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# SAFETY CAPITAL AND SAFETY PARTICIPATION OF OSHMS IN MALAYSIAN MANUFACTURING COMPANIES: THE MEDIATION EFFECT OF SAFETY TEAMWORK

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## ABSTRACT

Experience with Occupational Safety and Health Management System (OSHMS) has shown that everyone's participation is important for the system to act as an effective prevention mechanism towards accidents at work. Occupational accidents affected employee's morale towards work and become an additional cost to the recovery direct or indirect cost and the rebuilding of company's reputation. This study was carried out to determine the relationship between safety capital (management safety commitment, safety training, extrinsic reward, intrinsic reward, employee involvement and safety teamwork) and safety participation in OSHMS using the resource-based view (RBV) theory. A total of 100 responses were collected from Malaysian manufacturing firms certified with OHSAS 18001. Data were analysed using the Smart Partial Least Square (SmartPLS). Results showed that management safety commitment, extrinsic reward, safety training and employee involvement affect safety teamwork. Furthermore, findings show that safety teamwork mediates the relationship of management safety commitment, employee involvement towards safety participation in OSHMS. In conclusion, this research has shown that management commitment has an important and consistent role in encouraging collaborative safety efforts that would lead to organisational participation in OSHMS. Theoretically, safety teamwork proves to be an important mediation effect towards safety participation in OSHMS but not for rewards and training factors. Teamwork has no mediation effect on these factors towards safety participation.

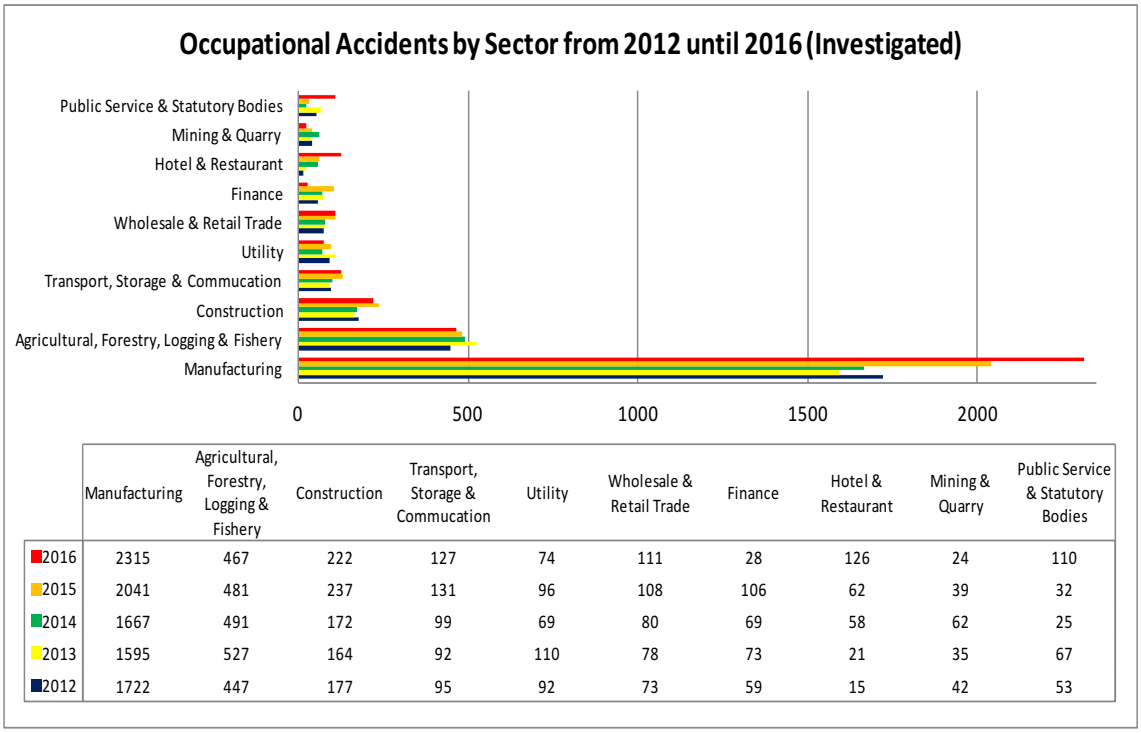
**Keywords**: Safety Participation, Safety Teamwork, OSHMS, Safety Capital, Malaysian manufacturing

## 1.0 INTRODUCTION

In Malaysia, the manufacturing industry is the top three contributors towards the country's GDP. At the same time, manufacturing sector has consistently reported the highest number of occupational accident rate. Figure 1 showed the statistics of occupational accidents across sectors from the year 2012 to 2016. As shown here, the manufacturing sector leads in the numbers of industrial accidents.

