

## THE RELATIONSHIP BETWEEN OCCUPATIONAL SAFETY AND HEALTH BEHAVIOR AND WORKPLACE ACCIDENTS IN MICRO, SMALL AND MEDIUM RATTAN BUSINESSES IN GRESIK DISTRICT

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### ABSTRACT

Kecelakaan kerja ditimbulkan dari kejadian di lingkungan kerja yang sifatnya pasti merugikan berbagai pihak bahkan berujung pada kecacatan bahkan kejadian paling fatal yakni kematian. Kecelakaan kerja di UMKM Rotan Kabupaten Gresik yang terlihat paling mendominasi antara lain karena kurangnya pengetahuan, sikap, kepatuhan dan Alat Pelindung Diri. Tujuannya yakni mengetahui bagaimana hubungan perilaku Keselamatan dan Kesehatan Kerja dengan kejadian kecelakaan kerja pada Usaha Mikro Kecil dan Menengah Rotan di Kabupaten Gresik. Penelitian dilakukan secara *cross-sectional* dan tergolong kategori kuantitatif. Populasi yang terlibat yakni 278 pekerja yang bekerja di 16 UMKM rotan setengah jadi. Sampel dipilih dengan cara acak (*simple random sampling*) dan rumus *Slovin* sehingga diperoleh total 165 pekerja sebagai responden. Pengumpulan data dilakukan melalui tiga metode utama, yaitu observasi langsung, wawancara, dan kuesioner. Variabel yang digunakan adalah perilaku K3 yang mencakup pengetahuan K3, sikap K3, kepatuhan K3 dan penggunaan alat pelindung diri (*independen*), sedangkan kejadian kecelakaan kerja (*dependen*). Analisa data menggunakan 2 metode uji statistik, baik *Chi-square* maupun *Fisher's exact test*. Hasil dari penelitian berkesimpulan beberapa pernyataan, ada hubungan antara pengetahuan dengan kecelakaan kerja ( $p=0,008$ ), ada hubungan antara sikap, kepatuhan dengan kecelakaan kerja ( $p=0,000$ ), ada hubungan antara Alat Pelindung Diri dengan kecelakaan kerja ( $p=0,004$ ). Faktor dominan yang mempengaruhi kecelakaan kerja adalah faktor kepatuhan terhadap instruksi kerja (OR 13,993). Saran perbaikan yakni diharapkan UMKM Rotan Kabupaten Gresik memberlakukan pelatihan rutin tentang prosedur keselamatan kerja kepada pekerja agar dapat meningkatkan pengetahuan pekerja dan ketersediaan serta penggunaan APD.

**Kata Kunci:** APD, kecelakaan kerja, kepatuhan, pengetahuan, sikap

### ABSTRACT

*Work accidents are caused by events in the work environment which are certain to harm various parties and even lead to disability and even the most fatal event, namely death. Work accidents in Gresik Regency Rattan MSME's that appear to dominate are due to a lack of knowledge, attitudes, compliance and Personal Protective Equipment. The aim is to find out how the relationship between Occupational Safety and Health behavior and the incidence of work accidents in Rattan Micro, Small, and Medium Enterprises in Gresik Regency. The study was conducted cross-sectionally and classified as quantitative. The total population involved is 278 workers who worked in 16 semi-finished rattan MSME's. The selected participants were randomized (simple random sampling) and Slovin's formula, resulting in a total of 165 workers as respondents. Data collection was conducted through three main methods, namely direct observation, interviews, and questionnaires. The variables used are OHS behavior which includes OHS knowledge, OHS attitude, OHS compliance and the use of personal protective equipment (independent), while the*

*incidence of work accidents (dependent). Data analysis used 2 statistical test methods, both Chi-square and Fisher's exact test. The results of the study concluded several statements, there is a relationship between knowledge and work accidents ( $p = 0.008$ ), there is a relationship between attitude, compliance with work accidents ( $p = 0.000$ ), there is a relationship between Personal Protective Equipment and work accidents ( $p = 0.004$ ). The dominant factor influencing work accidents is the factor of compliance with work instructions (OR 13.993). Suggestions for improvement are that it is hoped that Gresik Regency Rattan MSME 's will impose regular training on work safety procedures to workers in order to increase workers awareness as well as to ensure that PPE is available and used.*

