

SME Business Leaders' Motivations and Barriers in Workplace Safety and Health Leadership

J. Chen¹ and K. C. Tan²

¹Workplace Safety and Health Institute, Singapore

²Ministry of Manpower, Singapore

Abstract. In Singapore, 99% of businesses are small and medium enterprises (SMEs). Business leaders play an influential role in raising workplace safety and health (WSH) standards through their leadership. The aim of the study was to understand SME business leaders' motivations and barriers, and how they influenced their WSH leadership behaviours. Telephone interviews were conducted with 123 participants. SME business leaders' most commonly cited WSH motivations were a concern for their employees' wellbeing and accidents being costly to businesses. Importantly, 22.8% of participants expressed no motivation in WSH. Generally, SME business leaders' WSH barriers were uniformly attributed to a lack of expertise, financial resources, time, and difficulties in encouraging employees' compliance to WSH. SME business leaders who had a motivation to improve WSH in their companies demonstrated significantly greater WSH leadership involvement, as compared to those with no motivation. A significantly higher proportion of SME business leaders who had no motivation in WSH (60.7%) were unaware of the WSH risks in their businesses, as compared to those with a WSH motivation (23.2%). Our findings imply the importance of raising a business leaders' awareness of WSH risks in their business operations if some form of behaviour change is to occur.

1 Introduction

1.1 Small and Medium Enterprises

In Singapore, small and medium enterprises (SMEs) are defined as "businesses with annual sales turnover of not more than \$100 million or employing no more than 200 staff". Today, 99% of businesses in Singapore are SMEs, employing 70% of the workforce and contributing to nearly half of Singapore's gross domestic product (SPRING Singapore, 2014).

Singapore's workplace fatal injury rate was 1.8 per 100,000 employed persons in 2014 (Workplace Safety and Health Institute [WSHI], 2015). While Singapore has not released explicit figures on the proportion of work-related incidents attributable to SMEs, researchers in other countries have established that smaller companies account for higher workplace injury and fatality rates as compared to larger companies (Sinclair & Cunningham, 2014). Policy makers recognise the challenge in raising SME's workplace safety and health (WSH) commitment due to their financial and manpower limitations. Yet, therein lays an opportunity to target SME owners to improve WSH practices and as they often assume multiple roles within the business (e.g. owner, financial manager, human resource manager) and have a shorter decision-to-action line due to their small set-up (Hasle, 2013).

1.2 Leadership in Workplace Safety and Health

Unless championed at the highest levels of an organisation, a pervasive and sustainable change in employees' WSH mindset and practices is almost impossible (Flin, Mearns, O' Connor, & Bryden, 2000). Business leaders decide on the priority of WSH relative to other organisational outcomes, and set the tone for the importance of safety and health in their company. Accordingly, the Health and Safety Executive (HSE, 2010) in the United Kingdom found evidence that director-level leadership for safety and health was associated with

decreased work-injury levels of up to 25% more than companies who did not have management responsibility for WSH.

A key characteristic of strong WSH leadership has been described as the direct involvement of senior management on WSH issues (Flin & Yule, 2004). Although there is limited evidence as to which leadership behaviours are most effective (Martinez-Corcoles, Gracia, Tomás, & Peiró, 2011), those that are visible (e.g. communicating with staff on WSH issues, involvement in site inspections) were asserted as more powerful as they allowed employees to see their leaders' priority and commitment to WSH (Branham, 2010). However, the senior management of larger companies have commonly cited their involvement in oversight roles (e.g. setting the company's WSH policy, monitoring WSH performance, chairing WSH meetings) which are more invisible in nature to employees (WSH Institute, 2012a). It is also important to highlight that majority of WSH leadership research presume an existing management commitment to WSH, such as effective leadership styles and communication (e.g. Griffin & Hu, 2013; Hoffmeister et al, 2014; Törner, 2011). Yet, few studies have explored the antecedents that motivate or hinder senior management's personal commitment to WSH, especially for SMEs.

