

The Impact of Psychological Safety Climate on Individual Safety Performance in the Malaysian Manufacturing Small Enterprise: The Role of Psychological Factor and Psychological Work Ownership

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Abstract: Small Medium Enterprises have been recognized as a back bone of Malaysia economic. Instead of significant contribution to the national economy, their contribution to the total occupational accident substantially high. This present work aims to investigate the role of psychological work ownership and psychological factors in the relationship between safety climate and safety performance (individual level) in the Malaysian manufacturing small enterprise. Random stratified sampling design was successfully implemented in Malaysian manufacturing small enterprise involving 11 firms in seven districts of the East Coast Region of Malaysia. The model revealed a significant positive relationship between psychological safety climate positively and individual safety performance. Results based on a sample of 240 employees supported the conceptual framework, indicating that the effect of psychological factors and psychological work ownership has an essential practical role in, encourages psychological safety climate, with subsequent prediction of individual safety performance events mediated by psychological safety climate. Implications for theory, practical and recommendation research on psychological climate, ownership, and performance for further research are discussed.

Key words: Individual Safety Performance • Psychological Factors • Psychological Work Ownership
• Psychological Safety Climate • Small Enterprise

INTRODUCTION

The Small Medium Enterprises (SMEs) have been recognized as a back bone of Malaysia economic development [1]. Statistic from national accounts small and medium enterprise a report shows 31% of the GDP contributed by the SMEs' [2]. SMEs dominates the number of establishments with a percentage of 97.3% representation of 645, 000 SMEs offering 86.01% of employment [3]. Instead of significant contribution to the national economy, their contribution to the total occupational accident substantially high. According to the data published in the SOCSO Annual Report, average 15 thousand occupational accident reported in Malaysia annually within eight years [4].

SMEs recorded high occupational accident compare to the large company [5-7], 30% to 50% higher than big companies [8]. It is further supported by the National Institute of Occupational Safety and Health (NIOSH), 80% to 90% of occupational accident identified from Multinational Company (MNC) vendor which is categorized under SMEs [9]. Consequently, Malaysia had a substantially higher amount of compensation claims from Social Security Organization (SOCSO). In addition, the financial amount related occupational accident of increase with the increasing year [10, 11]. International occupational accident estimated almost 2.3 million people involved in occupational accident and work-related diseases (2, 022, 000 deaths) every year in global [12].

Problem Statement: A meta-analytic review show that safety climate has a significant positive correlation with the actual accident [13, 14]. The principle concept of safety climate arose out of accident cases such as the Bhopal disaster [15]. International Labor Organization (ILO) in 2006 a convention was rectified the promotional framework for occupational safety and health (C187), safety culture used an essential solution to the occupational accident. In other hand, SC research realistically demonstrates the importance of employee perception about the organizational priorities as antecedence to safety outcome [16]. Past studies, indicated that behavior-based safety and traditional approach (accident rate) very effective in reducing occupational related accident (injuries, loss time and severity rate) [17, 18], safety-related behavior [19] and the most effective measure to prevent injuries in the workplace [20].

Cooper [21] justified that behavior based safety is a systematic valuations of implementations of psychological research on human behavior that enabled successive refinements of the safety problem. Currently, it was suggested that the implementation integrative approach of the culture-based and behavior-based safety in small enterprise needs crucial management commitment along with culture change [22], a good initiative for improving safety of front line employees [23], especial in house employee in small manufacturing enterprise. Furthermore, prominent study by Zohar *et al.* [24] confirmed that work ownership is complementary of safety climate in the role of predicting ISP, [25, 26].

Research Questions: The research questions addressed in the present Malaysian manufacturing small enterprise study are:

- Is there any relationship between PSC and ISP?
- Do the PWO and PF have direct effect on ISP?
- Do the PWO and PF have an indirectly effect in the relationship between PSC and ISP?

Research Objectives: Generally, this present work aim investigates the role of PWO and PF in the relationship between psychological safety climate (PSC) and individual safety performance (ISP) in Malaysian manufacturing small enterprise. Specific objectives of this present study are:

- To examine the relationship between PSC and ISP.
- To examines the direct effect of the PWO and PF to PSC.

- To explore the indirect effect of the PWO, PF in the relationship between PSC and ISP.

