International Journal of Management and Sustainability
2024 Vol. 13, No. 1, pp. 76-90
ISSN(e): 2306-0662
ISSN(p): 2306-9856
DOI: 10.18488/11.v13i1.3600

Exploring environmental sustainability practices in MSMEs: Insights from Malaysia

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Article History
Received: 1 August 2023
Revised: 15 November 2023
Accepted: 27 December 2023
Published: 12 January 2024

Keywords
Environmental sustainability
Green human resource management
Green knowledge sharing
Malaysia
Micro small and medium enterprises
Pro-environmentally practices.

ABSTRACT

The purpose of this research is to assess the current implementation level of environmental sustainability practices, including green human resource management and green knowledge sharing among Malaysian micro, small, and medium enterprises (MSMEs). The practices investigated are also supported by ways of determining how MSMEs are motivated to implement them and what constraints inhibit such practices. This is a descriptive study, and the MSME (organization) is the unit of analysis, and the owner or manager is the target of the respondent. A total of 300 questionnaires were disseminated to Malaysian MSMEs by using convenient sampling, and the response rate was 48.7%. Overall, the findings reflect the moderate sustainability implementation level of MSMEs. This demonstrates a positive and proactive stance towards environmental sustainability among MSMEs. However, cost reduction and efficiency were reported as the most significant motivators, while lack of support and information from the government as well as social influence were reported as the main constraints. This study provides meaningful insights on pro-environmental practices, green knowledge sharing, and green HRM in improving sustainability practices in MSMEs. MSMEs that voluntarily see sustainability challenges as business opportunities might be ahead of regulations and could draw benefits from this position. The findings also help MSMEs frame their green activities to drive their business capability of creating and retaining greater value in their core business competencies and competitiveness.

Contribution/Originality: This paper provides a detailed descriptive study of the implementation level of pro-environmental behaviors, including benefits and barriers, as well as green knowledge sharing and green HRM practices in micro, small, and medium enterprises in Malaysia.

1. INTRODUCTION

The need to incorporate sustainability into business operations has become inevitable, with the increasing impact of climate change evident in rising sea levels, extreme weather and disruptions, and attendant effects on human livelihood, communities, and national economies (Chandio, Jiang, Rehman, & Rauf, 2020). Thus, sustainable performance has become a factor in competitiveness (Michaud, 2019; Severo, De Guimarães, & Dellarmelin, 2021), with firms realizing that it is critical for them to address environmental and social issues in order to secure their business sustainability. While most of the existing environmental studies were emphasized from the perspective of

large organizations (Singh & Misra, 2021; Westman et al., 2019), it is also crucial to examine the collective environmental impact of micro-,small-,medium enterprises (MSMEs) (Aboelmaged & Hashem, 2019; Broccardo & Zicari, 2020; Erdin & Ozkaya, 2020; Purwandani & Michaud, 2021; Topleva & Prokopov, 2020), as the estimated environmental impact could outweigh the large organizations.

In Malaysia, MSMEs play a critical role in both the national and regional economies. They constitute approximately 99% of all business establishments in Malaysia, contributing 38.3% to the Gross Domestic Product (GDP) and about 70% of employment (SME Corp Malaysia, 2021). As a result, organizations should not underestimate the potential social and environmental impacts of MSMEs. However, the concept of environmental sustainability is not very well researched within the context of MSMEs. There is less focus on environmental management best practices, enabling MSMEs to simultaneously protect the environment and enhance performance by reducing operational costs (Kraus et al., 2020). Hence, MSMEs face challenges in linking environmental sustainability practices with their benefits (Bartolacci, Caputo, & Soverchia, 2020; Chege & Wang, 2020).

Furthermore, unlike larger firms, MSMEs normally have fewer strategic connections with their communities; hence, their owners and managers are less inclined to implement pro environmental practices, which is difficult for them to convert into action even if they have positive environmental attitudes (Zhu, Zou, & Zhang, 2019). Many of them ignore environmental issues and do not think they are responsible for the environment (Kornilaki, Thomas, & Font, 2019; Severo et al., 2021). Furthermore, environmental sustainability management practices widely recognized by large organizations may not be relevant to MSMEs since MSMEs normally lack the resources, data, technical skills, expertise, and experience to implement these practices (OECD, 2021). A recent report from the Organisation for Economic Co-operation and Development (OECD) (OECD, 2021) highlighted the challenges faced by smaller firms in their greening efforts, even though such efforts are created in the pursuit of sustainable development. This is because most MSMEs are more focused on survival issues as well as daily operations issues such as paying wages and regular expenses.