As a result, manufacturing companies are encouraged and being promoted to manage the increasing number of accidents is by having companies to comply with the international safety standard of OHSAS 18001. Specifically, OSH-Master Plan 2015-2020 outlined that organizations are progressively required to have Occupational Safety and Health Management System (OSHMS) running by the year 2020. An organization that implements effective OSHMS and can integrate it into its own overall business management system will tend to reap

better efficiency and productivity [1]. Companies will stay competitive in this area if they comply with the international safety standard of OHSAS 18001, but this requires active participation from all parties in the companies and not the safety personnel alone.




| | Manufacturing | Agricultural, Forestry, Logging & Fishery | Construction | Transport, Storage & Commucation | Utility | Wholesale & Retail Trade | Finance | Hotel & Restaurant | Mining & Quarry | Public Service & Statutory Bodies |
|---|---|---|---|---|---|---|---|---|---|---|
| 2016 | 2315 | 467 | 222 | 127 | 74 | 111 | 28 | 126 | 24 | 110 |
| 2015 | 2041 | 481 | 237 | 131 | 96 | 108 | 106 | 62 | 39 | 32 |
| 2014 | 1667 | 491 | 172 | 99 | 69 | 80 | 69 | 58 | 62 | 25 |
| 2013 | 1595 | 527 | 164 | 92 | 110 | 78 | 73 | 21 | 35 | 67 |
| 2012 | 1722 | 447 | 177 | 95 | 92 | 73 | 59 | 15 | 42 | 53 |

**Figure 1** Statistics of Occupational Accidents by Sector from 2012 to 2016 [2]

Lack of employee participation has been identified as a major reason for the non-sustainability of the integrated management system [2] such as the OSHMS. The need to promote safety participation in OSHMS has been widely emphasized at local and global level [3-7]. Participation in the safety management system requires voluntary behaviours beyond the employee's official job, that is, extra role or organizational citizenship behaviours [8, 9]. In OSHMS, safety participation is considered vital as it represents the behaviour of employees in ways that would increase the safety and health performance that support an organization's stated goals and objectives [10].

## 2.0 LITERATURE REVIEW

### 2.1 Safety Capital

Safety capital is based on the extension of resource-based view (RBV) theory. The focus of RBV theory is that organizations compete with one another based on their resources and capabilities [11, 12]. On the other hand, safety capital analyses the creation and composition of the intellectual capital embedded in organisations and ways to manage all these available knowledges through the OSHMS for organisational safety and health benefits [13]. Safety capital encompassed three main aspects which include the human capital, structural capital and social capital aspects.

### 2.2 Human Capital

The human capital is referred to the stock of knowledge and skills that belong to a firm's employee but are at the firm's disposal for the duration of their contracts [13]. For this study management safety commitment and safety training are considered as the human capital. These refer to individual behaviours based on the knowledge they have, and skills developed as resolutions in an improvement of workplace safety that helps to increase the firm's safety human capital.

#### 2.2.1 Management Safety Commitment

Management commitment or involvement in improvement activities will encourage employees' participation in an organization [9] [14, 15]. In order to achieve safer workplace, managers need to promote safety participation [8] through their own initiatives. Consequently, employer's participation in terms of commitment towards employees' welfare at work plays a very important role to the success of a management system. Past studies have shown that employees' behaviour and full participation in safety activities is positively influenced by managers' safety commitment and by the safety management system implemented in the organization [16, 17]. This is because managers play a dual role in influencing employees' attitudes as well as behaviours in reducing occupational accident rates at the same time [18].