**Keywords :** *attitude, compliance, knowledge, occupational accidents, safety equipment*

## 1. INTRODUCTION

Efforts to prevent the occurrence of work-related diseases or accidents can be controlled through the Occupational Safety and Health (K3) program, which also aims to provide protection and even guarantee the safety and health of workers (Permenaker No. 11, 2023). The objectives of implementing SMK3 include creating a safe work environment, providing guaranteed K3 protection, and with the role of management and workers will reduce the incidence of diseases or accidents due to work (PP Number 50, 2012). Ignoring K3 regulations by companies will be at high risk of experiencing an accident in the workplace, so that the accident is difficult to avoid. Work accidents certainly cause several losses such as workers with decreased productivity, companies experiencing chaos due to decreased profits, and loss of working hours (Aprilianti et al., 2022).

Data from *the International Labor Organization (ILO)* shows that in 2022, there were 13,139,478 work accidents and work injuries with 1,071,664 work accidents in the fields of agriculture, forestry and fisheries each year, accidents can result in workers not coming to work (absenteeism) (ILO, 2022). BPJS Ketenagakerjaan data in November 2022 recorded 265,334 cases of work accidents, the number of incidents is greater than in 2021 with a difference of

13.26% (Situmeang, Putri and Pebrianti, 2023).

Micro, Small and Medium Enterprises (MSMEs) are classified as part of the informal sector, with a larger number compared to previous data and the results of a survey of the entire informal sector in Indonesia recorded that 75% marketed products directly to consumers. (Hendro et al., 2021). Report notes in 2023 based on the Central Statistics Agency (BPS) have stated that 59.11% of the total workers in Indonesia work in the informal industrial sector (BPS, 2023). According to (Santriyana, Dwimawati and Listyandini, 2023), the informal sector related to the implementation of K3 has not been implemented due to the lack of legal support for the development of the informal sector as well as the lack of K3 awareness and cross-sector collaboration related to the informal sector.

In recent years, Gresik MSMEs have increased exports of rattan craft products to various countries, Gresik Rattan MSMEs have succeeded in exporting including to Japan. Revenue from Gresik MSME exports until April 2022 has increased to USD 34,154.56 or IDR 492,440,446.08. Gresik rattan MSMEs are a craft industry based on rattan as the basic material and produced in Gresik City, East Java, Indonesia. Increasing the quality of production and export of Gresik rattan craft products is expected to

increase market share and improve the regional economy.

The results of observations of several work accidents over the past 3 years in several rattan MSMEs in Gresik Regency occurred during the process of separating the rattan core (fibrite) from the rattan skin with the following case details: in 2021, 25 cases of work accidents were recorded, consisting of 20 cases of minor work accidents, 3 cases of respiratory disorders, and 2 cases of eye infections. In 2022, the number of accidents decreased to 23 cases, with details of 1 case of a finger being hit by a cutting machine, 20 cases of minor work accidents, and 2 cases of respiratory disorders. Then, in 2023, 18 cases of work accidents occurred, including 1 case of a finger being hit by a cutting machine, 16 cases of minor work accidents, 1 case of respiratory disorders, and 1 case of burns to the feet.

Field observation results in some rattan MSMEs found work accidents in a certain period, there were 2 fingers hit by cutting machines due to workers not wearing Personal Protective Equipment (PPE) and lack of focus, this statement is further strengthened by interviews stating that 80% of workers lack knowledge about K3, so that workers are vulnerable to work accidents. The majority of workers with work experience of more than 10 years, most do not have sufficient knowledge about K3. These workers feel they are experienced in working, so they tend to ignore the importance of K3. According to (Dharmawan and Ghani, 2023), 80-85% of accidents that have occurred come from humans who are negligent or even wrong in acting. The reason for work accidents is the lack of K3 behavior (knowledge, attitude, perception of K3). The results of the study (Uyun and Widowati, 2022), workers' knowledge or understanding of K3, have an impact on how workers will act or behave in order to minimize the risk of accidents. Based

on the explanation above, research on K3 behavior with work accidents is considered necessary to conduct research.