1.3 Motivations and Barriers Influencing Safety and Health Leadership

Motivation is defined as the process that initiates, directs and sustains goal-oriented or voluntary behaviours (Mitchell, 1982). It is responsible for predicting behaviour by influencing one's choice of action. Research that has explored senior management's motivations in the area of occupational safety and health has largely agreed on the following factors: legal requirements, financial considerations, moral responsibility, and protection of business reputation (Gunningham, 1999; Shearn & Miller, 2005; Wright, Antonello, Norton Doyle, Genna, & Bendig, 2005). It is also important to understand that motivations do not function in isolation, and it is common for an individual to have more than one reason at a time for involvement in WSH (Wright et al., 2005).

The duty to comply with legislation has been evidenced as one of the strongest drivers of senior management's involvement in WSH (O'Dea & Flinn, 2003). Legal requirements were found to motivate employers in two ways, due to a fear of persecution and also an increased awareness and interest in the legislated issue. In Singapore, the Workplace Safety and Health Act places a legal duty on employers to take reasonable and practicable steps to ensure their workers' safety and health. Motivation via financial considerations entails the "safety pays" or "accident costs" arguments (Gunningham, 1999). "Safety pays" refer to investments returns from WSH. However, these are usually longer-term in nature, making it difficult for SMEs to rationalise given their immediate struggle to survive. "Accident costs" on the other hand has been found to have catastrophic implications on an SME's bottomline. A single serious accident can result in business closure from the direct costs of dealing with the incident and the loss of key workers (Moore, 2009). Hence, our study focused on "accident costs" as a potential driver for SME business leaders' involvement in WSH. Moral responsibility to protect the safety and health of employees was another key driver for employers. This was expressed differently for bigger and smaller firms – for the 'larger societal good' by big firms, and a 'personal concern' by SME owners who often know and interact frequently with employees due to their small size and tight knit nature (Shearn & Miller, 2005). Fairman and Yapp (2005) have suggested that SME leaders are less concerned with reputation protection in WSH due to their business' relative lack of prominence in the market. Hence, we have replaced it with business competitors improving WSH as a potential motivation. This is based on the fact that SMEs are highly concerned with their competitors given the tight market and difficult survivability of smaller organisations (Singapore Business Federation [SBF], 2012).

Motivations alone are insufficient to influence behaviours, and are often mitigated or hindered by external factors known as 'barriers' (Mitchell, 1982). Hasle (2013) asserts that SMEs are not small 'big firms' and face unique barriers in WSH as compared to their larger counterparts. Operating within financial constraints, SMEs commonly cite that they are

unable to invest in WSH initiatives and personnel (Surienty, 2012). The lack of dedicated WSH professionals also results in a lack of expertise and SMEs were more likely to find WSH regulations too complex and onerous to comply with (MacEachen et al., 2008). Additionally, SME employers have cited being time poor for WSH in the face of competing business priorities (Moore, 2009). Another common challenge raised by SME leaders was a lack of compliance by their workers to WSH requirements. Wilson and Koehn (2000) found that small business employers tend to attribute poor risk management to individual employees rather than taking the responsibility upon themselves or their company's WSH procedures.

Beyond the influence of motivations and barriers, Wright et al. (2005) emphasised that an awareness and understanding of WSH risks remained the primary determinant of employer action. This argument was based on research findings where employers with the capacity to make WSH improvements did not take action even after internalising the economic costs of incidents. This was due to a lack of awareness of the extent and severity of the WSH risks in their business.

Considering the literature, our study sought to answer these research questions:

- How do SME business leaders demonstrate their involvement in WSH leadership?
- What are SME business leaders' WSH motivations, barriers, and understanding of WSH risks in their companies?
- How do SME business leaders' WSH motivations, barriers, and understanding of WSH risks, influence their involvement in WSH leadership?

2. Method

2.1 Participants and Procedure

The participants were recruited as part of a larger study in 2013 to evaluate the impact of Singapore's bizSAFE programme (<https://www.wshc.sg/bizSAFE>), a national initiative aimed at building WSH risk management capabilities in SMEs. The sampling frame was obtained from a list of workplaces registered with the Ministry of Manpower. A disproportionate stratified sampling was used to sample a higher proportion (70%) of businesses from the three main higher-risk industry sectors of Construction, Manufacturing and Marine, with the remaining 30% from the lower-risk industry sectors classified as 'Others'. This was to address our study's priority with businesses in industries with higher work-related injury rates in Singapore. Representatives from each workplace were randomly selected to participate in telephone interviews in either English or Mandarin. There were a total of 1390 participants with a response rate of 32%.

