

Employee's Perceptions on Occupational Safety and Health Management System (OSHMS) in a Wood Based Product Manufacturing Company

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Abstract: Manufacturing industry is often associated with a reputation for being among the most hazardous workplace and high occurrence rate of occupational accidents. One of the factors encountered to influence safety compliance was employee perception on workplace safety. Hence, this study sought to provide an empirical evidence on the perceived employee safety awareness and satisfaction towards OSHMS in a selected chipboards manufacturing company. This study employed a quantitative research method. A set of survey questionnaires was distributed to 60 employees. The main findings showed that most employees portrayed positive perceptions towards OSHMS in the company. By examining how employees perceive OSHMS in the company, the study's findings contributed to significant practical implications for manufacturing companies which are looking to improve every aspect of OSHMS implementation.

Keywords: Employee's Perceptions, Occupational Safety and Health Management System (OSHMS), Wood Based Product Manufacturing Company

1. Introduction

Occupational accidents have become a major concern in industrial sector. Globally, there are approximately 340 million non-fatal workplace accidents worldwide each year [1]. Workplace hazards and accidents are among the most bothersome employment issues in many manufacturing companies. In Malaysia, there are more than 3,000 work-related accidents reported by the Department of

Occupational Safety and Health (DOSH) annually [2]. According to occupational accident statistics issued by DOSH [2], the accident rate for manufacturing sector with 4269 cases remained the most severe recorded accident in the workplace in Malaysia from January to December 2021.

One of an effective way to prevent occupational accident and harm within the industry is through the adoption of Occupational Safety and Health Management Systems (OSHMS) [3]. Previous scholars had reported that OSHMS not only provide security to the workers, but also resulted in a reduced accident rate and improved job satisfaction [4][5]. Implementing the OSH programs effectively such as through OSHMS could promote and encourage employees to comply with safety practices, and work in a safe and healthy way at workplace in manufacturing industry [3].

Apparently, manufacturing companies at large have gained reputation for being among the most hazardous industry and high occurrence rate of occupational accidents [2][6]. In fact, there were numerous studies about workplace safety in manufacturing industry in Malaysia [3][7][8]. However, there was a scarcity of research in wood based manufacturing companies. This study embarked on the following objectives: to identify the level of awareness of employees on OSHMS practices in a wood based product manufacturing company; to investigate the involvement of employees in the activity organized by the OSH committee; and to examine the perceived understanding and satisfaction of employees as well as their suggestion for improvement on the implementation of OSHMS.

This study provided contribution to the development of theory and implication to industry. The theory development in this study focused on employee's perception and satisfaction towards the effectiveness of OSHMS implementation. Findings from this study also portrayed significant practical implications for the management team and industrial practitioners in manufacturing companies to make improvements on several aspects of OSHMS implementation, especially in terms of employee's safety perception and safety satisfaction, which could affected employee's job performance.

1.1 Occupational accidents in manufacturing industry

Occupational accidents and industrial diseases are the consequences of workplace exposure to hazards. The ILO estimated that about 2.3 million people worldwide died each year due to work accidents or illnesses. This number is equivalent to more than 6000 deaths every day. There were approximately 340 million occupational accidents and 160 million victims of work-related diseases worldwide each year. In addition to this staggering number, 313 million accidents occurred at work every year, leading to long-term absences. The cost of work-related accidents or diseases is very high and may have several serious direct and indirect impacts and consequences on the workers, their families' lives, and the company's financial status [1].

In Malaysia, the total number of accidents reported had significantly increased each year. As of December 2021, DOSH had investigated 6686 cases of occupational accidents. The top industry causing accidents was manufacturing with 4269 cases [2].

1.2 Occupational safety and health management system (OSHMS)

OSHMS is defined as the component that has interrelationships in order to establish an OSH policy and objective, as well as to achieve the outlined goals. OSHMS creates a framework to help enterprises manage their OSH responsibilities. It is also a mechanism that is intended to help OSH improve its performance over time [2]. The ISO 45001 defined OSHMS as management system or part of a management system used to achieve the OSH policy [9]. The management system of ISO 45001 had outlined the elements involved in OSHMS as shown in Table 1 below. These elements are the important components that must be considered by any organization wishing to develop an OSHMS.