Literature Review: This article emphasized on the impact of the PSC on ISP in Malaysian manufacturing small enterprise. Besides that, the purpose of the literature review to derive effect the role of PWO and PF towards PSC from the past studies. The need for intervention of antecedences of safety climate is an essential to improve safety climate and enhance individual safety performance subsequently reduce safety related issues in Malaysia manufacturing small enterprise.

Psychological Safety Climate: In 1980, safety climate concept appears as an effect of a universal approach for the safety management evaluation and management system and understanding accident causation. Safety climate refers to of employees' perceptions of the policies, procedures and practices relating to safety in their work environment [27]. SC defined as individual perceptions of macro element from work environment such as national, industry, organization, department and or unit variables can directly or indirectly influence individual performance related to safety at work [28, 29]. Several researchers claimed that safety climate is a measurable facet of safety culture [30, 31]. After a few decade safety climate has been studied, no standardized definitions and scope are found [32–36], even the terms of safety culture, safety climate and perhaps safety management used interchangeably [37].

Many researchers used the term psychological SC to define the individual level of SC [38-41]. While some other researcher used the term individual difference to explain SC at the individual level [42-44]. Empirical support unidimensional of PSC has been successfully validated [24, 40], electrical and utility industry-specific [41] and across different industries and companies [40]. Malaysian behavioral based safety studies in manufacturing [8, 45], wood manufacturing [46], automotive manufacturing [47], construction [48-49], electronic manufacturing [50, 51] and heal care [38]. Despite the extensive evidence relating to predictive validity of PSC, there are only a small number of published studies addressing this issue among Malaysian manufacturing small enterprise. Thus, this study attempt to replicate the PSC of non-manufacturing to the similar nature of the characteristic in the Malaysian manufacturing small enterprise.

The Impact of Psychological Safety Climate on Individual Safety Performance: A meta-analysis on 90 past studies supported that PSC underlying management commitment

factor was a core predictor of safety performance [15]. The results of this meta-analysis indicated that the mean correlated correlation ($r= 0.49$, $p<0.05$) between PSC (management commitment) significantly predict the safety performance (injuries). Some other related studies found that management commitment was the most greatest antecedent of safety compliance, indicate by coefficient regression ($b = 0.169$, $p < 0.001$)[16], ($b=0.19$, $p<0.01$) [17] and had an indirect effect on occupational injury ($b=0.049$, $p<0.0001$) [16]. A study in hospital setting found that generic PSC was found to have significant impacts on employee's safety compliance ($b=21\%$) and negatively correlated with injuries, but fail to achieve direct statistical connection to safety participant and [18]. In contrast, the latest meta-analytic study clarified that there has been no statistical link established between PSC (management commitment) and injuries (safety performance) [19]. Similarly, researchers found that safety climate and safety performance (accident) not significant correlated [20].

Moreover, it is practically utilized psychological level responses to examine the psychometric properties of a PSC measure such as construct validity or measurement equivalency (e.g., [21, 22]. Recent evidence suggests that testing, absence of common aspects of safety climate is more easily accesses in non-lone working situations [23]. A short scale PSC from Lee *et al.* [23] was adapted for this present study. Determination of the underlying structure of safety climate is generic or context-specific not much been argued on critical theoretical or practical issues [24]. Considering discussed the results of previous studies, it can be summarized that inconsistency finding on safety climate and safety performance. This evidence would suggest that psychological aspect of SC has a significant positive relationship with behavior based ISP among employee in the Malaysian manufacturing small enterprise. Specifically, hypothesis one reads as follows:

Hypothesis 1: There will be a significant positive relationship between PSC and ISP

Social Exchange Theory: The social exchange theory (SET) is generally accepted in sociology during the 1960s [25]. Intense concentration of psychological condition imposed by individuals, weighted in the social relationship was established the social exchange theory [25]. A series of research by Zohar [26-28] revealed a significant positive relationship between safety climate and ISP through principles of social exchange. In addition, SET mainly used as theoretical mechanisms that may help to describe and forecast the relationship between PSC and safety behavior [29].