Our sample comprised of 123 participants selected from the larger study. The margin of error for our sample was estimated to be 8.8%. The inclusion criteria were participants in senior management roles of businesses that employed no more than 200 staff. Senior management roles referred to Company Owners, Chief Executive Officers, Managing Directors and General Managers. We did not account whether participant's businesses had an annual sales turnover of not more than \$100 million, according to Singapore's SME definition, as collection of financial information was deemed too sensitive. The exclusion criterion was participants whose businesses were in the bizSAFE programme to ensure sufficient generalisability of our findings to the SME population who were largely non-bizSAFE. In 2012, bizSAFE had an overall industry penetration of 6.5% in Singapore.

According to industry sector, 27.6% of participants were from Construction, 24.4% from Manufacturing, 14.6% from Marine, and the remaining Others (33.3%) included participants from the Services, Trading, Retail, IT, Design, and Education industries. By establishment size, 56.1% had not more than 10 employees (micro enterprises), 30.9% had 11 to 50

employees (small enterprises), and 9.8% had 51 to 200 employees (medium enterprises). By establishment duration, 30.9% had existed not more than 5 years, 24.4% for 6 to 10 years, 22% for 11 to 20 years, and 20.3% for more than 20 years.

2.2 Materials

Our materials were incorporated into a perception survey used for the bizSAFE evaluation study. The relevant measures are elaborated below.

Five items were used to assess senior management's involvement in WSH leadership. These were derived from the common behavioural indicators cited in WSH leadership guidance materials (e.g. Institute of Directors, 2013; HSE, 2013; WSHI, 2012b) on how business leaders demonstrate their commitment to WSH. Participants were asked, "As senior management, do you do the following?" A 'yes' or 'no' response scale was used. A summed score on all 5 behavioural indicators (maximum score of five for all 'yes' responses) was used to represent each participant's level of involvement in WSH leadership.

Four items were used to assess the WSH motivations of SME business leaders. One item each was used to cover legal requirements, accident costs, moral responsibility and business competitors. Participants were asked, "You are motivated to improve safety and health in your company because..." A five-point Likert response scale ranging from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), to 5 (strongly agree) was used. A higher rating indicated higher agreement that the item was a motivation for the participant. Each item included an N.A (not applicable) response option for participants who may not regard that item as a WSH motivation. An open-ended question "Any other reasons that would motivate you?" was also asked.

Four items were used to assess the WSH barriers of SME business leaders. One item each was used to cover financial costs, lack of expertise in WSH, tight time schedules, and difficulty in getting workers to comply. Participants were asked, "You find it difficult to manage safety and health in your company because..." A similar five-point Likert response scale as WSH motivations was used. A higher rating indicated higher agreement that the item was a barrier for the participant. Each item included an N.A (not applicable) response option for participants who may not regard that item as a WSH barrier. An open-ended question "Any other reasons that hinders you?" was also asked.

Two items were used to assess WSH risk awareness. Participants were asked "Is your company aware of the various safety and health risks present in your workplace?" A 'yes' or 'no' response scale was used. As a counter check measure, a follow-up question required respondents to "Name a common risk found in your workplace." Those who could not answer or gave generic answers such as "accidents" were re-categorised as unaware of their company's WSH risks even if they indicated 'yes' for the earlier question.

2.3 Data and Analyses

Our data for participants' scores on their level of involvement in WSH leadership behaviours (dependent variable) did not meet the following parametric assumptions – significant results were obtained for tests of normality and Levene's tests for homogeneity of variance. Skewed data responses (non-normality) are not uncommon in psychological research especially on moral issues such as WSH, where the tendency for social desirability bias is high (Pallant, 2011). Hence, non-parametric tests using IBM SPSS Statistics 20 were conducted as the assumptions of random sampling and independent observation were met. However, it should be noted that non-parametric tests tend to be less sensitive than their parametric counterparts and may fail to detect differences between groups that actually exist.

3. Results

3.1 Leadership in Workplace Safety and Health

For involvement in WSH leadership behaviours, SME business leaders were most likely to communicate and get feedback from employees on WSH matters (78.9%), conduct regular WSH inspections (77.2%), and monitor the WSH performance of their company (74.8%). They were less likely to set WSH performance targets for their company (59.3%) and attend WSH committees and meetings (53.7%). 47.2% of participants were found to engage in all five WSH leadership behaviours, 15.4% engaged in four behaviours, 8.9% engaged in three behaviours, and 18.7% engaged in none of the WSH leadership behaviours.