Table 1: Elements in OSHMS

Main elements	Sub-elements
Context of the organization	<ul style="list-style-type: none"> ▪ Understanding the organization and its context ▪ Understanding the needs and expectations of workers and other interested parties ▪ Determining the scope of the OH&S management system ▪ OH&S management system
Leadership and worker participation	<ul style="list-style-type: none"> ▪ Leadership and commitment ▪ OH&S policy ▪ Organizational roles, responsibilities, and authorities ▪ Consultation and participation of workers
Planning	<ul style="list-style-type: none"> ▪ Actions to address risks and opportunities ▪ OH&S objectives and planning to achieve them
Support	<ul style="list-style-type: none"> ▪ Resources ▪ Competence ▪ Awareness ▪ Communication ▪ Documented information
Operation	<ul style="list-style-type: none"> ▪ Operational planning and control ▪ Emergency preparedness and response
Performance evaluation	<ul style="list-style-type: none"> ▪ Monitoring, measurement, analysis, and performance evaluation ▪ Internal audit ▪ Management review
Improvement	<ul style="list-style-type: none"> ▪ Incident, nonconformity, and corrective action ▪ Continual improvement

Manufacturing companies in Malaysia are urged to comply with international safety standard such as ISO 45001 (formerly known as OHSAS 18001) to manage the rising number of accidents. Malaysian government had outlined the Occupational Safety & Health Master Plan 2020 with the aim to have more organizations adopted OSHMS in their system. The implementation of OSHMS plays an essential role in the growth of manufacturing enterprises, and many organizations have agreed that implementing an effective safety management system may enhance safety performance. The implementation of OSHMS plays an essential role in the growth of manufacturing enterprises, and many organizations had agreed that implementing an effective safety management system may enhance safety performance.

2. Methods

2.1 Research design

This study was conducted in a wood based product manufacturing company located in Kuala Lipis, Pahang. The company has certification of ISO 45001: 2018 Occupational Health & Safety Management Systems (OHSMS), ISO 9001: 2015 Quality Management Systems (QMS), and ISO 14001: 2015 Environmental Management Systems (EMS). In this company, the conduction of safety induction session to all new employees often emphasized mainly on the obligation to wear personal protective equipment (PPE), participation in fire drills, involvement in general cleaning, and daily health checkups. Nevertheless, the production process of chipboard and particleboard in this plant involves the use of heavy machinery and dealing with physical and chemicals hazards, which led to the potential occurrence of accidents and injuries.

The research began with the review of literature through thoroughly searching, selecting, reading, and reviewing relevant articles, journal papers of previous works and documentation from a wood based manufacturing company. The second stage focused on determining the research gap and problem, and the formulation of objectives. The third stage emphasized on the development of research instrument. The activity of data collection under laid the fourth stage of this research study. The method of data collection involved the use of survey questionnaire. The next stage was data analysis, which comprised the analysis of respondent demography and descriptive information. The final stage summarized the outcomes of the research using discussion, conclusion, and recommendation for further works. Figure 1 depicts the process flow chart of the overall research work.