In addition, as management prioritised safety behaviour, this will indirectly create a positive effect towards an organization's safety climate. Similarly, when employees perceive that management views safety as fundamental, it would result into a safety climate that influences safety behaviour [17] and tends to reciprocate by complying with safety rules and encourage participation in OSH related activities.

#### 2.2.2 Safety Training

Study by Fernández-Muñiz *et al.* [18] have recommended that implementing a management system capable of decentralizing the decision-making in this area will require considerable safety training for it to function well. In other words, workers need to be provided with the knowledge, capabilities and skills needed to carry out their tasks safely at workplace [10] [18]. Training will ensure that workers have the appropriate skills to help them in identifying the risks in the workplace, and the procedures available to prevent, correct or minimize these risks [17, 18]. Scholars affirm that employees are most knowledgeable about their work and involving them means using tacit knowledge of the worker. Consequently, training is believed to lead to better decision-making and eliminating and minimizing risk [19, 20].

According to Vinodkumar and Bhasi [19], safety training has shown to be an important ingredient for a successful accident prevention programme including occupational safety and health programmes. This is because safety training helps to improve behavioural skills related knowledge and/or attitudes. Thus, safety training has a positive effect in improving behaviours in making it to become a daily habitual routine [21].

### 2.3 Structural Capital

The second dimension of safety capital is the structural capital which is viewed as the set of knowledge, procedures and practices that remains in the firm, even when the employees decided to leave [13]. The reward system is categorised under the structural capital as it forms part of the procedures and practices of an organization.

#### 2.3.1 Reward System

Reward system plays an important organizational role in motivating employees to perform their daily tasks [22]. In order for safety management system to influence safety behaviour, a reward system should support the continuous cycle of improvement in an organization [23]. Specifically, rewards can be in the form of either extrinsic reward or intrinsic reward.

There are at least six different practices which formed the extrinsic rewards [24, 25]. First, individual based performance system refers to performance appraisals and pay increases that are based primarily on individual achievements. Second, profit sharing as a bonus plan where a portion of organisation's profits is shared with the employees. Third, is gain-sharing which refers to the portions of individual work unit gain in productivity, quality, cost effectiveness, or other performance improvements which are shared with employees in the form of bonuses based on a predetermined formula. Forth, is the employment security by offering permanency. Fifth, the overtime pays and finally, six is the quantity-based performance appraisals.

The intrinsic rewards include 7 different types [24, 25]. Firstly, a non-monetary form of recognition to acknowledge achievement. Second, creating a celebration to acknowledge an achievement. Third, having regular appreciative expressions displayed by managers to employee to acknowledge their achievement. Fourth, a 360-degree performance appraisal where feedbacks from co-workers and/or customers is incorporated into the performance appraisals. Fifth, providing a suggestion system available for individuals to make suggestions. Sixth, the use of developmental based performance appraisal. Finally, a continuous improvement based promotion wherein promotions are based primarily on the achievement of continuous improvement-based goals [24, 25].

### 2.4 Social Capital

The final dimension of the safety capital would be the social capital. The social capital is known as the knowledge embedded within, available through and utilised by interactions among individual and their networks of interrelationships [13]. Employee involvement and safety teamwork belongs to the social capital as they are organisational tools that can be used to increase internal safety social capital.

#### 2.4.1 Employee Involvement

Employee involvement can be viewed as a process for empowering employees to participate in managerial decision-making and improvement activities appropriate to their levels in the organization. Specifically, for employee involvement to be effective, management needs to define the level of employee involvement. This may mean asking for input before management decisions are finalized, sharing the decision-making process or allowing employees to make

decisions [26]. In other words, employee involvement can be an observed behavioural oriented technique involving individuals or groups in the upward communication flow and decision-making processes within the organization [10] [19]. Research had proven that employees who are involved in their work are also excited about their job, care about the future of their company and are willing to invest their discretionary effort [27].