3.2 Motivations and Barriers Influencing Safety and Health Leadership

To explore SME business leaders' WSH motivations, the responses for 'strongly agree' and 'agree' to each motivation were summed. Among the 123 participants in our study, concern for employees' wellbeing (72.4%) was the most commonly cited motivation. This was followed by accidents being costly to business (67.5%), compliance with legal requirements (56.9%) and lastly, competitors improving their WSH (47.1%). Unexpectedly, 28 SME business leaders (22.8%) consistently indicated 'N.A.' to all the WSH motivations and did not have any response to the additional open-ended question "Any other reasons that would motivate you?" Of these, 11 participants were from Construction, 8 participants were from Manufacturing, and the rest were from the lower-risk industries classified as 'Others'. As it was a sizeable proportion of our participants, they were inferred as having "no motivation" in WSH, and were used for further analysis. Table 1 shows the distribution of participants' Likert ratings on all WSH motivations.

To explore the relationship between SME business leaders' WSH motivations and their corresponding level of involvement in WSH leadership behaviours, line graphs were first generated. Across all four motivations, visual inspection revealed a similar pattern – participants with no motivation had the lowest scores on their level of WSH leadership involvement. This was followed by those who indicated 'neutral'. Participants who indicated 'strongly/agree' and 'strongly disagree/disagree' generally had similar higher levels of WSH leadership behaviours, hence they were combined. This resulted in four groups – 'strongly agree/agree', 'strongly disagree/disagree', 'neutral', and 'N.A.', for further statistical comparison. For each motivation, Kruskal-Willis tests revealed significant differences ($p < .001$) in WSH leadership scores among the four groups of participants. Table 2 shows the detailed Kruskal-Willis results. Further analyses with Mann-Whitney U tests revealed significant differences only between participants who indicated 'strongly/agree' as compared to those who had no motivation ($p < .008$). Table 3 shows the detailed Mann-Whitney U results.

For SME business leaders' WSH barriers, the responses for 'strongly agree', 'agree', and 'neutral' were summed. 'Neutral' responses were included for a better estimate as we observed a tendency towards the middle response by participants. It is normal for people to choose a neutral option to reflect a tentative opinion especially for socially undesirable questions (Edwards & Smith, 2011). Moreover, our study had included an N.A. response option to prevent participants from choosing the neutral option as a 'dumping ground' (Kulas, Stachowski, & Haynes, 2008). This resulted in a lack of expertise in WSH (63.4%) as the most commonly cited barrier, closely followed by implementing WSH measures being costly (58.5%), difficulty in getting employees to comply (57.7%) and lastly, tight time schedules (53.6%). Table 1 shows the distribution of participants' Likert ratings on all WSH barriers. Moreover, we found that 85.7% of participants who indicated "no motivation" in WSH, also consistently indicated 'neutral' on all WSH barriers.

The relationship between SME business leaders' WSH barriers and their corresponding involvement in WSH leadership behaviours were also first explored using visual inspection of line graphs. Across all four barriers, a similar pattern emerged – participants who indicated 'strongly agree' and 'neutral' had the lowest scores of WSH leadership involvement. Participants who indicated 'agree' and 'strongly disagree/disagree' generally had similar higher levels of WSH leadership involvement. However, as less than five participants had indicated 'strongly agree' across all four barriers, they were combined with the 'agree'

responses to form a group based on similar opinion. For WSH barriers, the following three groups – ‘strongly agree/agree’, ‘strongly disagree/disagree’, ‘neutral’ were used for further statistical comparison. For each barrier, Kruskal-Willis tests revealed significant differences ($p < .001$) in WSH leadership scores among the three groups of participants. Table 2 shows the detailed Kruskal-Willis results. Further analyses with Mann-Whitney U tests revealed significant differences only between participants who indicated ‘strongly/agree’ and ‘neutral’, as well as ‘strongly disagree/disagree’ and ‘neutral’ ($p < .017$). Table 3 shows the detailed Mann-Whitney U results.

