International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Contemporary Social Issues In Industry-Society Relations: Environmental Health Risks In The Wood Processing Industry

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Abstract

This study aims to analyze environmental health risks—viewed as a contemporary social issue—within the context of the relationship between the industry and the community surrounding the PD X wood processing plant in Tasikmalaya City. A descriptive qualitative approach was employed, involving six informants: three workers and three local residents. Data were collected through direct observation and interviews, then analyzed descriptively through data organization, data presentation, and the drawing and verification of conclusions. The findings indicate that production activities pose potential environmental risks, including wood dust, machinery noise, vibration, uneven lighting, and inadequate air circulation. Experiences regarding these risks differ between workers and the community; workers tend to view the dust as part of their daily work routine, whereas a resident reported dust drifting onto the street and causing skin irritation. Dust control measures and the use of personal protective equipment remain suboptimal. This study underscores the importance of integrated risk management that takes into account worker safety, environmental conditions, and the experiences of the surrounding community.

Keywords: contemporary social issues, environmental risks, wood processing industry, workers, communities

INTRODUCTION

Industrial development is a crucial aspect of the socio-economic dynamics of a community, as it creates jobs, supports production activities, and generates livelihood opportunities. However, industrial activities can also give rise to social and environmental issues when production processes result in exposures that affect the health, well-being, and quality of life of the local population. Consequently, environmental health risks are linked not only to the physical characteristics of pollution but also to how these risks are

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experienced, perceived, and responded to by different social groups. The wood processing industry serves as a relevant context here, as cutting, sawing, and planing processes generate dust that can potentially impact both worker health and environmental quality. This issue brings together economic interests, health protection concerns, and the social dynamics between the industry and the surrounding community.

Previous research has demonstrated the health risks associated with wood dust exposure. In a study of wood processing workers in Mozambique, Chamba et al., (2023) found that dust exposure is influenced by job type, machinery use, wood species, and workplace building characteristics. These findings indicate that exposure risks are linked to production conditions and practices. Through a systematic review and meta-analysis, Curiel-Garcia et al., (2024) also examined the relationship between occupational wood dust exposure and the risk of small-cell lung cancer. While such studies enhance our understanding of the health implications of wood dust exposure, attention to the social experiences of workers and surrounding communities remains necessary to understand how environmental risks manifest in daily life.

From the perspective of environmental sociology, environmental health risks are linked to social structures that influence the distribution of exposure, access to protection, and the ability of communities to cope with the impacts of industrial activities. Di Fonzo et al., (2022) through a systematic review of social inequalities in health hazards resulting from industrial contamination, highlighted the importance of considering the relationship between socioeconomic conditions and environmental risks. This perspective is relevant because industry can provide economic benefits while simultaneously posing potential environmental burdens. However, the distribution of benefits and risks cannot be assumed to be inherently unequal without empirical evidence. Therefore, sociological analysis must take into account the experiences of the parties involved, social interactions, and how they understand and respond to environmental risks.

In addition to risk distribution, public perception and communication between industry and the surrounding community are important aspects in understanding contemporary social issues. Brown (2022) examined the relationship between industrial pollution and social trust and citizen participation. The study shows that pollution issues have the potential to affect people's social lives, not just their physical health. Therefore, the public's response to environmental risks must be understood through their daily experiences, available resources, social relationships, and opportunities to voice their concerns to industry stakeholders. This approach helps explain that environmental risks have a social dimension that must be examined within the context of the communities experiencing them.

In the context of the wood processing industry, dust, noise, vibration, and working conditions can be part of the experience of both workers and nearby residents. However,

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the presence of potential physical hazards does not automatically prove the existence of social conflict, inequality, or health problems among the entire community. Rather, differences in experiences and perceptions need to be examined to understand how risks are interpreted by groups directly involved in production and those living near industrial sites. Thus, environmental health risks can be studied as a contemporary social issue that intersects economic activity, environmental conditions, and the social experiences of the community.

This study focuses on the PD X wood processing plant located at Jalan RE Martadinata No. 239, Tasikmalaya City. The study employed a descriptive qualitative approach involving six informants—three workers and three local residents—through observation and interviews. The aspects examined included dust, noise, vibration, lighting, ventilation, temperature, and the use of personal protective equipment. Residents' experiences with dust and complaints such as itching were also part of the research context, with a distinction made between complaints reported by informants and health problems that have been clinically proven.