### 2.4.2 Safety Teamwork

Motivating employees for greater participation in any improvement effort does require teamwork. Teamwork that exists in employee involvement programs is perceived to be the greatest contributor to improving organizational performance [28]. In this study, safety teamwork includes the actions taken by team members while communicating, cooperating, trusting, participating, sharing of goal, understanding of the task, roles and responsibilities of safety at work [29].

Teamwork also opens the opportunity to participate to generate innovative solutions by bringing in diverse viewpoints and knowledge, high involvement and at the same time save time and cost, avoiding layers of hierarchy [30]. This encourages cross-functional co-operation with different departments in the organization. These functions vary from tasks, sections and departments. Therefore, in a manufacturing set up, teamwork is viewed as an important outcome and condition for continuous improvement as it facilitates greater co-operation to continuously improve the functioning of the work group [31]. This is because organizations that are structured around teams allow teamwork among employees to become more productive.

## 3.0 OBJECTIVES OF RESEARCH

The research had the following objectives:

i. To examine the relationship between safety capital (human capital, structural capital and social capital) and safety participation in OSHMS.
ii. To investigate the relationship between safety teamwork and safety participation in OSHMS.
iii. To investigate the mediating effect of safety teamwork on the relationship between safety capital and safety participation in OSHMS.

## 4.0 RESEARCH FRAMEWORK

In order to investigate the critical factors that contribute to the safety participation in OSHMS, the resource-based view (RBV) theory is used as the explanatory framework for this research. According to the RBV theory, a firm's ability to achieve its goals depends on specific organizational capabilities that the firm possesses and the firm's level of success in putting them to use as well as maintaining them [12]. The concept of safety capital is used to analyse the creation and composition of the intellectual capital embedded in OSHMS. Based on Nuñez and Villanueva [13] findings, the safety capital model includes the human, structural and social capital components. Figure 2 shows the relationships between safety capital, safety teamwork and safety participation in OSHMS