## 2. RESEARCH METHODS

The study was conducted *cross-sectionally* and is classified as a quantitative category, focusing on semi-finished rattan MSMEs in Gresik Regency in September - December 2024. The population involved was 278 workers working in 16 semi-finished rattan MSMEs. The sample was selected randomly (*simple random sampling*) and the *Slovin formula* so that a total of 165 workers were obtained as respondents. Data collection was carried out through three main methods, namely direct observation, interviews, and questionnaires.

Primary research data collection use completed questionnaire in a way directly by 165 respondents. The variables used is K3 behavior which includes K3 knowledge, K3 attitude, K3 compliance and use tool protector self (independent), while incident accident work (dependent). Data analysis using 2 statistical test methods, both *Chi-square* and also *Fisher's exact test*, with level 95% confidence ( $\alpha = 0.05$ ).

## 3. RESULTS AND DISCUSSION

### Cross Tabulation of Knowledge with Incident Accident Work

Table 1 Cross Tabulation of Knowledge with Incident Accident Work at UMKM Rattan Gresik Regency in 2024

Knowle dge	Incident Accident Work				Total	
	Happe n Accide nt		There is no Accide nt			
	f	%	f	%	f	%
Not good	10	74	4	21	11	68
	9	.7		.0	3	.0
Good	37	25	1	79	52	32
		.3	5	.0		.0

<b>Total</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>10</b>
	<b>6</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>0</b>
<b>p-value</b>	<b>0.008</b>					

Data that has been presented in table 1 explains that results tabulation cross between knowledge with incident accident Work found that part big worker with lack of knowledge good and experienced accident work (74.7%) compared to with workers who do not experience accident work (21%). Workers with good knowledge part big experience accident work (79%) compared to with workers who do not experience accident work (25.3%).

Result value significance obtained through statistical testing *Chi-square* namely 0.008 (<0.05), meaning there is significant relationship between knowledge with incident accident work at the Rattan UMKM in Gresik Regency (H0 is rejected and H1 is accepted).

Knowledge regarding K3 in the relation with incident accident work on rattan production by workers Still Not yet applied optimally with results (74.7%), as seen from habit workers who often ignore safety moment do activity work. Proven in workers with experience Work in period time more from 10 years However Not yet get education or adequate training related safety and health work, so that understanding they about K3 with incident accident Work still very minimal.

According to (Lestari and Warseno, 2021), Worker knowledgeable good will active look for information, on the other hand worker knowledgeable not enough only depend on source information that has not been Of course accurate, so that not enough understand benefits and use of PPE as well countermeasures accident Work become not optimal.

Proposals that can be given reduce accident work caused by a lack of knowledge of workers in rattan UMKM, companies need give education to worker through training periodic, socialization, and guidance easy work understood, in line with proposal (Alamsyah, Ningrat and

Hilman, 2024) which emphasizes importance company give attention special to the workforce Work related with the procedure implementation of K3 periodically and routinely.

### Cross Tabulation of Attitudes with Incident Accident Work

Table 2 Cross Tabulation of Attitudes with Incident Accident Work at UMKM Rattan Gresik Regency in 2024

Attitude	Incident Accident Work				Total	
	Happen Accident		There is no Accident			
	f	%	f	%	f	%
Negative	13	91.1	0	0	13	81.1
Positive	13	8.9	1	10	32	19.9
<b>Total</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>10</b>
<b>p-value</b>	<b>0,000</b>					

Data that has been presented in table 2 explains that results tabulation cross between attitude with incident accident Work found that part big worker with negative attitudes and experiences accident work (91.1%), things This due to lack of attention worker to condition environment work and neglect to potential danger, compared with workers who do not experience accident work (0%). Workers with positive attitude part big No experience accident work (100%) compared with workers who experience accident work (8.9%).

Result value significance obtained through statistical testing *Fisher's exact test* is 0.000 (<0.05), meaning there is significant relationship between attitude with incident accident work at the Rattan UMKM in Gresik Regency (H0 is rejected and H1 is accepted).

Worker with attitude negative own trend more bigs caught incident dangerous (accident) work, in contrast with workers

who show attitude positive (good). Research (Rahmatunnazhifah, Sani and Sulolipu, 2023), support matter the with state worker with attitude negative Because ignore directions supervisor and belittle use of PPE such as No wearing a mask and sarong hand moment Work.