MSMEs are essential to economic growth, but they should not be allowed to become a loophole in which non-sustainable practices flourish. Hence, there is a need to investigate the engagement of MSMEs in sustainable environmental implementations and their owners or managers perceptions of the benefits and barriers of implementing these practices. One of the main benefits of investing in sustainable environmental management is better employees' outcomes, which could be stimulated through their engagement in pro-environmental behaviors (PEBs). Employees play a crucial role in ensuring sustainable environmental performance through their engagement in PEBs. Thus, to sustain positive environmental outcomes, organizations must deploy green human resources management (HRM) practices to encourage and facilitate PEBs (Ojo, Tan, & Alias, 2022). Green goals, green training, and green appraisals evaluating employees' contribution to the firm's environmental efforts are essential to achieving sustainable corporate goals (Karatepe, Rezapouraghdam, & Hassannia, 2020; Li, Wu, & Patwary, 2022). However, many of the related studies are still at the theoretical stage, and PEB practices are still at the infant stage (Fayyazi, Shahbazmoradi, Afshar, & Shahbazmoradi, 2015). Thus, more detailed studies of green human resource management (GHRM) practices and their contribution to sustainable performance, especially in the context of MSMEs, are critical (Yusoff, Nejati, Kee, & Amran, 2020).

Studies have further argued that green knowledge sharing can improve PEBs (Rubel, Kee, & Rimi, 2021; Stahl, Brewster, Collings, & Hajro, 2020). Green knowledge sharing refers to the acquisition and transfer of green knowledge to other employees while learning from each other in their organizations (Foss, Minbaeva, Pedersen, & Reinholt, 2009; Lin & Chen, 2017). This can assist both the sharer and the recipient of knowledge to enhance their learning and skills related to environmental issues (Chang & Hung, 2021).

Thus, this sharing practice can help to motivate employees to enhance their green commitment by engaging more in creative activities and stimulating their critical thinking (Abukhait, Bani-Melhem, & Zeffane, 2019; Song,

Yang, Zeng, & Feng, 2020), which would help to drive green HRM practices (Ahmad et al., 2023). As a result, green knowledge sharing has attracted popular attention, both from academics and practitioners.

Drawing insights from the above, this study examines the current implementation level and the motivators and barriers to implementing sustainable environmental practices from the perspective of owners and managers. Also, the extent of implementations of GHRM and green knowledge sharing that could enhance MSMEs' effectiveness in environmental sustainability management was addressed. With this, it helps to support the capacity development and careful management of sustainable practices among Malaysian MSMEs.

2. LITERATURE REVIEW

Sustainable environmental practices refer to any environmental activities initiated by organizations to reduce their operations impact on the environment (Kassim, 2023; Sendawula, Bagire, Mbidde, & Turyakira, 2021; Wang et al., 2021). Examples are recycling, conserving energy and resources, reducing waste, creating eco-designed products and processes, or advocating eco-friendly behaviours (Canova & Manganelli, 2020; Graves & Sarkis, 2018; Saeed et al., 2019). Nevertheless, as pointed out by Yusop and Adam (2021), the main challenge is how organizations should be responsible and how they should incorporate environmental concerns into their strategic organizational decision-making (Fawehinmi, Yusliza, Mohamad, Noor Faezah, & Muhammad, 2020; Saeed et al., 2019). According to Khatri and Metri (2016) and Hami, Yamin, Shafie, Muhamad, and Ebrahim (2018), many MSMEs have not perceived the environment as their business problem due to small impacts. They often do not have the time to consider environmental issues. Many of them have very poor awareness and a low level of ecoliteracy. Furthermore, they may consider these activities a cost burden, as they believe the cost cannot be passed on to their customers. Hence, practicing environmental improvements was not practical or economically expedient for MSMEs. As such, many small firms were less motivated to translate their environmental attitudes into behavior.