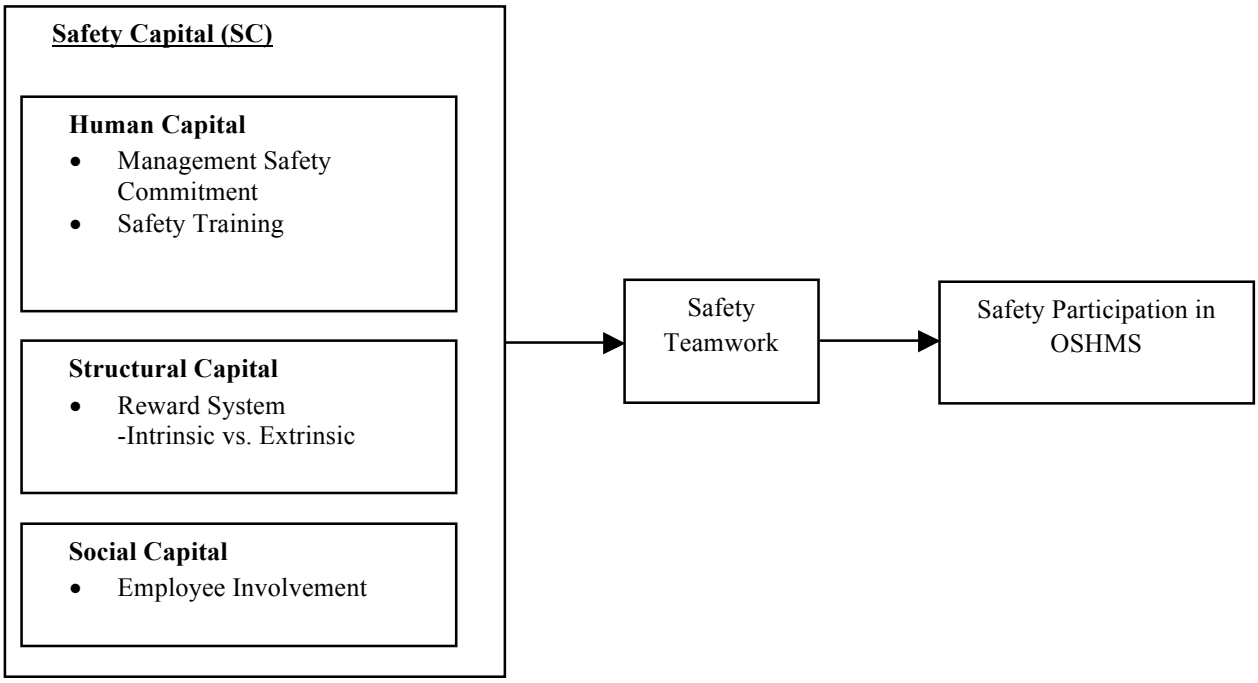



**Figure 2** The relationships between Safety Capital, Safety Teamwork and Safety Participation in OSHMS

Based on the research framework, the following hypotheses were proposed:

H1: Management safety commitment has a positive significant relationship towards safety teamwork.
H2: Safety training has a positive significant relationship towards safety teamwork.
H3: Intrinsic reward has a greater positive effect than extrinsic reward towards safety teamwork.
H4: Employee involvement has a positive significant relationship towards safety teamwork.
H5: Safety teamwork has a positive significant relationship towards safety participation in OSHMS.
H6: Safety teamwork mediates the relationship between management safety commitment and safety participation in OSHMS.
H7: Safety teamwork mediates the relationship between safety training and safety participation in OSHMS.
H8: Safety teamwork mediates the relationship between intrinsic reward and safety participation in OSHMS.
H9: Safety teamwork mediates the relationship between extrinsic reward and safety participation in OSHMS.
H10: Safety teamwork mediates the relationship between employee involvement and safety participation in OSHMS.

## 5.0 RESEARCH METHODS

The following steps are taken in conducting the research.

### 5.1 Pilot Study

In this study, eight (8) safety officers working in manufacturing firms who are knowledgeable in OSH field were requested to answer the questionnaire and provide feedback. They were asked to identify ambiguities with the questions and inappropriateness of the questions based on the manufacturing working environment. Based on their feedbacks and researcher's field observation, filter questions and Bahasa Malaysia translation were added.

### 5.2 Research Instrument

The measures of safety participation in OSHMS (3-items) were adapted from Fernandez-Muniz *et al.* [32], safety teamwork (7-items) were from Tong *et al.* [29] and intrinsic and extrinsic reward (13-items) were adapted from Ozutku [25]. In addition, safety management commitment (9-items), safety training (6-items), and employee involvement (5-items) were adapted from Vinodkumar and Bhasi [10]. All items were measured on a five-point Likert-scale, ranging from '1 = strongly disagree' to '5 = strongly agree'.

### 5.3 Population and Sampling

In this study, the sample population includes targeted respondents of safety and health officers who represent their firms from the manufacturing sector. The survey was restricted to organizations with continuous 3 years of MS 1722: 2011 or OHSAS 18001 certification as this was recommended in study undertaken by Podgorski [33] which states that a company that has implemented OSHMS with a minimum of 3 years certification can provide more reliable data as it is in a more stable functioning and improvement stage. This means that the organization had gone through the yearly surveillance audits and had been re-certified on the third year. The safety officers were recruited from a list of registered safety and health officers obtained from the website of the Malaysia Ministry of Human Resource in the Department of Occupational Health and Safety. There were 2472 certified officers from various industries listed in the website and only 366 firms were identified to meet the selection criterion.

## 6.0 RESULTS

### 6.1 Descriptive Findings

The breakdown of the size of the participated companies is shown in Table 1. Majority (32.0%) of the participated manufacturing companies has more than 1000 employees. Table 2 shows that most of these companies have received certification of OHSAS 18001 only for 3 years, which signifies them as OSHAS 18001 new players. In terms of job position, as depicted in Table 3, respondents for each company came from different managerial levels. Majority of them (74.0%) have been an OSH officer for more than 3 years as depicted in Table 4.