**Compliance Cross Tabulation with Incident Accident Work**

Table 3 Compliance Cross Tabulation with Incident Accident Work at UMKM Rattan Gresik Regency in 2024

Compliance	Incident Accident Work				Total	
	Happen Accident		There is no Accident			
	f	%	f	%	f	%
Not good	11	78	5	26	12	73
Good	5	.8	1	74	45	27
<b>Total</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>10</b>
<i>p-value</i>	<b>0,000</b>					

Data that has been presented in table 3 explains that results tabulation cross between compliance with incident accident Work found that part big worker with lack of compliance good and experienced accident work (78.8%) compared to with workers who do not experience accident work (26%). Workers with good compliance part big No experience accident work (74%) compared to with workers who experience accident work (21.2%). Result value significance obtained through statistical testing *Fisher's exact test* is 0.000 (<0.05), meaning there is significant relationship between compliance with incident accident work at the Rattan UMKM in Gresik Regency (H0 is rejected and H1 is accepted).

Compliance to regulation safety Work is one of element main in prevent the occurrence accident work. Workers who have compliance Good to regulation possibility small experience accident

work. Risk existence incident endanger like accident Work can minimized through the rules that workers obey (Arapi *et al.*, 2023).

Proposal repair in frame notice workers compliance is with do evaluation about rules and procedures work that has been done determined in each company. The purpose of this is to evaluation is one of them is increase workers awareness will importance safety work. Research (Firmanda *et al.*, 2022) also provide suggestions for the parts management company do socialization periodic related with policy or K3 regulations for use minimize existence incident dangerous (accident) Work).

**Cross Tabulation of PPE Use with Incident Accident Work**

Table 4 Cross Tabulation of PPE Use with Incident Accident Work at UMKM Rattan Gresik Regency in 2024

PPE	Incident Accident Work				Total	
	Happen Accident		There is no Accident			
	f	%	f	%	f	%
Negative	11	76.	8	42.	12	73.
Positive	2	7	1	58.	45	27.
<b>Total</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>10</b>
<i>p-value</i>	<b>0.004</b>					

Data that has been presented in table 4 explains that results tabulation cross between use of PPE with incident accident Work found that part big worker with negative use of PPE and experiencing accident work (76.7%) compared to with workers who do not experience accident work (42%). Workers with positive use of PPE part big No experience accident work (58%) compared to with workers who experience accident work (23.3%). Result value significance obtained through statistical testing *Chi-square*

namely 0.004 (<0.05), meaning there is significant relationship between use of PPE with incident accident work at the Rattan UMKM in Gresik Regency (H0 is rejected and H1 is accepted).

Workers who are without notice use of appropriate PPE risk type work being carried out will trigger existence dangerous event like accident wor. Lack of workers responsible answer will safety self and environment proven with No complete use PPE when work. Other causes that trigger existence accident on the spot Work that is workers who use PPE with conditions that have already occurred No worthy, so that prone to exposed dangerous situation (Sulistyowati & Sukwika, 2022).

Proposal repair in frame notice use of PPE by workers is with monitoring efforts results recap violation workers who violate use of PPE in place work and give sanctions or fine. The purpose of this is to *monitoring* is one of them is increase workers awareness will importance safety self and environment work. Research (Runtuwarow et al., 2020) also provide suggestions for the partieses management company do update periodic related provision of new PPE for workers with objective minimize incident accident Work because of using the PPE that has been provided No worthy.

### Connection Behavior Occupational Health and Safety with Incident Accident Work at Gresik Rattan UMKM in 2024

Table 5 Result of Analysis of Independent Variables

Independent Variabel	p-value	OR	95% (CI)
Knowledge	0,008	6,635	0,809
Attitudes	0,000	3,22	0,000
Compliance	0,000	13,993	1,678
PPE	0,004	0,454	0,454

The dominant factor influencing work accidents is the factor of compliance with work instructions with a p-value of 0.000 and OR 13.993 > 1, so workers' compliance with work instructions can affect the occurrence of work accidents.