Previous studies in Malaysia have reported preliminary findings on the motivators and challenges faced by small and medium enterprises (SMEs), but mostly based on case studies of manufacturing SMEs (Bakar, Talukder, Quazi, & Khan, 2020; Hami et al., 2018; Hossain, Siwar, Jani, & Bhuiyan, 2013; Nejati & Amran, 2013). Hossain et al. (2013) found that corporate social responsibility (CSR) is essential in building the brand image and reputation of SMEs among customers in the global arena. Nejati and Amran (2013) examined the perceptions of owners and managers of SMEs operating in the northern states of Malaysia towards CSR and determined that the majority of them considered their investment in CSR as a cost. Other studies, i.e., Loke, Khalizani, Rohati, and Sayaka (2014); Ghazilla et al. (2015), Hassan, Yaacob, and Abdullatiff (2014) and Hami et al. (2018) have explored the sustainable environmental practices among manufacturing SMEs in Malaysia. As the manufacturing sector accounts for 21.7%, as compared to the service sector, which accounts for 58.8% of all SMEs in Malaysia (Department of Statistics Malaysia, 2022), the need for further studies to better reflect MSMEs in Malaysia is appropriate. Equally, Bakar et al. (2020) investigated the adoption of sustainable technology among SMEs by looking at the government role, and Baskaran, Chandran, and Rajaghantham (2023) described the incentives, motivators, and challenges in environmental practices among Malaysian SMEs. However, these studies have limited scope as they were more focused on the government's role and policy reporting. Accordingly, Yusop and Adam (2021) asserted that there were limited studies in Malaysia, specifically on the motivators to encourage employees to practice PEBs at the workplace, and this warranted further investigation.

On the other hand, there are studies on Malaysian SMEs attitudes towards sustainable practices, but there is a lack of comprehensiveness and details of such practices among MSMEs. Specifically, the extent to which MSMEs are engaged in underlying practices such as energy and water-saving measures, involvement in recycling and recyclable products, use of environmentally friendly or natural products, and green operation. These categories

were recently reported as best practices, and they are important to be integrated into operations for sustainability in MSMEs (Low, 2023).

3. METHODOLOGY

This study is a comprehensive descriptive study that examines the details of PEB implementation levels with reference to the five best practices that are critical to be integrated into operations for sustainability. In addition to the existing studies on the manufacturing sector, we investigated the current implementation of sustainable environmental practices among a sample of MSMEs in services and other sectors in Malaysia. This can be categorized according to their sales turnover and number of full-time employees (SME Corp Malaysia, 2021). The small enterprises have an annual turnover of between Ringgit Malaysia RM 300,000 and RM3 million or full-time employees from 5 to less than 30, while sales turnover from RM3 million to not exceeding RM30 million, or full-time employees from 30 to not exceeding 75 is considered medium enterprises. The target respondents were the MSMEs' owners or managers who provided their responses to relevant questions included in the survey. Malaysian MSMEs are categorised by the size of their enterprises. To enhance the participation rate, five research assistants were appointed in data the collection process, and convenient sampling was used. The unit of analysis was business, as only the owner or manager was targeted as a respondent.

300 copies of questionnaires were distributed to MSMEs located in Selangor. Selangor was chosen as about 20% of MSMEs were registered in Selangor (SME Corp Malaysia, 2021). About 146 responses, 48.7% of the response rate were received. Table 1 shows the demographic profiles of the MSMEs as well as the respondents. The cover page of the questionnaire included the privacy statement and consent to participate in the research. A RM5 Shopee voucher was given to the respondents to motivate their participation.