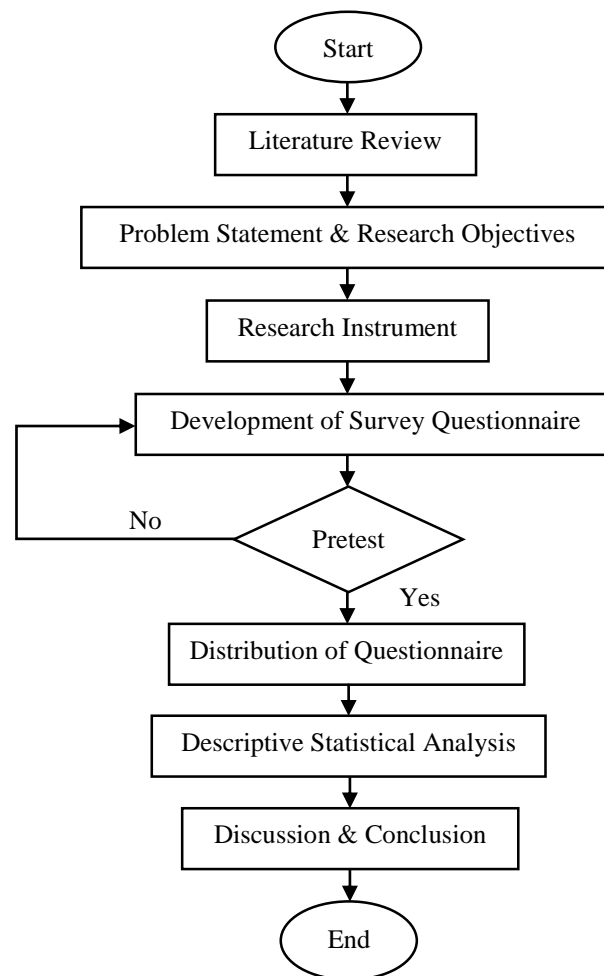


Figure 1: Research work process flow chart

2.2 Quantitative data collection method

This study employed survey questionnaire as main research instrument to collect primary data from the respondents and assessed the perception and attitude of employees towards OSHMS practices within the company. The survey questionnaire was distributed to the different levels of 60 employees including administrative staff as well as workers in the worksite.

The questions in the survey questionnaire were divided into four sections. The first section (Section A: Respondent Information) started with the demographics of respondents with the aim to gain more insights into the employee's background and related information. The second section (Section B: Employees Awareness) was used to evaluate employees awareness on OSHMS practices within the company. The third section (Section C: Employees Participation) dealt with employees participation in any activity organized by the OSH or HSC committee. The final section (Section D: Employees View

and Perception) of the questionnaires was commenced to gain a better understanding of the views and satisfaction of employees, as well as individual recommendations to further improve on OSHMS. In this study, a pretest is the final stage of question development for survey questionnaire, which involved in a small pilot study through respondent debriefing process to see how well it performed.

2.3 Data analysis method

There were two analyses performed in this study; respondent demographic analysis and analysis of employee awareness, involvement, and perception. The analysis of Section A (Respondent Information) focused on the background of respondents from survey questionnaire. As for other sections (from Section B to D) in the survey questionnaire, nominal scale was also involved. The data was measured using frequency and percentage.

3. Results and Discussion

3.1 Respondents demographic

Figure 2 shows the two categories of gender of the respondents. These respondents represented the two categories of gender where male was the majority of the respondents with 36 respondents (60%) while female only 24 respondents (40%).

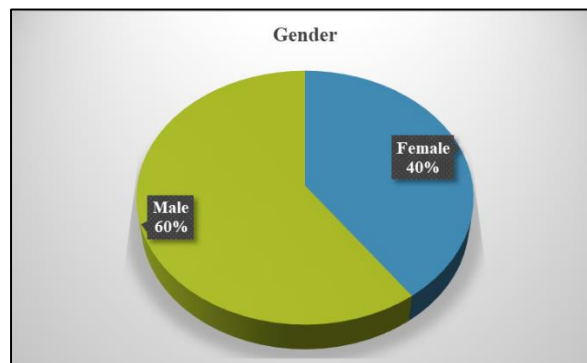


Figure 2: Gender

Meanwhile, Figure 3 shows that these respondents represented the three categories of the highest education qualification with 26.67% (16 respondents) had bachelor's degree, 28.33% (17 respondents) had diploma, and 45% (27 respondents) had other highest educational qualification. It was evident that the majority of the respondents have others as their highest education level meanwhile the least frequency of highest education qualification was bachelor's degree.