Usually, employee reciprocates their management commitment in towards safety in accordance to the implicit obligation to safety policies, procedures and practices for the employment. In return, employee reciprocated safety citizenship [63][64] PWO as a stem of PO, Zohar has been able to show the existence of the connection between PWO and safety climate [31].

Several researchers clarified that there has been little research that systematically test the relationship between these PF and safety climate [32]. The sense of psychological ownership among employees will positively postulate improvement of employees' commitment to safety within group members in the firm [33]. Zohar [28], suggested that the effect of safety climate will depend on its complementary climate, identified as PWO climate. Recent study, offer new ideas regarding the management of the ISP from a psychological perspective present in Figure 1. Therefore, it can be assumed the effects of psychology work ownership and ISP mediate by the PSC in Malaysian manufacturing small enterprise, which is addressed in the present study, so the next hypotheses are:

Hypothesis 2a: PWO have a direct effect on PSC

Hypothesis 2b: PWO have an indirect effect in the relationship between PSC and ISP

The Role of Psychological Factors on Psychological Safety Climate and Individual Safety Performance:

Cooper's [34] illustrated connection of the situation, person and behavior in the reciprocal safety climate model. The PF was evaluated through safety climate surveys and the behavior meant actual partial safety related behavior [34]. Bamber and Castka [35] justified PF like personal traits reflected individual behavior. Surveys such as that conducted by Wu *et al.* [36] indicated that PF such as personal traits have appositve and significant influence safety performance, he clarified that personal traits explained about 12% of variance safety performance. Vinodkumar and Bhasi [37] revealed PF such as employee age and experience predicted similar behavior. A recent study of the concept of 'safety intelligence' as related to senior managers' ability related safety performance suggested psychological factor support their impact on safety [38]. Several studies assumed that certain PF likely education has a direct effect towards safety related outcome [39] and it may influence PSC factors to determine individual level the safety behavior [32, 40]. Thus, this leads to the following hypothesis:

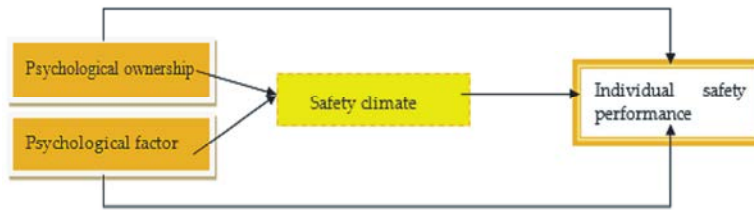


Fig. 1: Conceptual framework model linking PWO, PF and SC as predictor of ISP

Hypothesis 3a: PF have a direct effect on PSC

Hypothesis 3b: PF have an indirect effect in the relationship between PSC and ISP

MATERIALS AND METHODS

Sampling Procedure: Random stratified sampling involving employees from 11 manufacturing small enterprise firms in seven districts of the East Coast Region of Malaysia comprise of each of four production categories: metal fabrication, food processing, chemical industry and textile industry. A total of 377 employees was selected regarding to job designation (30 % supervisor and 70% employee) proportionate to the total number of each job designation in the population. Total number of samples in this study are sufficient enough according to Sekaran [41] in achieving objective of this study.

Research Instrument: A structured questionnaire has been used to collect data of this study. Three section questionnaires consist of the PF, PSC and ISP. PF in Section 1 was measured using nominal scale. Section 2 and Section 3 measure using a Likert Scale to explain the degree of respondent's agreement with items in the questionnaire. According to Huang *et al.* [41], the finding from several countries shows that a seven-point scale is more accurate than a four-point scale in prompting. Section 2 was measured using nondiscriminatory responses 10 Likert scale, 1 = strongly disagree to 10 = strongly agree. Section 3 will be measured using a seven point Likert scale; 1 = almost never to 7 = always.

Psychological factors comprise of six elementary factors; 1) age: 0-25, 26-30, 31-35, 36-40, 41-45, 46-50 and 51-60, 2) gender: 1=male, 2=female, 3) job designation: 1=operator and equivalence and 2= supervisor /above than operator and equivalence; 4) accident experience: 1=no accident and 2= have accident, 5) length of services: 0-5, 6-10, 11-15, 16-20, 21-30, more than 30 and, 6) education level: PMR [below O level), SPM (O level), DIP/ Matriculation/STPM/(A level), Degree and Higher than Degree.