Table 1. Distribution of participants’ Likert ratings ($N = 123$)

	<i>n (%)</i>					
	N.A.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
WSH Motivations						
Concern for employees wellbeing	28 (22.8%)	0	1 (0.8%)	5 (4.1%)	44 (35.8%)	45 (36.6%)
Accidents are costly to business	28 (22.8%)	1 (0.8%)	4 (3.3%)	7 (5.7%)	50 (40.7%)	33 (26.8%)
Compliance with legal requirements	28 (22.8%)	1 (0.8%)	10 (8.1%)	14 (11.4%)	48 (39.0%)	22 (17.9%)
Competitors are improving WSH	31 (25.2%)	5 (4.1%)	16 (13%)	13 (10.6%)	48 (39.0%)	10 (8.1%)
WSH Barriers						
Lack expertise in WSH	-	12 (9.8%)	33 (26.8%)	47 (38.2%)	29 (23.6%)	2 (1.6%)
Implementing WSH is costly	-	11 (8.9%)	40 (32.5%)	40 (32.5%)	30 (24.4%)	2 (1.6%)
Difficult to get employees to comply	-	8 (6.5%)	44 (35.8%)	42 (34.1%)	25 (20.3%)	4 (3.3%)
Tight time schedules	-	10 (8.1%)	47 (38.2%)	42 (34.1%)	23 (18.7%)	1 (0.8%)

Table 2. Results of Kruskal-Wallis H Test for Independent Samples

	Mean Rank (Mean) of Involvement in WSH Leadership Behaviours	Kruskal-Wallis H Test (p)
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					value)
	N.A.	Strongly Disagree/ Disagree	Neutral	Strongly Agree/ Agree	
WSH Motivations					
Concern for employees wellbeing	39.14 (1.68)	94.50 (5.00)	61.50 (3.00)	68.85 (4.00)	18.70 ($<.001$)**
Accidents are costly to business	39.14 (1.68)	60.8 (3.60)	55.64 (3.00)	70.32 (4.06)	18.40 ($<.001$)**
Compliance with legal requirements	39.14 (1.68)	70.77 (4.27)	59.04 (3.29)	70.36 (4.04)	18.25 ($<.001$)**
Competitors are improving WSH	43.26 (1.97)	57.00 (3.52)	57.65 (3.31)	74.80 (4.22)	18.85 ($<.001$)**
WSH Barriers					
Lack expertise in WSH	-	74.70 (4.22)	43.27 (2.23)	71.97 (4.13)	23.90 ($<.001$)**
Implementing WSH is costly	-	70.57 (4.10)	43.93 (2.15)	70.94 (4.00)	17.25 ($<.001$)**
Difficult to get employees to comply	-	72.58 (4.15)	44.01 (2.14)	69.09 (4.03)	18.60 ($<.001$)**
Tight time schedules	-	72.42 (4.14)	45.27 (2.24)	66.52 (3.88)	16.42 ($<.001$)**

**Significant at the $p < .001$ level

Table 3. Results of Mann-Whitney U Test for Independent Samples

	Mann-Whitney U Test (p value)					
	Neutral - N.A.	Strongly Disagree / Disagree - N.A.	Strongly Agree / Agree - N.A.	Strongly Disagree / Disagree - Neutral	Strongly Agree / Agree - Neutral	Strongly Disagree / Disagree – Strongly Agree / Agree
WSH Motivations						
Concern for employees wellbeing	51.50 (.277)	4.50 (.345)	634 ($<.001$)**	1.50 (.667)	202.50 (.716)	22.50 (.511)
Accidents are costly to business	69.50 (.181)	37.00 (.064)	583.50 ($<.001$)**	16.00 (.799)	219.00 (.242)	167 (.427)
Compliance with legal requirements	129.50 (.051)	76.50 (.009)	484.00 ($<.001$)**	61.00 (.355)	398.00 (.230)	382.00 (.964)
Competitors are improving WSH	143.50 (.107)	222.00 (.043)	479.50 ($<.001$)**	135.00 (.972)	264.00 (.060)	399.00 (.011)
WSH Barriers						
Lack expertise in WSH	-	-	-	520.00 ($<.001$)**	385.50 ($<.001$)**	663.50 (.685)
Implementing WSH is costly	-	-	-	562.50 ($<.001$)**	374.50 (.001)**	795.50 (.833)
Difficult to get employees to comply	-	-	-	585.50 ($<.001$)**	360.00 (.002)**	710.50 (.637)
Tight time schedules	-	-	-	672.00 ($<.001$)**	326.50 (.013)**	615.00 (.433)