There were seven sections in the questionnaire. Profiles of respondents, including demographic and organizational characteristics, were included in the first section. This is followed by measurements on pro-environmental behaviour in the workplace using a Likert scale. Third section was made up of 25 questions intended to measure the implementation level in 6 different categories, i.e., energy consumption, recycling and recyclable products, water-saving measures, use of environmentally friendly products, and green operation or process, by using a scale ranging from 1 (always) to 5 (never implemented). These categories are examined as they were reported as best practices for sustainability in MSMEs (Low, 2023). Section four contains 14 items on benefits, while section five covers 11 obstacles to implementing PEB using a scale of 1 (strongly agree) to 5 (strongly disagree). These questions were adopted from numerous works of literature (Brouthers, Nakos, & Dimitratos, 2015; Menguc & Ozanne, 2005; Parry, 2012; Szczepańska-Woszczyna & Kurowska-Pysz, 2016). Finally, sections six and seven comprise 5 questions each for green knowledge sharing and green HRM implementation.

Next, a pre-test was administered to check for the validity, appropriateness, and comprehensiveness of the content, especially in the Malaysian context. 10 owners and managers were selected, and minor improvements were made. The alpha coefficients are above 0.70 (Sekaran, 2003), and thus they fulfil the reliability and face validity of the instruments. 37.7% of the MSMEs came from medium enterprises, 32.2% from small enterprises, and 30.1% from micro enterprises. Majority of them are private limited companies (56.8%), followed by sole traders (25.3%) and partnerships (17.8%) with more than 20 years (34.2%), 1-2 years (18.5%), and 6-10 years (18.5%). Most of them are local companies (78.1%) and non-family-owned businesses (71.9%).

In terms of respondents, about 54.1% of them are owners or senior management, and 65.8% have degree qualifications in their firms. Table 2 shows the details.

4. FINDINGS

Table 2 shows the implementation level of PEB in the workplace. It shows that people working in MSMEs always "encourage each other to be more environmentally responsible" (mean 4.12), followed by "enjoying

practicing PEB behaviour" (3.95), "adopting more PEB behaviour" (3.87), and "being proactive in engaging in relevant PEB" (3.79). The overall mean value is 3.93, and this indicates that the respondents are quite common in practising PEB at the workplace.

Table 1. Demographic profiles.

Profile	Frequency	Percent	Profile	Frequency	Percent
Age of company			*Current position*		
• 1-2 years	27	18.5	• Senior management / Owner	79	54.1
• 3-5 years	19	13	• Managerial / Supervisory	67	45.9
• 6-10 years	27	18.5			
• 11-15 years	9	6.2	*Family owned business*		
• 16-20 years	14	9.6	• Yes	41	28.1
• > 20 years	50	34.2	• No	105	71.9
Highest qualification			*Local company*		
• Secondary level	7	4.8	• Yes	114	78.1
• Diploma/Certificate	26	17.8	• No	32	21.9
• Degree	96	65.8			
• Master	15	10.3			
• Doctoral	2	4.8			
Type of company			*Category of enterprise*		
• Sole trader	37	25.3	• Micro	44	30.1
• Partnership	26	17.8	• Small	46	32.2
• Private limited company	83	56.8	• Medium	55	37.7

Table 2. Pro environmental behaviour (PEB) at workplace.

We always….	Mean	Standard deviation
Enjoy practicing environmentally friendly behaviours	3.95	1.053
Very proactive in engaging in relevant PEB	3.79	0.998
Adopt more environmentally conscious behaviour	3.87	1.012
Encourage each other to be more environmentally responsible	4.12	0.939
Group average	*3.93*	

Table 3 shows the degree of implementation of energy consumption practices in MSMEs. Approximately 93.8% of the respondents reported that they "turn off electricity when not in use." This is followed by 86.3% of them who state that they "use energy-saving lights." About 77.4% of them "take the stairs instead of the elevator," while 72.6% are "working from homes." The least implemented practice is "using renewable energy" (46.5%).

Table 3. PEB implementation: Energy consumption.

Categories						
Degree of implementation 1. Never 2. Rarely 3. Sometimes 4. Very often 5. Always						
No.	Energy consumption	Percentage (%)				
	(My company….)	1	2	3	4	5
1.	Use energy saving lights	4.8	8.9	30.1	26.7	29.5
2.	Turn off electricity when not in use	7	5.5	15.1	30.1	48.6
3.	Telecommute (Work from home)	15.1	12.3	25.3	22.6	24.7
4.	Take the stairs instead of the elevator	12.3	10.3	28.8	22.6	26
5.	Use renewable energy (e.g., rooftop solar)	41.8	11.6	21.9	12.3	12.3

Table 4 shows the degree of implementation of recycling and recyclable products in MSMEs. Approximately 95.9% and 90.4% of the respondents reported that they do "printing on both sides of paper" and "reuse the carton boxes for different purposes." Almost 80.8% of them "recycle old office furniture and equipment." 77.3% of them have a "specific area for recyclable disposal." While 72.2% of them "buy second-hand office equipment when possible," all of the items have more than 70% usage, and this shows that the implementation of recycling and recyclable products is quite popular among MSMEs.