Psychological work ownership was adapted from Van Dyne and Pierce [45]. A five item questionnaire was adapted with minor modification. The level of agreement on every item in this variable is rated according to a 5-point Likert scale where 1 represents the lowest level of agree which is equal to strongly disagree and point number 5 represent strongly agree. The Cronbach alpha value of PWO (0.9) indicated instrument had high reliability and content validity.

Safety climate was measured with Zohar *et al.*, 2014 measurement was adapted with little adjustment, specific scale of the original 12 items (a detailed description of this scale development and its psychometric) properties can be found in previous researches [23, 46, 47]. Scale items refer to the employee's view of firm policies and procedures and operator practices. The result of reliability tested using SPSS version 21 demonstrated a value (0.938) is a good fit for psychometric requirements to a measure PSC.

Individual safety performance was measured with new scale adapted from [48] and information from literature review associate with small enterprise manufacturing characteristic. The item was designed to enhance the uniqueness characteristic in small enterprise manufacturing refer to potential ignorance of safety practices in Malaysian small enterprise manufacturing. Original 20 Item wording was designed to minimize social desirability bias. After validity test, there are four questions has been deleted from the set of question for the reliability concern. The result of Cronbach Alpha tested using SPSS version 21 shows a value (0.73) adequate for psychometric requirements to measure ISP.

Analysis: Descriptive analyses were performed, consists of identifying the frequency and percentage to simplify and characterize the respondent information based on field survey. Pearson correlation was implemented to identify multivariate relationships between study variables. Path analysis tested the series of hypothesized direct and indirect effects, parametric residual bootstrapping was used to calculate the confidence intervals of the indirect effect estimates using IBM SPSS

version 20 with Processes version 2.16 for SPSS [49]. The indirect path analysis was conducted to evaluate the indirect effect of the PF and PWO on the relationship of PSC and ISP in the small enterprise manufacturing. The indirect effect estimates were replicated 1000 based on [49] with a 95.00 percent level of confidence for all confidence intervals in output. Additionally, Sobel test conducted to test the mediation hypothesis [50].

RESULTS

The overall response rate for this study was 56%, this rate was deemed to be medium high. Several researchers identified that low response rate is a common for surveys among Malaysian SMEs [51-53]. The field work distributed implement through courier and face to face survey. A courier questionnaires took almost two months expected low respond and time taken longer than a face to face survey, resulted in a total 4 firm returned questionnaires out of 8 firm for this survey. While 215 total face to face survey completed questionnaires was returned within two weeks which is faster than courier approach.

There are six PF convergence in the first section of this study, namely; education level, gender, length of services, job designation and accident experience. Descriptive result of PF of respondent present in Table 1, Table 2 and Table 3.

Table 1 shows information regarding the respondent's age and gender, based on 240 completed questionnaires. 66% or 159 respondent were come from male and the rest were female respondents. In terms of age, respondents have to fill up the answer in the blank box. The results show that the majority of the respondent was at the age of 25 years and below, who are considered young in the industry. 48 out of 240 respondents were in the age group of between 26 until 30 years old, while the remaining respondents were in the group of age group of between 31 to 35, 36 to 40, 41 to 45, 46 to 50, 51-60 years old with 28, 22, 27 and 23 frequency, respectively.

The finding in the Table 2 illustrated that the more that 50 % of the respondent low educated, 117 (49 %) respondent and about 34 (14%) of respondent held the SPM and PMR respectively. A further 56 respondents had Diploma, STPM or Matriculation certification or the certification of qualification skill from the National Vocational Training Centre (NVTC) which is an equivalence with Diploma. The remaining 33 respondents had a degree and post degree education, with 29 of them are degree holder and 4 of them having completed their master degree.