**Significant at the $p < .008$ level, with Bonferroni correction for comparison of 6 groups for WSH motivations, and significant at the $p < .017$ level, with Bonferroni correction for comparison of 3 groups for WSH barriers

In terms of WSH risk awareness, 79.9% of participants indicated that they were aware of the WSH risks present in their companies. However, the counter-check question resulted in 12 participants being re-categorised as unaware, as they were unable to answer or provided a generic response such as “accidents”. This resulted in 68.3% of SME business leaders in our study being aware of the WSH risks in their companies.

Mann-Whitney U tests revealed no significant differences in WSH leadership involvement between SME business leaders’ who were aware of their WSH risks and those who were unaware. We conducted further analysis using Chi-square tests for independence to test if there was any difference in WSH risk awareness between SME business leaders who had some form of WSH motivation with those who had no motivation. This revealed a significant difference in WSH risk awareness between groups ($\chi^2 (1, n=123) = 12.41, p < .001, phi =$

.34). In particular, 60.7% of SME business leaders in the unmotivated group were unaware of their WSH risks, whereas only 23.2% in the motivated group were unaware.

3.3 Size and Duration of Establishment

We also explored if there were any differences in SME business leaders' WSH leadership involvement based on the size and duration of their establishment. With larger establishment size, the mean rank of WSH leadership involvement was greater. The mean rank was 54.25 for micro enterprises, 64.41 for small enterprises, and 79.13 for medium enterprises. Kruskal-Willis tests revealed significant differences ($H(2, n=119) = 7.01, p = .030$) in WSH leadership involvement by establishment size, but further Mann-Whitney U comparisons found no significant differences. With longer establishment duration, the mean rank of WSH leadership behaviours was also greater. The mean rank was 51.66 for those existing up to 5 years, 56.17 for 6 to 10 years, 65.54 for 11 to 20 years, and 73.70 for more than 20 years. Kruskal-Willis tests revealed significant differences ($H(3, n=120) = 7.99, p = .046$) in WSH leadership involvement by establishment length, but further Mann-Whitney U comparisons found no significant differences.

4. Discussion

Our study found that SME business leaders were more likely to be participative, hands-on, and informal in their WSH leadership approach. Their common WSH leadership behaviours included communicating with their workers on WSH matters and personally conducting site inspections. In contrast, senior management of larger companies seldom conducted WSH site visits, probably due to the large establishment size and fragmented worksite locations. Unlike the employers of larger companies in an earlier study (WSHI, 2012a), SME owners were less likely to engage in oversight, strategic, and formal leadership roles such as setting the company's WSH policy and targets, and chairing WSH meetings. This form of WSH leadership style is likely similar to how SME owners run their businesses, more informal and participative, and less systematic than the management of larger organisations (Lancaster, Ward, Talbot, & Brazier, 2003).

In the present study, SME business leaders' most commonly cited WSH motivation was due to a concern for their employees' wellbeing. This was consistent with Wright et al. (2005) who explained that SME owners run their business like a family and know their workers on a personal basis. In contrast, previous studies with employers of larger companies found their main driver to be legal compliance (Gunningham, 1999; O'Dea & Flinn, 2003). However, this was only true for approximately half of the SME business leaders in our study. A reason could be that SMEs have poorer knowledge and understanding of how the WSH regulations apply to their business due to a lack of dedicated safety and health professionals (Hillage, Tyers, Davis, & Guppy, 2001). Another possibility is the rare likelihood for an SME to be inspected due to their sheer numbers (99.9% of businesses in Singapore are SMEs). Johnstone (2003) found that larger companies' management priorities shifted to comply with WSH regulations only after enforcement visits were conducted. Majority of SME leaders also indicated that the cost of accidents was a motivation for them to improve WSH in their companies. Although there has been conflicting evidence on the business case influencing employer action (Rundmo & Hale, 2000), it could be that our participants had a greater appreciation of an accident's business impact as majority were from the higher-risk industries. Business competitors' involvement in WSH was the least cited motivation by SME leaders. This was surprising given that SMEs are highly concerned with their competitors for business profitability and survival. It could be due to a perception that WSH does not provide a competitive business advantage, or the belief that many SME competitors do not sufficiently prioritise WSH, thus impeding change rather than motivating it. More importantly, 22.8% of participants were found to have no motivation to lead WSH in their companies.