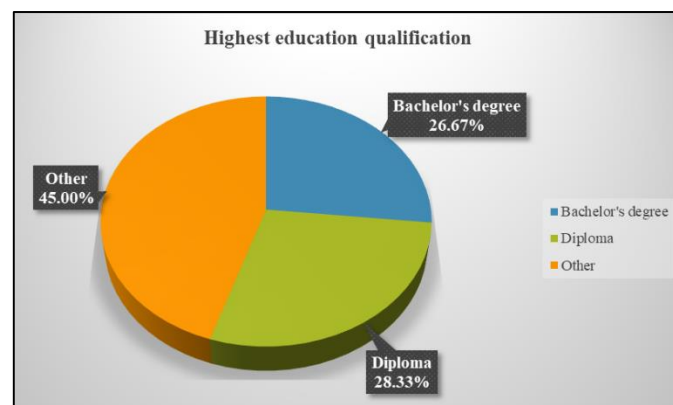


Figure 3: Highest education qualification

Based on Figure 4, the majority of the respondent’s job position were machine operators and technicians with 8 respondents each, respectively. Other respondent’s job position was in descending manner as follows with clerk (6 respondents), practical & intern student (5 respondents), EHS officer (4 respondents), supervisor (4 respondents), cleaner (3 respondents), assistant (3 respondents), senior supervisor (2 respondents), and store hand (2 respondents). The least job positions of the respondents with only 1 respondent for the position were assistant production, assistant manager, assistant R&D, canteen operator, engineer, Executive, WID, HR assistant, Mechanical engineer, Officer, QAQC officer, QAQC executive, QC inspector, R&D supervisor, Mechanical senior executive, Senior supervisor, Store hand, Supervisor, Technician, Wireman.

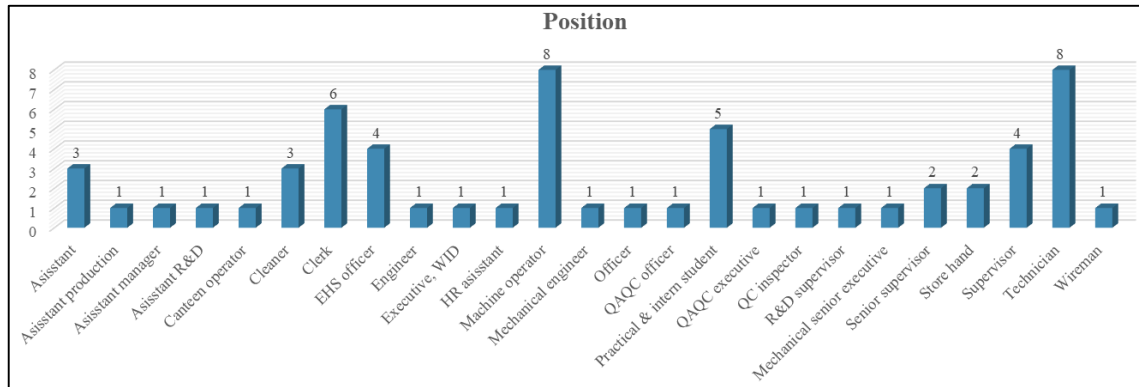


Figure 4: Job position of respondents

Figure 5 shows the majority respondent’s department was from production department with 28.33% (17 respondents). Other respondent’s department were in descending manner as follows with engineering (20%, 17 respondents), EHS (13.33%, 8 respondents), QAQC (10%, 6 respondents), WID (6.67%, 4 respondents), HR (6.67%, 4 respondents), housekeeping (5%, 3 respondents), and R&D (3.33%, 2 respondents). The least respondent’s department with 1.67% (1 respondent) were biomass, finance, store, and workshop.

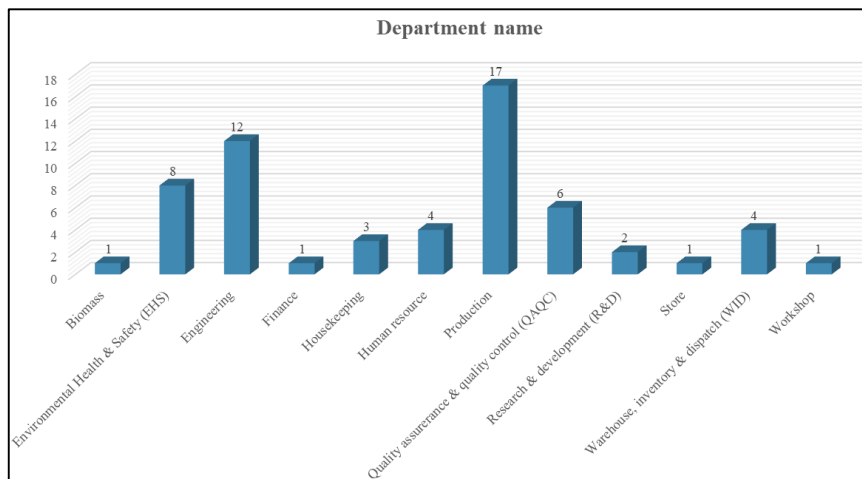


Figure 5: Department name of respondents

Based on Figure 6, these respondents represented the four categories of the work experience with 36.67% in (22 respondents) had 1 - 5 years, 21.67% (13 respondents) had 6 - 10 years, 38.33% (23 respondents) had 11- 15 years, and 3.33% (2 respondents) had 16 years & above. It was evident that the majority of the respondents had the working experience period of 10 - 15 years, meanwhile the least frequency of work’s experience was 16 years & above.

