has a direct effect on health services (Prang et al., 2016).
Social facilities are important in the relationship between individuals and their communities. Social facilities can positively affect physically, mentally and socially related to one's behaviour. Social facilities are interactions between a community and society with individual factors. Social facilities consist of emotional, instrumental, or informational support and assessments that facilitate involvement in health behaviours(Glanz et al., 2002;Ogden, 2015).Peer support of professions can also influence social norms within professional groups. If professional peers support and implement desired health behaviours, individuals will likely feel compelled to follow and maintain those behaviours. This can affect individual perceptions of the needs and benefits of peril (Glanz et al., 2002). The results also showed that family support affects organizational performance(Neneh, 2017), physical activity (Laird et al., 2018) and psychological characteristics(D'Arripe-Longueville et al., 2009) The study aimed to analyze the influence of social facilities on unsafe actions in informal fishermen.

Research Method:-

This study used a cross-sectional study method, which was carried out from August 2022 to February 2023 in two regions in North Sulawesi, namely Belang District in Southeast Minahasa Regency and East Likupang District in North Minahasa Regency. Both sub-districts are traditional fishing villages and are fish suppliers for North Sulawesi Province and its surroundings. In addition, the region also represents the informal working population of fishermen in general. The population studied is informal workers who work as full fishermen and are members of informal groups and use

outboard motorboats as the primary means of transportation. The sample size was 199 fishermen randomly selected with exclusion criteria for those who refused to participate or be interviewed.
In this study, social facilitation was measured using two variables, namely family support and fishermen group support. Both types of support were assessed using four indicators: emotional support, instrumental support, informational support, and evaluation support. Unsafe actionswere measured using concepts adapted from The Human Factors Analysis and Classification System (HFACS),which were modified to reflect the potential hazards informal fishing workers face.Unsafe actions were assessed based on two indicators:errors and violations.The conceptual framework for this study was carried out after a preliminary survey and review of related literature. Data collection involved direct engagement with fishermen to verify their eligibility according to the research criteria, which included inspection of the boats they used. The data collection procedure used a questionnaire with a Likert scale, which has been tested for validity and reliability. In addition, interviews were conducted to complement the questionnaire and ensure data accuracy. Prior to data collection, participants were informed about the study and asked to provide written informed consent. Ethical approval for this research was obtained from the Faculty of Public Health,Universitas Airlangga (UNAIR). Data were analyzed using descriptive statistics and linear regression analysis.

Results and Discussion:-

Table 1:- Individual Characteristics of Informal Fishermen by Age, Work Experience and Education.

Variable	Category	Frequency (n=199)	(%)	Mean ± SD
Age	17-25 (Late teens)	19	9,55	41,47±11,75
	26-35 (Early adulthood)	51	25,63	
	36-45 (Late adulthood)	56	28,14	
	46-55 (Early elderly)	44	22,11	
	56-65 (Late elderly)	29	14,57	
Work Experience	2 - 12 years	55	27,64	20,55±10,81
	13-20 years	56	28,14	
	21-30 years	47	23,62	
	31-45 years	41	20,60	
Education	Did not finish elementaryschool	33	16,58	
	Graduated from elementary school	77	38,69	
	Graduated from junior high school	42	21,11	
	Graduated from high school	47	23,62	

Based on the research results in Table 1, the average age of informal fishing workers is 41, with the lowest age being 17 and the highest 65. Meanwhile, according to the age group according to the Indonesian Ministry of Health, most of them are in the adult category, both early adulthood and late adulthood. The data shows that no informal fishermen workers are brought by working-age residents of 15 years(BPS, 2022). This result is with Law of the Republic of Indonesia number 20 of 1999 concerning the ratification of ILO convention no. 138 concerning minimum age for admission to employment (ILO convention concerning minimum age for admission to employment. (Kemenaker, 1999). The results also showed that there are still many elderly fishermen (> 56 years). The results of field interviews found that even though informal fishermen workers are more than 56 years old, they still work because they feel healthy and able to work; there are no other alternative jobs and family economic demands. This study's results align with research conducted by (Suhartoyo et al., 2022). As many as 42% of fishermen in the elderly category are still working. The results of interviews in the field also found a tendency for interest in becoming traditional fishermen to decrease, as can be seen from the relatively small age group compared to the adult age group. One reason for the decline in interest in working as a traditional fisherman is that traditional fishing jobs do not provide certainty for the future, and parents do not want their children to become traditional fishermen.