**Table 1** Size of Company

| No. of Employees | Frequency | Percentage (%) |
|---|---|---|
| 1-50 | 1 | 1.0 |
| 51-150 | 17 | 17.5 |
| 151-500 | 28 | 28.9 |
| 501-1000 | 20 | 20.6 |
| Above 1000 | 34 | 32.0 |

**Table 2** Years Certified with OSHAS 18001

| Tenure of Certification | Frequency | Percentage (%) |
|---|---|---|
| 3 years | 43 | 43.0 |
| 4-6 years | 22 | 22.0 |
| 7-9 years | 15 | 15.0 |
| 10-12 years | 11 | 11.0 |
| Above 12 years | 9 | 9.0 |

**Table 3** Respondents Job Position

| Job Position | Frequency | Percentage (%) |
|---|---|---|
| Senior Manager | 25 | 25.0 |
| Junior Manager | 28 | 28.0 |
| Supervisor | 15 | 15.0 |
| Engineer | 7 | 7.0 |
| Safety Officer | 25 | 25.0 |

**Table 4** Tenure as OSH Officer

| Tenure as OSH Officer | Frequency | Percentage(%) |
|---|---|---|
| Less than 3 years | 23 | 26.0 |
| 4-6 years | 23 | 26.0 |
| 7-9 years | 12 | 13.0 |
| 10-12 years | 19 | 21.0 |
| Above 12 years | 23 | 14.0 |

### 6.2 Convergent Validity

As reported in Table 5, factor loadings, Average Variance Extracted (AVE) and composite reliability (CR) can be assessed to confirm convergent validity. Average Variance Extracted (AVE) is the mean variance extracted for the items loading on a construct and is a summary indicator of convergence [34]. An AVE value of .50 or higher is the rule of thumb for a good convergence [35].

Next, composite reliability was assessed for reliability, which is a measure of convergent validity. The composite reliability value should be above .70 to conclude that we have an accurate scale [36]. Table 5 shows that the estimates ranged from .80 to .92, indicating a good reliability result [35].

**Table 5** Result of the Measurement Model

| Construct | Items | Loadings | AVE | CR |
|---|---|---|---|---|
| Safety Participation in OSHMS | SPR1 | .84 | .78 | .92 |
| | SPR2 | .92 | | |
| | SPR3 | .89 | | |
| Management Safety Commitment | MSC1 | .78 | .71 | .92 |
| | MSC2 | .90 | | |
| | MSC3 | .81 | | |
| | MSC8 | .88 | | |
| | MSC9 | .83 | | |
| Safety Training | STR1 | .79 | .62 | .87 |
| | STR2 | .79 | | |
| | STR5 | .78 | | |
| | STR6 | .79 | | |
| Intrinsic Reward | INR1 | .65 | .52 | .87 |
| | INR2 | .76 | | |
| | INR3 | .77 | | |
| | INR5 | .75 | | |
| | INR6 | .67 | | |
| | INR7 | .72 | | |
| Extrinsic Reward | EXR3 | .72 | .58 | .80 |
| | EXR5 | .78 | | |
| | EXR6 | .78 | | |
| Employee Involvement | EI1 | .85 | .63 | .83 |
| | EI2 | .74 | | |
| | EI4 | .78 | | |
| Safety Teamwork | STM2 | .85 | .69 | .90 |
| | STM3 | .85 | | |
| | STM5 | .84 | | |
| | STM7 | .79 | | |

### 6.3 Discriminant Validity

Discriminant validity is the extent to which a construct is fully distinct from other constructs [35]. Discriminant validity is analyzed by comparing the square root of the Average Variance Extracted (AVE) with the correlations between the variables. All the square root of the AVE extracted was higher than the correlations values in the row and the column, indicating adequate discriminant validity [37]. In Table 6, the square root of the AVE is reported diagonally and the correlation coefficients for each construct is less than the square root of the AVE. Thus, the measurement model demonstrated adequate convergent validity and discriminant validity, confirming the construct validity and conceding to proceed for hypotheses testing.