Table 1: Percentage and Frequency of Respondent according to Gender and Age

		Frequency	Percentage
Gender	Male	159	66.3
	Female	81	33.8
	25 and less	79	32.9
Age	26-30	48	20.0
	31-35	28	11.7
	36-40	22	9.2
	41-45	27	11.3
	46-50	23	9.6
	51-60	13	5.0
Total		240	100.0

Table 2: Percentage and Frequency of Respondent According to Education level

		Frequency	Percent
Education level	PMR (below O level)	34	14.2
	SPM (O level)	117	48.8
	DIP/STPM/Matriculation (A level)	56	23.3
	Degree	29	12.1
	Higher than Degree	4	1.7
Total		240	100.0

Results show that, 72 % of respondents (173 responses) were operator and equivalence, 27 % of them were above than operator, supervisor and equivalence, as presented in Table 3. The rest of two percent of the respondents is above than supervisor, manager and equivalence with the working experience more than 30 years. Further information shows that, only a minority of the respondent (48 responses) had occupational accident experience and the rest is 192 respondents have never had occupational accident experience. Indeed, 33 respondents (operator and equivalence), 14 respondents (above than operator and supervisor and equivalence) and 1 responded (manager, equivalence and above) have an occupational accident based on job designation.

However, accident experience decrease and length of services recorded the highest number of occupational accident in the group of respondent with length of services between five years and less. Number of responses have occupational accident 18 respondents, 12 respondents, 12 respondents 5 respondents and one respondent from 0 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 to 30 years, respectively.

Testing the Mediation Model: Table 4 provides the means, standard deviations, correlation coefficient and significant level of the overall measurement variables in this study. The evidenced revealed psychological factor has medium sized correlation with the PWO, SC and ISP. PF: education found not significant correlated with PWO,

Table 3: Job Percentage and Frequency of Respondent According to Designation and Occupational Accident Experience

Accident experience		Yes	No	Frequency (%)
Job designation	Operator and equivalence	33	140	173 (0.72)
	Above than operator and supervisor and equivalence	14	51	65 (0.27)
	Manager and equivalence above than supervisor	1	1	2 (0.01)
Length of services	0-5 years	18	114	132 (0.55)
	6-10 years	12	33	45 (19)
	11-15 years	12	26	38 (0.16)
	16-20 years	5	12	17 (0.07)
	21-30 years	1	5	6 (0.03)
	more than 30 years	0	2	2 (0.01)
Total		48	192	240

Table 4: Mean, standard deviation, correlation coefficient and significant level, (n=240)

	Mean	Std. deviation	1	2	3	4	5	6	ISP	PSC	PWO
1	2.38	0.93	-								
2	1.34	0.47	.294**	-							
3	2.96	1.95	-.336**	-.262**	-						
4	1.86	1.16	-.230**	-.080	.525**	-					
5	1.28	0.45	.403**	.125	.050	.020	-				
6	1.80	0.40	.072	.115	-.133*	-.125	-.037	-			
ISP	4.67	0.88	.089	-.124	.177**	.137*	.227**	-.074	-		
PSC	6.85	1.57	-.068	-.199**	.133*	.011	.037	-.142*	.454**	-	
PWO	5.44	1.81	-.093	-.167**	.237**	.107	.117	-.082	.465**	.551**	-

Note: **. Correlation is significant at the 0.01 level (2-tailed), *. Correlation is significant at the 0.05 level (2-tailed). 1=education, 2= gender, 3=age, 4=length of services, 5=job designation, 6=accident, Individual safety performance =ISP, SC=safety climate, PWO=psychological safety performance.

SC and ISP, gender is significant with PSC ($r=-0.19$, $p<0.05$) and PWO ($r=-0.16$, $p<0.05$), age demonstrated significant latent variables (ISP=0.17, $p<0.05$, SC= 0.13, $p<0.01$, PWO=0.24, $p<0.05$), length of service shows significant relationship with ISP ($r=0.13$, $p<0.01$), job designation also found to be positively significant correlated with ISP ($r=0.22$, $p<0.05$) and accident established significant negative relationship with PSC ($r=-0.14$, $p<0.01$). PWO substantial correlated with SC and ISP. Where SC was perceived as demonstrating a strong influence from PWO ($r=0.55$, $p<0.05$), fostering a high relationship on ISP ($r=0.45$, $p<0.05$).