Data shows that the number of fishermen in Indonesia has declined over the past decade. In 2010, the number of fishermen was 2.16 million; in 2019, there were only 1.83 million people. WAHLI explained that the decline in the number of fishermen in Indonesia was caused by two factors, namely the climate crisis and the expansion of extractive industries on the coast, sea, and small islands. Due to climate change, fishermen in Indonesia also feel the impact because fishing at sea is very dependent on favourable weather. When the weather at sea is terrible, fishermen cannot go to sea. In addition, climate change makes it difficult for fishermen to predict the weather. In addition to worsening weather, waves in the sea are also increasing due to climate change. This condition forces fishermen not to go to sea.

Due to climate change, Indonesian fishermen can only go to sea for about 180 days or six months a year. This worsens the socioeconomic life of Indonesian fishermen. This situation forced Indonesian fishermen to change professions. (https://www.walhi.or.id/nomor-nelayan-di-indonesia-lanjutan-menurun-akibat-krisis-iklim-dan-industrial). The results of research conducted by(Anna et al., 2019) Anna et al., (2019) shows that in Indonesia, fishermen are one of the poorest professions. This is based on the analysis of National Socioeconomic Survey (SUSENAS) data that as many as 11.34% of people in the fisheries sector are classified as poor, higher than the restaurant service sector (5.56%), building construction (9.86%), and waste management (9.62%).
Analysis of work experience shows that the average length of work of fishermen is 20 years; when viewed from the categorization, it shows that the length of work in fishermen is almost evenly distributed in each category, with the most work experience of 13-20 years, which is 29.2%. Field interviews found that nearly all informal fishing workers had jobs inherited from their parents, which caused them to start working as fishermen at a relatively young age; this resulted in work experience that was mostly more than 13 years. This research is in line with the results of Konoralma et al. (2020), who state that the average length of work of informal fishermen workers is quite long, namely 26 years because the work is carried out for generations.

Meanwhile, according to the level of education, the most significant percentage of informal fishermen workers graduated from elementary school. This shows that 16.6% of informal fishermen are educated without completing primary school. The interviews with fishermen found that the causes of the large number of informal fishermen workers with low education levels include economic factors. In addition, the distance to continuing education and the existence of a permissive attitude toward the principle that no matter how high the education, later will return to being a fisherman are also causes. The results of the analysis of the National Labor Force Survey Data (SARKESNAS), show that the highest percentage of informal labour education in Indonesia is with an education level less or equal to elementary school at 66.68% and the lowest level of higher education, 10.04% in 2018(Arifin & Sani, 2019). The results of field interviews found that one of the reasons for the decline in interest in working as traditional fishermen is that traditional fishermen's jobs do not provide certainty for the future, and parents do not want their children to become traditional fishermen.

Table 2:- Social Facilities and Unsafe Action Scores.

Social Facilities	Mean	SD (±)
Fishermen's Group Support		
- Emotional support	8,65	1,39
- Instrument support	10,94	2,62
- Information support	7,44	1,72
- Evaluation support	5,98	1.30
Family Support		
- Emotional support	13,52	1,93
- Instrument support	10,11	1,40
- Information support	9,25	1,81
- Evaluation support	6,71	1,34
Unsafe Action		
- Errors	49,43	8,89
- Violations	33,71	9.44

Table 2. shows that family support has a better influence than group support. The results of field interviews found that the fishermen group formed did not function well in coaching its members. Fishermen groups tend to function only for specific purposes, such as obtaining assistance from the government. This condition causes informal fishermen workers not to get optimal support from existing groups. The results also showed that the most significant group support was instrument and emotional support, information and evaluation. Meanwhile, the greatest family support is emotional support, followed by instrumental support, information, and evaluation. The results of observations and interviews in the field found that the support of instruments was higher in the fishing group, probably because Occupational Safety and Healthinstruments such as life jackets, personal protective equipment, and other safety equipment can be used together at work, including lending to friends when needed. Following Table 2 shows that fishermen commit more violations than mistakes. This event can be explained by the fact that in errors, one of the indicators that is measured is skill-based errors. If it is related to the length of work of relatively experienced fishermen, it will impact the more proficient fishermen in skills that affect the work so that errors will be reduced.