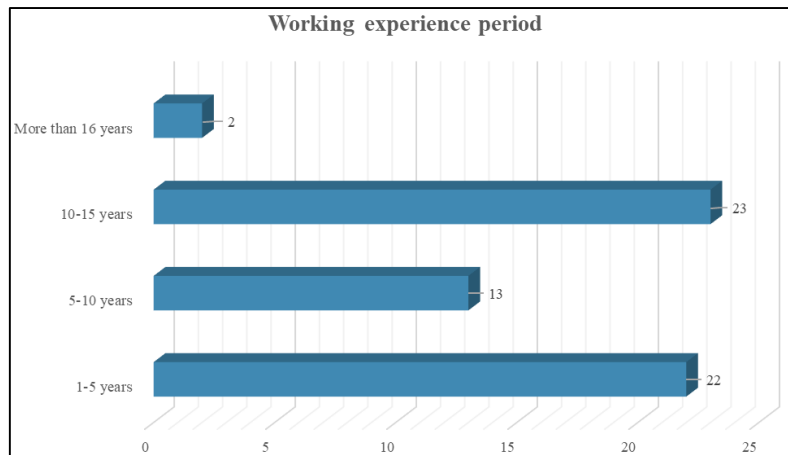


Figure 6: Working experience period

3.2 Awareness, involvement, perception and satisfaction of employees

As depicted in Figure 7, the majority of respondents (97.17%) had the awareness level of OSH management system in their workplace. The percentage of awareness level reflected on the high efficiency of OSH knowledge and information disseminated by the OSH committee within the workers community and management regardless hierarchy and job levels. Employer also demonstrated a well-ordered OSH issues additionally built the trust between employee and employer in creating a conducive, safety and health work environment. High functional Safety and Health Officer (SHO) also contributed to the OSH of workplace by spreading right information and doing regular inspection on workers and work setting.



Figure 7: Overall awareness level of safety and health management system

Meanwhile, the majority of the respondents (72.33%) agreed that most of the employee were involved in activities organized by the occupational safety and health committee as highlighted in Figure 8. The high percentage of employee participation was due to the strict OSH schedule and planning and compulsory attendance on activities organized by the OSH committee such as toolbox meeting, OSH briefing, fire drills, and housekeeping/joint cleaning activities in shared areas/factories. The effective communication between OSH committee with employee was also evident when most of the employee knew the initial actions to be taken before starting daily work and who to report to when an accident occurred in their work environment.

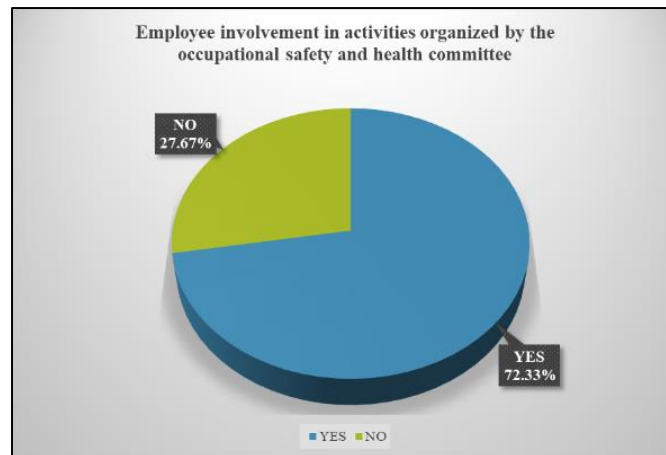


Figure 8: Employee involvement in activities organized by the OSH committee

In addition, Figure 9 shows that the majority of the respondents (84.50%) had high perception and satisfaction on the implementation of OSH management system might be due to the clear explanation by the OSH officer regarding risks and dangers at work, the consistency of information concerning the safety and health in work setting given, actions imposed on workers who violate safety and health laws, and personal protective equipment for the safety and health of employees provided by the employer.