Although research on wood dust exposure and industrial environmental inequities has advanced, there is still room to deepen our understanding of social experiences and industry–community relations at the local level. Occupational exposure studies generally describe sources and risk factors, while studies on environmental inequities highlight the distribution of risk within a socioeconomic context. This study bridges these two perspectives by examining production conditions, workers' experiences, community perceptions, and social relations surrounding the wood processing industry. Its novelty lies in this analytical focus within a local context, rather than in the claim that this issue has never been studied before.

Based on the above discussion, this study aims to identify environmental conditions that have the potential to pose health risks, describe the experiences and perceptions of workers and the surrounding community, and analyze environmental health risks as a contemporary social issue in the relationship between industry and society through the lens of environmental sociology. This study is expected to expand sociological research on the relationship between economic activities, environmental risks, and the social experiences of communities, as well as to provide insights for risk management that is more responsive to the needs of workers and nearby residents.

RESEARCH METHODOLOGY

This article intends

This study employs a qualitative approach with a descriptive design to analyze environmental health risks as a contemporary social issue in the relationship between industry and the community at the PD X wood processing plant located at Jalan RE

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Martadinata No. 239, Tasikmalaya City. The qualitative approach was used to understand experiences, perceptions, and social contexts based on information obtained from informants and field observations (Creswell., 2017; Yin, 2018). There were six research informants, consisting of three factory workers and three residents living near the factory site. Informants were selected purposefully based on their involvement in or proximity to wood processing activities. Data were collected through direct observation and interviews to identify production environment conditions, including dust, noise, vibration, lighting, ventilation, temperature, and the use of personal protective equipment. Interviews were used to explore the informants' experiences and perceptions regarding environmental conditions and their potential impact on daily life. The data were analyzed descriptively through data organization and condensation, data presentation, and the drawing and verification of conclusions (Miles et al., 2014). The analysis also aimed to identify patterns and themes related to environmental conditions, workers' experiences, community perceptions, and industry–community relations. The validity of the interpretations was strengthened by comparing information from interviews with both groups of informants with the results of observations. The analysis process needed to be systematically documented to ensure the traceability and credibility of the interpretations (Sugiyono, 2022; Upe, 2022). Health complaints reported by informants were treated as subjective experiences, not as medical diagnoses without clinical examination.

Research Results and Discussion

Characteristics of Production Activities and Potential Environmental Risks

The PD X wood processing plant, located at 239 RE Martadinata Street, Tasikmalaya City, is a business that manufactures various wood-based products, including door and window frames. The production process includes cutting, planing, shaping, assembly, sanding, and finishing. Based on field observations, these activities pose a number of potential environmental risks, particularly wood dust, machine noise, vibrations, uneven lighting, and inadequate air circulation. These conditions demonstrate that industrial activities not only produce economic goods but also have the potential to cause health and comfort issues in the workplace and surrounding residential areas.

The observations indicate that wood dust is generated during the cutting, planing, and surface-smoothing processes. Some of the dust is visible throughout the production area and the surrounding environment, which aligns with the statement by (Irhamna, 2025). The use of machinery also generates noise that can potentially disrupt workers' concentration and comfort, while machine vibrations are a factor that must be considered in workplace management. Additionally, lighting in some areas of the production space is uneven because it still relies on natural light. Poor air circulation makes the room feel

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hot and stuffy. These findings are consistent with the study by Owoyemi et al., (2016), which discusses noise as one of the issues in the wood processing industry.

The interview results also revealed differences in experience between workers and the surrounding community. Workers tend to view wood dust as part of their daily routine and therefore do not voice significant complaints about production waste. In contrast, a resident who has lived near the industrial area since 1990 complained that dust blows onto the street and causes itchy skin. Two other residents did not report any specific disturbances. The industry has enclosed part of the cutting or sanding area with sheet metal, but dust is still found along the roadside. Thus, the results of the observations and interviews indicate that the environmental impacts of the industry are perceived differently by those directly involved in production and the community living nearby.

Differences in Workers' Experiences with Environmental Risks

The interview results show that workers have different experiences dealing with workplace environmental conditions. Two informants, both 29 years old, have been working for 12 years and work eight hours a day with a one-hour break. Both wear masks to protect themselves from wood chips, but this protection does not cover all potential occupational hazards, particularly noise and machine vibrations. One informant stated that he had become accustomed to the noise and working conditions after years of working in the industry. Nevertheless, he acknowledged that the machine vibrations were quite bothersome. Meanwhile, the third informant, a 60-year-old who has worked for 25 years, uses a mask and gloves. He believes that using this equipment helps speed up the work and conserve energy, even though the risks posed by the machinery remain. These experiences show that workers assess working conditions not only based on potential hazards but also based on convenience and habits in carrying out their daily tasks.