However, our study showed that as long as SME business leaders had internalised any form of motivation to improve WSH, they demonstrated greater involvement in WSH leadership behaviours than those who consistently cited no motivation in WSH. This means that there could be multiple pathways to motivate SME owners to take action, and it is crucial not to dismiss the effectiveness of any motivational factors that can influence behaviour. Rather, less cited motivational pathways should be enhanced to maximise their potential in effecting behavioural change.

In general, SME business leaders uniformly attributed their WSH barriers to a lack of expertise, financial resources, time, as well as difficulties in encouraging employee compliance to WSH. Our findings echoed previous studies (e.g. Fairman & Yapp, 2005; MacEachen et al., 2008; Moore, 2009) that SMEs face many barriers in WSH implementation. However, we found that SME employers who knew their WSH barriers ('strongly agree/agree' or 'strongly disagree/disagree') had a significantly greater involvement in WSH leadership behaviours than those who were unsure ('neutral') about the WSH barriers they faced. This was surprising as we had anticipated that leaders who faced barriers would be less involved in WSH leadership behaviours. But it is plausible that these SME owners were already committed to improve WSH in their companies, and hence were facing challenges along their WSH journey. This finding highlights the importance for policy makers and WSH professionals to focus their efforts on engaging a group of SME business leaders who appear to be ambivalent towards the issue of WSH in terms of both their motivations and barriers, and thus less likely to lead WSH in their companies.

In our study, 68.3% of SME business leaders were aware of the WSH risks in their companies. This is similar to a study by Hillage et al. (2001) who found that 70% to 80% of employers were aware about WSH. We found no direct influence of WSH risk awareness on SME employers' level of WSH leadership involvement. However, we did find that SME business leaders who had no motivation were three times more likely to be unaware of their company's WSH risks. Moreover, these leaders without motivation were also significantly less involved in the WSH leadership of their enterprises. This significant finding is aligned to the general behavioural literature that a motivational process cannot be initiated until a certain awareness of the need to change has emerged (Renner & Schwarzer, 2005). Contrary to Wright et al.'s (2005) finding that awareness of WSH risks was a precursor to employer action even after motivations were internalised, we found that this awareness could even be the precursor for a leader's WSH motivation to exist. This raises the question of whether WSH risk awareness plays a moderating or mediating role between motivation and behavioural change. Nonetheless, it reiterates the importance of raising a business leader's awareness of WSH risks in his/her business operations if some form of change is to occur. Fairman and Yapp (2005) have also stressed that risk awareness does not refer to the mere knowledge of workplace hazards, but recognising and internalising that these hazards will pose serious consequences and outcomes if changes are not made. In relation, SMEs have been found to underestimate the seriousness of WSH risks, and hence take a laissez-faire approach in dealing with them (Lansdown, Deighan & Brotherton, 2007).

As expected, with increasing size and length of establishment, we found greater levels of WSH leadership involvement by SME business leaders. Consistently, Lancaster et al., (2003) found that larger organisation were more likely to implement the various components of an occupational safety and health management system. In contrast, micro and small have cited frustration with setting WSH performance targets and having a formal structure for performance updates to directors, attributed to the relative infrequency of incidents. A plausible reason for younger SMEs placing less priority on WSH could be attributed to their primary focus on business survival (Holmes, 1999). In Singapore, the survival rates of SMEs were 62% to 75% in their third year, and only 48% to 55% in their fifth year (SBF, 2012). This could result in younger SMEs shifting WSH to the backseat as benefits are usually long-term in nature and 'invisible' i.e., the absence of accidents and ill-health.