**Table 6** Discriminant Validity of the Variables

| Variables | Mean (SD) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1.Safety Participation (SP) in OSHMS | 4.03(0.63) | **.88** | .54 | .63 | .47 | .27 | .55 | .68 |
| 2.Management Safety Commitment (MSC) | 4.35(0.50) | | **.84** | .79 | .68 | .48 | .79 | .78 |
| 3. Safety Training (ST) | 4.28(0.53) | | | **.79** | .63 | .42 | .66 | .72 |
| 4. Intrinsic Reward (IR) | 3.81(0.58) | | | | **.72** | .60 | .72 | .63 |
| 5. Extrinsic Reward (ER) | 3.80(0.67) | | | | | **.76** | .41 | .49 |
| 6.Employee Involvement (EI) | 4.33(0.47) | | | | | | **.79** | .74 |
| 7.Safety Teamwork (STM) | 4.19(0.49) | | | | | | | **.83** |

*Note.* Diagonals (in bold) represent the square root of the AVE, while off-diagonals represent the correlations

### 6.4 Hypotheses Testing

The relationship between the direct paths among the independent variables, mediator and dependent variable are discussed in this section. Ten hypotheses were postulated for the relationship between safety capital and safety participation in OSHMS. Tests of the hypotheses findings indicated management safety commitment (MSC), safety training (ST), extrinsic reward (ER) and employee involvement (EI) have positive significant relationships with safety teamwork (STM). In addition, safety teamwork has a positive relationship with safety participation (SP) in OSHMS. Thus, hypotheses 1, 2, 4 and 5 are supported. On mediation testing, safety teamwork is found to mediate the relationships between management safety commitment, employee involvement and safety participation in OSHMS. Thus, hypotheses 6 and 10 are supported. The results are presented in Table 7 and Table 8.

**Table 7** Path coefficient for safety capital and safety participation in OSHMS

| H | Direct Relationship | Path Coefficient *(β)* | *SE* | *t*- value | Results |
|---|---|---|---|---|---|
| H1 | MSC → STM | 0.0 | 0.1 | 2.5*** | Yes |
| H2 | ST → STM | 0.1 | 0.1 | 1.7** | Yes |
| H3 | IR → STM | 0.4 | 0.1 | 0.8 | No |
| H3 | ER→ STM | 0.2 | 0.1 | 1.4* | Yes |
| H4 | EI → STM | 0.0 | 0.1 | 2.9*** | Yes |
| H5 | STM → SP OSHMS | 0.0 | 0.1 | 13.6*** | Yes |

*Note.* *p < .1(1.28). **p < .05 (1.65). ***p < .01 (2.33)

**Table 8** Mediating Effect of Safety Teamwork.

| H | Mediation Relationship | Path Coefficient *(β)* | *SE* | *95% CI* | | *t*-value | Results |
|---|---|---|---|---|---|---|---|
| | | | | *LL* | *UL* | | |
| H6 | MSC → STM→ SP OSHMS | 0.0 | 0.1 | 0.1 | 0.4 | 2.3*** | Yes |
| H7 | ST → STM→ SP OSHMS | 0.1 | 0.1 | -0.0 | 0.3 | 1.7** | No |
| H8 | IR → STM→ SP OSHMS | 0.4 | 0.1 | -0.1 | 0.2 | 0.8 | No |
| H9 | ER → STM→ SP OSHMS | 0.2 | 0.0 | -0.0 | 0.2 | 1.4* | No |
| H10 | EI → STM→ SP OSHMS | 0.0 | 0.1 | 0.0 | 0.3 | 2.9*** | Yes |

*Note.* *p < .1(1.28). **p < .05 (1.65). ***p < .01 (2.33). CI = confidence interval; *LL* = lower limit; *UL* = upper limit

## 7.0 DISCUSSION

Firstly, management safety commitment was found to have a significant influence on safety teamwork. Management commitment towards safety encourages employees to carry out safety practices collectively through teamwork. This is consistent with findings of Tong *et al.* [29]. Management commitment provides a conducive and encouraging environment for a joint effort towards safe work. Furthermore, as manufacturing firms in Malaysia started adopting the lean work system, teamwork is the new work practice which must be learnt by the workforce at all levels. This seems to in line with the current changes to the work practices at the manufacturing firms and it encourages safe work. This influential and supporting role of the management helps to set the stage for the next level of safety participation of OSHMS. Therefore, management is the driver to ensure that company objective is achieved and sustained over time especially in the aspect of safety.