These findings should be interpreted critically, as being accustomed to facing risks does not mean workers are protected from their effects. Supapvanich et al., (2024) through a study of rubberwood factory workers, found issues related to respiratory symptoms and differences in dust exposure between production areas and office spaces. The study emphasizes the importance of using appropriate personal protective equipment and implementing dust control measures in the workplace. From a safety behavior perspective, Alim et al., (2024) examined the use of personal protective equipment among workers at PT Maruki International Indonesia in Makassar.

The results indicate that perceptions, motivation, and supervision are associated with the use of personal protective equipment. These findings are relevant for understanding that the use of workplace protection depends not only on the availability of equipment but also on workers' attitudes and organizational supervision practices.

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Thus, from a sociological perspective, work experiences and production routines can shape how workers understand and tolerate everyday risks. However, since the PD X study involved only three worker informants and did not measure exposure technically, these findings are best understood as a depiction of subjective experiences, rather than evidence that long tenure causes workers to disregard risks.

Public Perceptions of the Environmental Impact of Industry

The interview results show that workers have different experiences when it comes to working conditions. Two informants, both 29 years old, have been working for 12 years, with an eight-hour workday and a one-hour break. Both wear masks to protect themselves from dust and wood chips, but this protection does not cover all potential hazards, particularly noise and machine vibrations. Wearing a mask also does not automatically eliminate the risk of exposure if dust in the work environment has not been adequately controlled. One informant stated that he had grown accustomed to the noise and working conditions after years of working in the industry. However, he still acknowledged that machine vibrations were quite bothersome. Meanwhile, the third informant, a 60-year-old who has worked for 25 years, uses a mask and gloves. In his experience, using protective equipment helps speed up the work and conserve energy, even though risks from the machines remain. These differences indicate that extensive work experience can coexist with varying perceptions of risk and protection strategies.

These findings should be interpreted with caution. A study by Abateneh et al., (2024) on wood processing workers in Bahir Dar, Ethiopia, found that chronic respiratory symptoms were more prevalent among exposed workers than among unexposed workers. The study also highlighted the importance of occupational safety training and the use of respiratory protection. Furthermore, a systematic review published in the journal by Priolo et al., (2025) showed that risk perception is generally associated with workers' safety behaviors, although this relationship is not always consistent. This means that how workers perceive hazards must be considered alongside individual factors and the organizational environment.

In the context of PD X, the practice of working amid noise and dust cannot be used as an indicator that working conditions are safe. Research by Simpson et al. (2024) on the control of wood dust exposure in the British manufacturing industry underscores the importance of exposure assessments and the implementation of engineering controls in the workplace. Therefore, worker protection must be achieved through a combination of dust source control, adequate ventilation, the use of appropriate personal protective equipment, and consistent safety monitoring. From a sociological perspective, work experiences and production routines can shape how workers perceive and tolerate everyday risks. However, since this study involved only three worker informants and was

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not accompanied by exposure measurements or health examinations, the findings reflect the workers' subjective experiences rather than evidence that long tenure leads to a decreased sensitivity to hazards.

Risk Management and Worker Protection

The research findings indicate that several aspects of workplace safety at PD X's wood processing industry have been addressed, including the adoption of more ergonomic work postures, training on equipment use, and ensuring that equipment is appropriate for workers' capabilities. According to the research report, workers have received training before using production equipment, including how to operate and maintain machines. These practices demonstrate efforts to support workplace safety and efficiency. However, these efforts have not yet been fully accompanied by the consistent use of personal protective equipment.

Observations noted that workers were not seen wearing a full set of personal protective equipment (PPE), including hearing protection, safety glasses, gloves, masks, and protective footwear. These findings should be interpreted in conjunction with interview results, which indicated that some informants wore masks, while others mentioned wearing both masks and gloves. These discrepancies indicate that PPE usage practices vary among workers or depending on the observation situation. Therefore, assessing compliance should not be based solely on the availability of PPE but must also consider consistency of use, the appropriateness of the type of protection relative to the hazards, comfort, and workplace supervision.