Table 3:- Results of the Linear Regression test the effect of group and family support on Unsafe action in informal fishing workers.

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig	Collinearity Statistics	
	B	Std error				Tolerance	VIF
Constant	153.188	11.319		13.534	<.001		
Group support	-.870	.210	-.272	-4.147	<.001	.990	1.011
Family support	-1.038	.207	-.328	-5.003	<.001	.990	1.011

To ensure the feasibility of the regression test, a model feasibility test using the F test obtained a value = 19.199 ($p < 0.01$) so that the estimated linear regression model is feasible to be used to explain the effect of group support and family support on unsafe Action in informal fishermen. The analysis results in Table 3 found the significance of t values < 0.01; thus, group and family support significantly affected unsafe Action in informal fishermen. After the test results, the multiple regression equation is obtained as follows:

Unsafe Action = 153,188 – 0.870 group support – 1,038 family support.
The results of the correlation test obtained $R = 0.405$ ($p < 0.01$), meaning that total group support and family support had a significant effect on unsafe Action. The adjusted R square value = 0.155 means that the variation in unsafe acts in informal fisheries workers by 15.5 per cent can be explained because family support and group support are influenced by other variables not examined in this study. The results of the tests on the equation demonstrate that both group and family support for fishermen can reduce unsafe actions by informal fishermen workers. This study reinforces the results of other studies that social facilities can influence one's behaviourcan improve one's performance in simple tasks(Glanz et al., 2002;Ryan, 2020; Ryan & Sawin, 2009), makes individuals tend to adjust their behaviour to match the expectations of others(Glanz et al., 2002) and has a direct effect on health services (Prang et al., 2016).

Group and family support can increase motivation and self-confidence, increase knowledge and skills, raise awareness of risks, and improve the quality of relationships between family and fellow members (Glanz et al., 2002;Ogden, 2015;Daniel et al., 2022)The results show that the presence of social support from peer groups and families has a significant impact on reducing unsafe acts in informal workers who work as fishermen. Peer group support refers to the support and interaction provided by coworkers in the same work environment. In contrast, family support includes the support and role of the family in supporting fishermen's work activities. With social facilities through support from peer groups and families, informal fishing workers tend to be more aware of security and safety in doing their jobs. Support from coworkers helps raise awareness of safe practices that can reduce the risk of injury or accidents. In addition, support from family provides confidence and motivation to prioritize safety in carrying out their duties.The results of this study also show that social interaction and support from the work environment and family play an essential role in shaping safe behaviours in informal fishing workers. Improving these social facilities is expected to establish a strong safety culture in the workplace and reduce unsafe acts that could jeopardize the safety and well-being of fishermen workers. These findings contribute to developing more effective strategies and policies to improve occupational safety in the fishing industry and other informal workers.

Conclusion:-

The analysis of unsafe actionsamong informal fishermen revealed that family support is more effective than support from fishing groups. In addition, the incidence rate of errors is higher than violations in the unsafe action observed among informal fishermen. Social facilities have a significant effect in reducing unsafe actions in this population. Therefore, it is recommended to strengthen such support through interventions in fishermen groups and families as one alternative to reduce the risk of unsafe action in informal fisher workers. This approach isimportant considering the absence of formal occupational safety and health organizationswithin the informal fishing sector, where work conditions are inherently hazardous.

Acknowledgment:-

The author would like to thank the Head of the Likupang Community Health Center and the Head of the Belang Community Health Center and the staff as well as all informal fishermen workers in Likupang II Village and Belang Village who have helped and agreed to be respondents in this research.

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