Table 4. PEB implementation: Recycling and recyclable products.

Categories						
Degree of implementation 1. Never 2. Rarely 3. Sometimes 4. Very often 5. Always						
No.	Recycling and recyclable products	Percentage (%)				
	(My company….)	1	2	3	4	5
1.	Print on both sides of the paper	3.4	7	19.2	30.8	45.9
2.	Have specific area for recyclables disposal	11.6	11	21.2	21.2	34.9
3.	Recycle old office furniture and equipment	11.6	7.5	28.1	26.7	26
4.	Reuse carton boxes	4.1	5.5	14.4	34.9	41.1
5.	Buy second-hand office equipment when possible	13.9	13.9	31.3	19.4	21.5

Table 5 shows the degree of implementation of water-saving measures. The most common practise measure is to "conduct regular checks for leaks and fix them immediately" (86.3%). This is followed by having "auto water tap" (54.2%), "water recycling and reusing" (53.7%), and the least implemented is "rain harvesting" (37.5%).

Table 5. PEB implementation: Water saving measures.

Categories						
Degree of implementation 1. Never 2. Rarely 3. Sometimes 4. Very often 5. Always						
No.	Water saving measures	Percentage (%)				
	(My company….)	1	2	3	4	5
1.	Auto water tap	31.9	13.9	17.4	17.4	19.4
2.	Water recycling and reusing	27.6	18.6	23.4	17.2	13.1
3.	Rain harvesting	45.8	16.7	15.3	13.2	9
4.	Regular check for leaking and fix immediate	5.5	8.2	25.3	31.5	29.5

Table 6 demonstrates the degree of implementation of the use of environmentally friendly or natural products among MSMEs. 81.4% of the MSMEs reported that they "use refillable stationary." About 78.6% of them "use micro-fiber clothes instead of paper towels", and 77.4% of them reported that they "use non-toxic cleaning products to tidy up the office," followed by 73.9% reporting to "decorate the office with real plants instead of plastic décor." The least implemented practice is the "use of hand dryers instead of paper towels" (57.9%).

Table 7 shows that the majority of respondents (85.7%) "use digital documentation for their operations". Almost 81.5% of them are "supporting the green vendors," followed by "encouraging sustainable transportation" (71.2%). However, only 62.7% of them practice "forming a specific taskforce," and 56.5% reported "organizing green activities to preserve the environment" in their organizations. The least implemented activity is to "reward the eco performers at the workplace" (50.7%).

Table 6. PEB implementation: Use of environmentally friendly or natural products.

Categories						
Degree of implementation 1. Never 2. Rarely 3. Sometimes 4. Very often 5. Always						
No.	Use of environmentally friendly or natural products	Percentage (%)				
	(My company….)	1	2	3	4	5
1.	Decorate office with real plants instead of plastic decors	16.4	9.6	23.3	20.5	30.1
2.	Use refillable stationary	10.3	8.2	25.3	35.6	20.5
3.	Use hand dryers instead of paper towels	26.9	15.2	24.1	19.3	14.5
4.	Use non-toxic cleaning products to tidy up the office	11.6	11	36.3	23.3	17.8
5.	Use micro-fibre clothes instead of paper towels	10.3	11	26.2	33.8	18.6

Table 7. PEB implementation: Green operation / Process.