This could possibly be the supporting explanation for the significant relationships found between safety training, employee involvement and safety teamwork. As lean work practice is implemented in this chosen work setting, it naturally encourages team working. This is consistent with Vinodkumar and Bhasi [19] findings. Thus, the safety training and employee involvement encourage the development of safety team working which eventually encourages safety participation.

In addition, extrinsic reward and not intrinsic reward was found to have a significant influence on safety teamwork. Thus, no comparison analysis was conducted for both rewards on safety participation of OSHMS as only extrinsic reward was found to be significantly influencing safety teamwork. Employees joining big firms have expectation of receiving a fat pay and bonuses end of the year which may differ from those joining the small firms. These are examples of extrinsic rewards clearly associated with joining big firms. Consistently, Khoo *et al.* [38] have found that monetary reward does not support employees' safety compliance in the small firms. These two contrasting findings with the regard to extrinsic reward reaffirms the type of reward expected by employees correspond to the size of the business establishments that they joined. Future studies should conduct a comparison study to test whether employees' motivation to comply with safety practices is influenced by the size the

firms. Consequently, big firms can use monetary rewards as a motivating factor to encourage compliance with safety practices. Thus, extrinsic rewards help to reinforce and sustain safety teamwork that ultimately leads to safety participation in OSHMS.

This study has also found that safety teamwork mediates the relationships of management safety commitment and employee involvement towards safety participation in OSHMS. Specifically, although management shows commitment towards safety, collaboration of members in a team formation with the regard to safety is necessary to ensure safety participation in OSHMS. Furthermore, collective effort of employee commitment to safety in a formal structure will encourages employees' participation in OSHMS. These significant findings are supported by past studies [28] and Tong *et al.* [29].

On the other hand, safety teamwork did not mediate the relationships of safety training, safety rewards and safety participation. Moreover, intrinsic reward did not have a significant direct relationship with safety teamwork. The insignificant relationships may imply that safety training and safety rewards already have strong relationships with safety participation. This could also be due to the measurement items for safety training as they are very much related to the technicality of safety training specifically on training employees to be familiarised with safety rules, procedure and preventing accident at work. Existing training lacks content that emphasises the development of behavioural aspects or training that emphasises building collective forces in combating safety issues or problems [38]. Therefore, the relationship of safety training and safety participation is not mediated by safety teamwork when safety teamwork relates to the collective behavioural development. Future study may examine the possible effect of company size on these relationships as contradictory results were found for different company size.

## 8.0 CONCLUSION

The findings of this study show that safety teamwork mediates the relationships between management safety commitment, employee involvement and safety participation in OSHMS for the manufacturing firms in Malaysia. This may also become a limitation of interpreting the results as only limited to manufacturing firms that are certified with OSHAS18000 for at least 3 years. Further studies are required to investigate other effects that the model may have on different size of firms. Obviously, the results show that with teamwork, management commitment and employee involvement would have a significant relationship to organisational participation in ensuring safety practices is upholding. The insignificant mediating effects of safety teamwork on the relationships between safety training, safety reward and safety participation indicate that these variables need to exist on their own and directly affecting safety participation. Safety training needs to be made available for all employees directly and cannot be replaced by collective efforts. Especially for Malaysia, safety training means technical training with the regard to doing their work safely. Similarly, for safety reward, for these firms size, rewards associated with safety cannot be replaced by good feeling of collective efforts alone. This finding has an implication to how SMEs are to encourage safety participation of OSHMS as implementing monetary related safety reward would be costly for SMEs which are known to own very limited. Future studies may want to examine specific type of intrinsic safety rewards that can be used to encourage safety participation. Intrinsic reward may prove to be least costly to bear for SMEs but have better impact and sustainable value for an upstart venture like SMEs. This would be good to support SMEs safety participation of OSHMS. Successful implementation of OSHMS is key to sustainable organizational

competitiveness and business wellbeing and most importantly, to continue the company's certification for OSHAS18000. This is obviously important to the extent that companies invested some funds to be certified with an international recognised safety and health certification. This obviously a reflection of management commitment towards safety which will sustain their organisation's participation with OSHMS, which something that companies big or small can manipulate to their advantage.

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