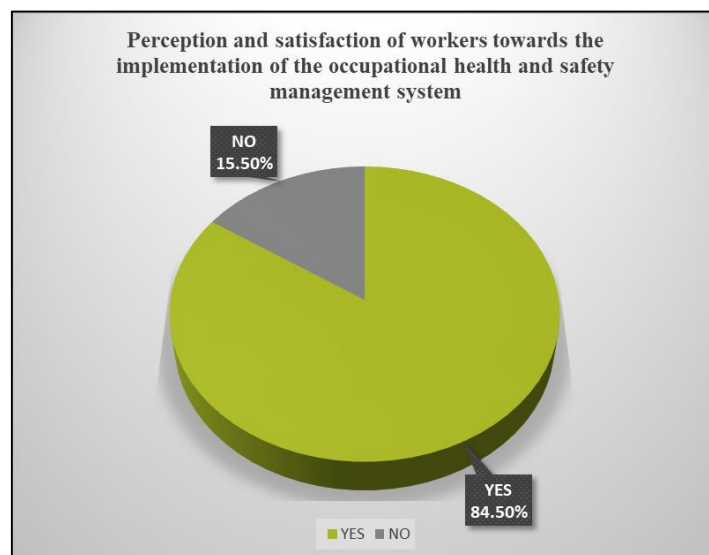


Figure 9: Perception and satisfaction of workers towards the implementation of OSHMS

3.3 Recommendations by the respondents for the improvement of OSHMS

The results from the questionnaire showed the following recommendations by the respondents for the improvement of the occupational health and safety management (OSHMS) that can be implemented and improved by the OSH committee. Some employees mentioned that workers should be exposed to safety matters while working and employers need to prioritize issues related to safety and health compliance in the workplace. The employers must establish more awareness program onwards, as well as improving and providing sufficient facilities. Moreover, the info related to safety and health should be more actively disclosed to all workers, and job safety info in the factory should be improved.

In addition, several employees recommended that the employers should put an act to workers who do not comply with safety and health requirements. Therefore, safety officer needs to be more active in monitoring safety related activities and need to act more stringent. A safety officer needs to be more forward in every item from the type of work to be done and the safety that needs to be considered.

Finally, a number of respondents also agreed that safety and health briefing must be given periodically including the employer. More appropriate actions need to be imposed for employee who disobeyed safety and health compliance. These recommendations are suitable to be taken into consider as they can improve the occupational safety and health management in the company.

4. Conclusion

This study specifically attempted to provide an empirical evidence on the employees' awareness, involvement, perceptions and satisfaction towards OHSMS implementation as prevention of workplace accidents at wood based manufacturing company in Malaysia. Overall, the findings of this study contributed significant practical implications in manufacturing companies to make improvements on every aspect of OSHMS implementation by investigating employee perceptions of OSH.

Demographic analysis portrayed that 60% of the respondents were males, whereas the remaining respondents were female. Machine operators and technicians each had eight respondents, made up the majority of the job positions. With 28.33% of respondents, the department of the majority of respondents was in the production department. The respondents represented the four categories of work experience with 36.67% had 1–5 years, 21.67% had 6–10 years, 38.33% had 1–15 years, and 3.33% had 16 years or more.

The OSH management system in their workplace was known to 97.17% of the respondents. The degree of awareness reflected how effectively OSH knowledge and information were shared with the workforce and management at all levels of management and regardless of hierarchy and job titles. Additionally, 72.33% of the participants agreed that the majority of workers participated in events planned by the occupational safety and health committee. The high level of employee participation might be attributable to the OSH committee's strict planning and scheduling requirements as well as the attendance requirements for events like toolbox meetings, OSH briefings, fire drills, and housekeeping/joint cleaning in shared spaces/factories.

The fact that 84.50% of respondents had a positive opinion of the OSH management system's implementation might be attributable to the OSH officer's thorough explanation of the risks and dangers that may arise at work, the consistency with which information about safety and health in the workplace was provided, the sanctions meted out to employees who break the law, and the employer's provision of personal protective equipment for workers' safety and health.

As for recommendation that should be taken into account for future studies, the author suggested that different wood companies should be added to the list for future research in order to obtain more results from respondents for analysis. This is because future researchers can gather a larger sample size for better data collection by focusing on the perception of OHSMS among employees in different wood based manufacturing companies in Malaysia. Another significant limitation in this study was time. By having extra timeline, future researchers could executed a thorough analysis statistically by comparing the findings from different wood based companies in Malaysia to get an insight on the effectiveness in the implementation of OHSMS.

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