Categories						
Degree of implementation 1. Never 2. Rarely 3. Sometimes 4. Very often 5. Always						
No.	Green operation / Process	Percentage (%)				
	(My company….)	1	2	3	4	5
1.	Use digital documentation (e.g. paperless recruitment)	4.1	10.3	27.4	33.6	24.7
2.	Support green vendors, (e.g. find eco-friendly business card provider)	7.5	11	34.9	28.8	17.8
3.	Form a specific taskforce to preserve the environment	25.5	11.7	31.7	17.9	13.1
4.	Organise green activities (e.g. host plastic-free lunch days or meatless Monday)	34.5	9	25.5	17.2	13.8
5.	Encourage sustainable transportation	19.2	9.6	31.5	21.9	17.8
6.	Reward top eco-performers at work	36.3	13	24	17.1	9.6

In addition, the PEB effectiveness index is calculated to examine the degree of implementation of the five categories of PEB. This index is adopted from Coukos (2001) in his national survey on knowledge management processes and strategies in research universities and Chong and Chong (2009) in KM process implementation. A mean rating for each PEB category is calculated by taking the average of the means of all the items related to that category. A higher mean rating indicates that the particular category is more implemented as compared to other categories. The PEB effectiveness index, which indicates the overall substantiation of PEB implementation, is developed by totalling the mean of all five PEB categories and divided by 25 (i.e., the maximum total score). As indicated in Table 8, the PEB effectiveness index score is 0.649. Hence, it can be concluded that overall, PEB practices are implemented by MSMEs on a moderate scale. All of the PEB categories are moderately implemented, with mean values above 3.0, except for the water savings measure. Recycling and recyclable products appear to be the most implemented category, followed by energy consumption and the use of environmentally friendly or natural products.

Table 9 shows the drivers for MSMEs to implement PEB. The overall mean rating is 3.78, with the lowest item mean of 3.53. It can be perceived that the respondents are somewhat positive about implementing PEB at the workplace. The most important drivers are "cost reduction and efficiency," "benefiting the company's culture," and "increasing public awareness." On the other hand, "improve employee's loyalty" and "reach new customers' segment" are among the less popular reasons given by the respondents.

Table 8. Mean values and index.

PEB practices	Mean value
Energy consumption	3.398
Recycling and recyclable products	3.688
Water saving measures	2.855
Environmentally friendly or natural products	3.258
Green operation / Process	3.018
PEB effectiveness index (PI)	0.649

Note: 0.20-0.45 is minimal; 0.46-0.70 is moderate; 0.71-1.00 is substantial.
Source: Chong and Chong (2009) and Coukos (2001).

Table 9. Benefits for implementing PEB.

Benefits	Mean	Standard deviation
Business reasons		
Enhance reputation and image	3.7	1.046
Strengthen corporate image	3.77	1.017
Improve competitiveness	3.66	1,116
Cost reduction and efficiency	4.13	0.912
	3.815	
Employee reasons		
Benefit company's culture	4.03	0.943
Enhance employee's satisfaction	3.79	0.926
Improve employee's morale	3.95	0.927
Improve employee's loyalty	3.53	1.115
	3.825	
Customer reasons		
Improve customer's satisfaction	3.78	1.092
Increase visibility	3.77	1.07
Reach new customers segment	3.59	1.149
	3.71	
Government & community reasons		
Enhance government relations	3.54	1.139
Improve local community relations	3.73	1.046
Increase public awareness	4.0	0.954
	3.76	
Group average	3.78	

Table 10 shows the barriers to PEB implementation amongst employees in MSMEs. The overall mean is 3.67, which shows that these barriers are inhibiting their PEB at the workplace. Taking a closer look, "lack of support and information from government" (3.77), "lack of social influence" (3.73), "manpower constraint" (3.71), and "cost implementation" (3.7) are among the significant obstacles reported by the respondents. On the other hand, the least reported barriers are "employee's resistance," "complexity," and the "lack of skill and know-how."

Table 10. Barriers for implementing PEB.