4.1 Limitations

There are several limitations to this study. First, there is a high likelihood of social desirability in participant responses. This is to be expected for a moral issue that concerns workers' safety and health. However, we found that using a counter-check measure to determine participants' awareness of WSH risks was useful in mitigating social desirability to some extent. It may be necessary to develop more counter-check measures where possible or even a social desirability scale for future WSH studies. Second, most of our constructs were composed of one-item measures describing each type of motivation and barrier. This limits our ability to assess participants' level of motivation, and explore the relationship with corresponding WSH leadership involvement. The use of one-item Likert measures to assess our study's independent variables (WSH motivations, barriers, and risk awareness) also disallows the use of predictive techniques e.g. regression, on how these variables influence WSH leadership involvement. Wanous, Reichers, and Hudy (1997) have also cautioned on the use of one-item measures as they are less valid and reliable in measuring a construct. Nonetheless, there is a need to be mindful of SME leaders who are time constrained and may not participate in long questionnaires. Third, we did not explore the influence of supply chain pressure as a motivation for SME business leaders to improve WSH. This has been increasingly advocated and used effectively (James, Johnstone, Quinlan, & Walters, 2007). However, Singapore's bizSAFE programme already leverages on a supply chain mechanism and therefore we were focused on exploring the other WSH motivations of SME employers. The study's main strength is the focus on SME business leaders whom are rarely studied in WSH research, especially in the Asian context. Hence, this study is one of the first to provide insights into the factors that influence SME business leaders in their leadership of safety and health in their businesses. We elaborate on three key implications derived from our findings.

4.2 Implications

The first implication is a need to speak the SME's language in the types of WSH leadership behaviours that they can integrate into their everyday operations. SME owners and managers often have the opportunity to be on the shopfloor and observe their employees' work behaviours regularly (King, Lunn & Michaelis, 2010). Therefore WSH initiatives targeted at SME leaders should focus on encouraging participative leadership roles. This could involve acting as personal role models in WSH, communicating safe work procedures, and conducting site inspections to encourage safety behaviours. Such WSH leadership behaviours may be more useful to an SME than taking on strategic actions such as developing a policy statement which may be taken as a paper exercise. Future research could explore the types of WSH leadership behaviours that SME owners and managers can integrate into the way they conduct business on a regular basis.

The second implication is to understand the presence of two groups of SME business leaders in WSH, the 'non-motivated' and 'motivated' that may require distinct interventions. Our study found that it may be crucial for SME leaders to internalise certain risk awareness before a motivational process can begin to influence behaviour. This is aligned with the Stages of Change Model (Prochaska & Norcross, 2001) where behaviour change starts with pre-awareness and occurs through a progression of five stages¹. Similarly, Lansdown et al. (2007) simplified the model and identified two broad groups of SME leaders in their study, recommending different engagement strategies for each. The first 'pre-contemplation' group was not considering change and perceived the costs of WSH commitment to be high – similar to the 'non-motivated'. For this group, messages that highlighted the 'negative' impact of non-compliance (e.g. accident narratives) were more effective in raising risk awareness and motivation to change. The second 'maintenance' group was already engaged in the

¹ The first stage is called the 'pre-contemplation' stage where change is not considered if one is not informed or under informed about the consequences of existing behaviour (unaware of risk). This leads to the stages of 'contemplation' and 'preparation' before taking 'action' to make the change. The final stage is the 'maintenance' stage, in which an individual is committed to the change, and efforts are taken to prevent a relapse to earlier stages.

change – similar to the ‘motivated’. For this group, it was recommended that messages highlighted the ‘benefits’ of WSH to sustain motivation, and resources (e.g. funds, collaterals) provided to overcome barriers and maintain behaviour change. Future research could explore further the effective kinds of WSH messaging to target SMEs at different stages of commitment.

The third implication is to recognise that the size and duration of existence of an SME can be important factors influencing an SME’s readiness to commit to WSH. In Lancaster et al.’s (2003) report, the United Kingdom estimated that WSH can cost £341 per employee for micro and small enterprises, but only £37 per employee for medium and large enterprises due to economies of scale. Newer enterprises also reported greater frustrations with implementing WSH due to a lack of financial and time resources, as well as accessible information and guidance, while trying to establish their business at the same time. Hence, there is a need for policy makers to allocate special attention and assistance to smaller and younger SMEs who may be facing a greater burden of WSH compliance. Future research could identify the different needs of SMEs according to size and duration of existence, and tailor WSH solutions accordingly.

In conclusion, it is our hope that the findings and recommendations of this study can be a start to improving WSH in small establishments through evidence-based insights and recommendations.

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