The SPSS process were tested from two dependent variables; 1) PWO and PF to PSC as dependent variable 2) PSC to as the dependent variable. The direct path of PSC illustrated in Table 5 significant positively predicted ISP, ($b=0.22$, $S.E=0.028$). Hypothesis 1 is supported, significant ($p < 0.05$) positive coefficients tended to support acceptance of each null hypothesis. The link between PWO and SC is positive and significant indicate by the coefficient 0.47 ($S.E=0.046$, $p<0.05$). Hypothesis 2a is supported, PWO is significantly and positively having a relationship with the ISP. Results showed the direct effect PF (age, length of services, education, gender, job designation and accident experience) to PSC have significant direct effect to the SC (X?M), except length of service not significant effect on PSC. Despite the

non-significant direct effect from length of services to PSC, length of services revealed positive and statistically significant indirect effect on PSC via ISP (standardized coefficient=0.02, $S.E=0.13$, $p<0.01$, $z=1.9$). Overall, hypothesis 3a is partially supported that PF of age, education, gender, job designation and accident experience are significantly influenced PSC.

Results of SPSS process on the indirect effect (X→M→Y) PF and PWO in the relationship of PSC and ISP tabulated in Table 6. The path coefficient of the indirect effect of PWO →SC→ ISP was significant at $b=0.076$, $p<0.05$, $z=6.23$. Hypothesis 2b is fully supporting the indirect path, PWO and the relationship between SC and ISP. The path coefficient of the indirect effect of gender →SC→IS is -0.06 ($S.E=0.10$), $p>0.05$, $z=0.59$. On the other hand, the path coefficient indirect effect of accident experience→ SC→ISP obtained -0.15 ($S.E=0.06$), $p>0.05$, $z=0.14$. Moreover, the mediation effect on PSC found to be significant in the relationship of ages (standardized coefficient=0.02, $S.E=0.13$, $p<0.01$, $z=1.9$), education level (standardized coefficient=-0.03, $S.E=0.11$, $p<0.01$, $z=2.10$) and job designation (standardized coefficient=0.03, $S.E=0.05$, $p<0.001$, $z=3.2$) with ISP. However, the effect of two PF did not significant (gender and accident experience) in prior relationships in Malaysian small enterprise manufacturing. Overall result from the Sobel's z value and 95% bootstrapped confidence interval denote

Table 5: Direct effect testing of the hypothesized model relationships (n=240)

Path	Standardized coefficient	S.E	Significant level
Direct effect			
Age → SC	0.24	0.03	p<0.05
LS → SC	0.01	0.18	-
Education → SC	0.11	0.52	p<0.01
Gender → SC	-0.66	0.19	p<0.01
Job designation → SC	0.12	0.21	p<0.05
Accident experience → SC	-0.55	0.29	p<0.05
PWO → SC	0.47	0.046	p<0.05
SC → ISP	0.22	0.079	p<0.05
PWO → ISP	0.22	0.028	p<0.05

Table 6: Indirect effect testing of the hypothesized model relationships, (n=240)

Path	Indirect effect (S.E)	Sobel test (z)	1000 Bootstrapping 95% C.I.	Significant level
Indirect effect				
PWO → SC → ISP	0.076(0.18)	6.228	[0.413-0.113]**	p=0.00
Age → SC → ISP	0.023(0.13)	1.904	[-0.8x10 ⁻⁴ , 0.052] **	p=0.05
LS → SC → ISP	0.004(0.02)	2.104	[-0.037, 0.047] **	p=0.04
Education → SC → ISP	-0.029(0.11)	2.105	[-0.2, - 0.06] **	p=0.04
Gender → SC → ISP	-0.06 (0.10)	0.598	[-0.2, 0.14]	p=0.54
Job designation → SC → ISP	0.032(0.052)	3.295	[-0.07, 0.13] **	p=0.0003
Accident experience → SC → ISP	-0.15(0.06)	0.149	[-0.3, 0.25]	p=0.88

Note: *p<0.05, **p<0.01, LS: length of service, PSC: psychological safety climate, ISP: Individual safety performance

the indirect effect is statistically significant. Thus, it can be summarized that, the findings of this study indicated that hypothesis 3b is partially supported the entire path model, except for the indirect effect of gender and job designation on the ISP.