A study by Santos et al., (2025) on the control of wood dust exposure in the manufacturing industry in the United Kingdom found that the management and use of respiratory protective equipment still face various challenges. The study emphasized the need to improve local exhaust ventilation systems, particularly during sanding processes and when using hand tools. These findings are relevant to PD X because dust is still present in production areas and the surrounding environment. Meanwhile, the systematic review by Santos et al., (2025) indicates that safety training and supervision are key elements in promoting the use of PPE and reducing the risk of workplace injuries.

Dust management at PD X has also not fully resolved the issue of particle dispersion into the surrounding community. While parts of the cutting and grinding areas have been enclosed with sheet metal, dust is still found along the roadside. This situation demonstrates that risk control must address dust sources, air circulation, production area cleanliness, and potential exposure for nearby residents. Thus, workplace safety should not be viewed solely as the individual responsibility of workers, but also as the responsibility of industrial management toward its social environment. In the context of contemporary social issues, these findings underscore the relationship between

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economic activity, worker protection, and the community's quality of life. Strengthening risk control requires a combination of technical improvements, the use of appropriate PPE, ongoing training, monitoring, and attention to complaints from the surrounding community.

Based on the results of observations and interviews, this study identifies several key findings regarding environmental health risks in the wood processing industry at PD X. These findings include working conditions, worker protection, community perceptions, and the management of production impacts. A summary of the empirical findings and sociological interpretations is presented in the following table.

No	Aspects examined	Empirical findings	Interpretation of Findings
1	Wood dust	Dust is generated during cutting, planing, and sanding processes and is found in production areas and along roadsides.	Production activities have the potential to pose environmental risks that extend beyond the workplace and affect the well-being of the surrounding community.
2	Noise and Vibration	The production machinery is noisy; one worker said he had gotten used to the noise, but still found the vibrations bothersome.	Work experience influences how workers perceive their work environment, but established practices do not prove that risks have been controlled.
3	Lighting and ventilation	The lighting in some parts of the production area is uneven, while poor air circulation makes the room feel hot and stuffy.	Workplace conditions are an important part of managing safety, comfort, and the quality of production activities.
4	Use of personal protective equipment (PPE)	Observations show that PPE is not yet being used comprehensively, while interviews indicate variations in the use of masks and gloves.	Worker protection cannot be assessed solely based on the availability of PPE, but also on the consistency of its use and supervision.
5	Workers' and the Public's Perceptions	Workers tend to view dust as part of their daily routine. One resident complained about dust	Differences in experience show that environmental risks are perceived

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		on the street and itchy skin, while two other residents did not report any specific problems.	differently depending on one's experience and proximity to industrial activities.
6	Environmental Control	Some of the cutting or grinding areas have been covered with sheet metal, but dust can still be found along the roadside.	The control measures that have been implemented have not fully addressed the spread of dust, so attention must be paid to the sources of emissions and the surrounding environment.
7	Relations Between Industry and Society	Industrial activities contribute to the economy through production and employment, but they also have the potential to cause environmental disturbances for nearby residents.	The relationship between industry and the community requires risk management that takes into account sustainable production, worker protection, and the well-being of residents.

Overall, the table shows that environmental health risks at PD X's wood processing plant are not only related to the physical conditions of the production site but also to workers' experiences and the perceptions of the surrounding community. The study's main findings center on differences in experiences regarding dust, suboptimal environmental controls, and inconsistent use of PPE. From an environmental sociology perspective, these conditions underscore the importance of understanding industrial activities as part of social relations that involve the interests of production, workplace safety, and community well-being. However, since this study involved only six informants and did not include exposure measurements or clinical health examinations, the results describe the informants' conditions and experiences within a local context, rather than serving as a measure of pollution levels or evidence of a cause-and-effect relationship with disease.

CONCLUSION

This study shows that environmental health risks at the PD X wood processing plant in the city of Tasikmalaya are an issue that links economic activity, worker safety, and the well-being of the surrounding community. The results of the observations identified potential risks in the form of wood dust, machine noise, vibrations, uneven lighting, and inadequate air circulation. Interviews revealed differing experiences

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between workers, who tend to view dust as part of their daily work routine, and residents who complain about dust spreading onto the streets and causing itchy skin. Control measures, such as partially enclosing production areas, have been implemented, but dust is still present in the surrounding environment. The use of personal protective equipment also remains inconsistent. From an environmental sociology perspective, these findings underscore that industrial risk management must take into account technical conditions, workers' experiences, and community perceptions. Improved ventilation, dust control, the use of personal protective equipment, and communication with residents are necessary to support safer work environments and residential areas. These findings are contextual and do not yet prove clinical health impacts.

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