Based on the results obtained majority Respondent own poor K3 behavior good. This is found in the results compliance and ongoing use of PPE in category negative or not enough good, while knowledge and attitudes of workers some bears already including in category positive or good.

Good level of knowledge continuous with positive things, then support worker behave profitable for self Alone as well as environment Work Because feel awake. Worker with increasing knowledge good too of course contribute For Work in accordance procedure so that provide a sense of comfort various party (Shari, 2021). Worker with distant knowledge from negative will respond in a way appropriate existence various dangers in the environment around place work. According to book Sinambela, behavior based on knowledge, awareness, and attitude positive will last long, because will become habit in operate task as well as capable act in a way appropriate in environment Work (Putri and Etikariena, 2022). Workers who have knowledge limited regarding K3 tends to Work with rush and focus on completion work in a way fast with objective save time take a break, though matter the can increase risk accident Work (Saraswaty, Demiyati and Hakim, 2021).

Attitudes that include response closed somebody to stimulus or object specific and involves factor opinion as well as emotions (such as happy, no happy, agree, disagree agree, good and not good), which can influence level safety work. Workers who have negative attitude tends to own greater risk big for experience accident Work Because lack of caution to potential danger. (Irawanti,

Novianus and Setyawan, 2021) *Loss Theory Cause Model* mention that attitude be one of reason existence incident accident work. Attitude negative or lack of attention to safety can increase risk accident Work consequence worker No follow procedures that have been set or No alert to potential dangers in the environment work. Attitude somebody can influence awareness in behave K3. Workers who behave positive or be careful in Work will save self from various type dangers in the environment place Work (Ruskartina *et al.*, 2023).

Protective equipment self (APD) becomes material protection provided by the company or provider service for protect his job from potential dangers that can happen during work, PPE is designed for prevent injuries to workers, both from factor physical, chemical, biological, and danger environment work (Fajriah, Herlina and Sari, 2024). Selecting the right PPE is very important for protect worker from specific risks, such as protection to exposure material chemistry, noise, temperature extreme, or accident mechanical for ensure K3 remains maintained and implemented with good. Good use of PPE related with compliance worker in behave safe to potential dangers in the environment work. Research (Rosanti and Inayah, 2024) support statement the with conclusion that factors that give the highest influence on the existence of incident dangerous (accident) in place Work is workers' compliance with instructions work that has been done set.

According to (Pangemanan, 2024), state that although characteristics individual worker impact to accident work, but there are factor others that can or each other influence incident accident work. Behavior be one of reason the occurrence accident work, such as attitude that is not be careful, work in a way in a hurry, and ignore K3 (Akbar *et al.*, 2022) procedures. Research (Priyohadi and Achmadiansyah, 2021)

state factor behavior be one of reason the occurrence accident Work but No become reason main the occurrence accident work.

Suggestions regarding repair for reduce incident accident Work with build good K3 culture in place Work with conducting the BBS (*Behavior Based Safety*) program to prevent the occurrence behavior that can cause accident work. This program made for reduce number accident work and improve K3 culture towards workers to be more aware and more alert with potential risk accident work. Other factors that can cause dangerous events (work accidents) are job training and roles and responsibilities.

#### 4. CONCLUSION

1. Knowledge possessed workers in Rattan UMKM, some big is at in category good and bad experience accident work (74.7%).
2. Attitudes that are owned workers in Rattan UMKM, some big own attitude positive and negative experience accident work (100%).
3. Compliance owned workers in Rattan UMKM, some big own compliance not enough good and experienced accident work (78.8%).
4. Worker with use of PPE in Rattan UMKM, some big is at in category negative and experiencing accident work (76.7%).
5. There is a relationship significant between knowledge with incident accident work worth *sign* ( $p = 0.008$ ), attitude and compliance ( $p = 0.000$ ), as well as use of PPE with incident accident work ( $p = 0.004$ ), with information that all variable produce value  $<0.05$ .
6. The dominant factor influencing work accidents is the factor of compliance with work instructions with a p-value of 0.000 and OR 13.993  $> 1$ , so workers' compliance

with work instructions can affect the occurrence of work accidents.

## 5. RECOMMENDATION

1. Give regular training on procedure safety work.
2. Ensure PPE is available for every workers, worthy use, and workers trained in its use.

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