DISCUSSION

This study confirms that the relationship between PSC and ISP is generally established in the context of Malaysian manufacturing small enterprise employees. There was variability in the results, depending on which dimension of PSC factors was tested, the specific individual safety performance measures used. A case study has noted the importance of management commitment appear as to be an essential of safety climate that have a significant impact on successful safety performance [54, 87, 88, 89]. Similarly, an exploratory study in global oil and gas industry confirmed that management commitment (safety climate) influence safety performance (b=-0.43, p<0.01) [55]. Forgyaty and Shaw [56] demonstrated that PSC dimensions; group norms (b=0.41) and own attitude (b=0.16) had a strong influence on the violation (ISP) [56]. Furthermore, Christian *et al.* [15] found that group safety climate has a stronger relationship on safety participation than to safety compliance. On the other hand, organizational safety climate and injury relationship, explained 39% of the

injuries variance in those effect sizes with a positive standardized regression coefficient (b=0.62, p < 0.05), but no support for PSC and injury relationship due to unavailable study link prior to this issue [19]. Results of meta-analytic studies found that the mean correlated correlation between safety climate and safety performance (accident rate and accident involvement) was around 0.24 to 0.35 [13, 57, 19]. Therefore, relationships between PSC and ISP in the Malaysian manufacturing small enterprise consistent with majority results from other non-manufacturing industries.

This study has been able to demonstrate direct effect of PWO on SC. These results further support the idea of Zohar [28] in his review article proposed that positive interaction between PWO climate and PSC. Adding to this line of argument, there two empirical studies demonstrated that PWO and PSC statistically significantly correlated, r (90) = .542, n = 92, p = <.001 (2-tailed) [58] and beta = 0.14 (p < 0.01) [26]. A subsequent study by Weatherford [58] summarized three characteristics of nurse professional practice environment (PPE); strong leadership, autonomy and control over the practices of job significantly connected within an organizational climate, which establish PWO climate. Besides that, several researchers indicated that PWO enhance the likelihood to protect object or defend their work environment lead to object protective behavior and encouraging the emergence of PSC [24], [60] is likely to be a key motivation due to the

desire for protecting and maintaining the creditability of owned objects defining one's self, offering an incremental effect on safety behavior [26]. These findings may help us to understand the role of PWO in PSC subsequent effect on ISP in the context of Malaysian manufacturing small enterprise.

PF found to be partially correlated with PSC. These results are consistent with data obtained in Vinodkumar and Bhasi [37], PSC; age and accident experience [40] were found to be influence safety climate score in the chemical industry. These results are in line with those of previous studies. For example, young employee found significantly low in safety climate score it may because of they a relatively begin career at minimum working experience even positive note in respect of the safety attitudes/perceptions and then converge. These results are in agreement with those obtained by Monaco and Williams [59], found that unclear relationship between experience and related ISP of it is a high correlation with age. Contrary to expectations, this study did not find a significant difference of indirect effect accident experience to PSC and ISP. On the other hand, there are some possible explanations for this result. Lee and Harrison [60], claimed accident experience did not increase or reduce safety related attitudes. Nevertheless, these results corroborate the ideas of Vinodkumar and Bhasi [17], who suggested that accident experience negatively correlated with the ISP. Besides that, Surity [8] revealed that, accidents in SME firms relatively uncommon in the smaller number of employees and this may be a factor in the lack of attention given to the safety matter. This combination of findings provides some support for the conceptual premise that PF on SC and ISP.

Finally, the results revealed PSC with respect to PF; age, gender and accident experience, have a significance projection in promoting better PSC, as well as offered incremental prediction of ISP. These results extend the nomological linkage of the organizational climate dimensions as well as proposing that enhancing ISP required effectiveness of the human resources management intervention in encouraging PSC as much as it does on lower level employees. In summary, the effect of PWO and PF has an essential practical role in refining a model that can be used to explain variance in this aspect of ISP.

CONCLUSION

The evidence shows the implement behavior based safety approach successfully in the Malaysian

manufacturing small enterprises. Results supported conceptual framework, indicating that the role of PF and PWO has an essential practical role in encouraging PSC, with subsequent prediction of ISP events mediated by psychological safety climate. Thereby offering recommendations further studies to integrate new antecedence in interactive interaction between of safety climate and individual safety performance.

Limitation: This study was limited to a small enterprise manufacturing from East Coast Region of Malaysia, it's just a small subset of the overall population in small enterprise manufacturing in Malaysia and it is thus representative only of firms in seven districts of the East Coast Region.

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