Obstacles	Mean	Standard deviation
Cost implementation	3.7	1.006
Time constraint	3.64	1.015
Manpower constraint	3.71	1.005
Lack of support and information from government	3.77	0.991
Employee's resistance	3.32	1.088
Lack of skill and know how	3.55	1.127
Lack of awareness on benefits	3.67	1.051
Complexity	3.54	1.018
Lack of technical support	3.66	1.052
Low business priority	3.6	1.079
Lack of social influence	3.73	1.046
Group average	3.63	

Tables 11 and 12 show the implementation level of green knowledge sharing and green HRM. In terms of knowledge sharing, "find no barriers in green knowledge sharing among each other" scores the highest mean (3.52), followed by "they are good at learning green knowledge from each other" (3.32) and "enjoy sharing environment-friendly knowledge" (3.23). The lowest mean is demonstrated by "sharing green knowledge obtained from media" (3.07). As for green HRM, the overall mean score is 2.805, which indicates that green HRM is still low in implementation level. Three items, i.e., "green recruitment," "green behaviour in performance appraisal," and "rewards and compensation," score the same mean (2.82). The lowest score is "providing green training" (2.76). All of the items score a mean of 3 to 3.6 (for knowledge sharing) and a mean of less than 3 (for green HRM), and show consistency in standard deviation scores.

Table 11. Green knowledge sharing.

People in my organization…	Mean	Standard deviation
Always share green knowledge obtained from medias.	3.07	1.258
Enjoy sharing environment-friendly knowledge with my colleagues	3.23	1.214
Find sharing green knowledge with colleagues pleasurable	3.21	1.244
Are good at learning green knowledge from each other	3.32	1.225
Find no barriers in green knowledge sharing among each other	3.52	1.199
Group average	3.27	

Table 12. Implementation of green HRM.

My organization…	Mean	Standard deviation
Applies green recruitment	2.82	1.281
Provides employees with green training to develop knowledge and skills required for green management	2.76	1.288
Considers employees' workplace green behaviour in performance appraisal	2.82	1.306
Considers employees' green behaviour in allocating rewards and compensation	2.82	1.311
Group average	2.805	

5. DISCUSSION AND IMPLICATIONS

The findings indicate the moderate PEB implementation level of MSMEs. This demonstrates a positive and proactive stance towards environmental sustainability among MSMEs, as currently there are no implementing policies and regulations that force all MSMEs to do so. Specifically, the results on PEB practices show that there is a very high tendency for implementation of PEB in recycling and recyclable products, energy consumption, and the usage of environmentally friendly products. More importantly, they suggest that firms are very common in practicing those relevant green behaviours if those practices involve less cost and without further investment. For example, practices such as printing on both sides of paper, reusing carton boxes, recycling old furniture, turning off electricity when not in use, using energy-saving lights, checking for leaks and fixing them regularly, and using digital documentation, reported high implementation levels. This also indicates employees are well aware of and able to internalise green habits into their daily work. However, activities such as using hand dryers, auto water taps, and rain harvesting, renewable energy (e.g., using rooftop solar) were reported at a lower score. This could be due to the cost constraint, as these activities may require firms to incur some cost or investment.

In addition, the water savings measure scored the lowest mean implementation value. This could be due to the fewer water crises experienced by firms in Malaysia or a lack of awareness about the usage of water, which could serve as a way to reduce the environmental footprint. In addition, the practice of organising green activities and rewarding top eco performers at work also scored a lower mean value. This may indicate that MSMEs perceive green behaviours as voluntary participation rather than publicly formalising them into the company's agendas.

As indicated by the PEB effectiveness index (0.649) and the mean value of PEB at the workplace (3.93), this shows an encouraging sign. The moderate level of PEB implementation suggests that MSMEs can further enhance their practices in all five categories of green activities. As PEB has positive impacts on sustainable growth and performance (Yusop & Adam, 2021), it is urged that MSMEs make an effort to benchmark against MSMEs with intensive PEB implementation into their strategic action plans.

Having said that, it is generally encouraging to see that the owners and managers are quite positive about the PEB implementation, especially from a business and employee perspective. Cost reduction and efficiency were reported as the most significant motivators. This result is in line with the PEB implementation level in the 5 categories. Most of the practices, such as using energy-saving lights, turning off electricity when not in use, and printing on both sides of papers, are actually cost-saving measures from a business perspective. In addition, the benefit company's culture is the most significant reason among the employee reasons. Culture is defined as the shared meaning and values held by the employees in an organization. This indicates that the owner or manager realises the importance of culture and values, and they are able to convert their attitude into behaviour as demonstrated in their PEB practices. However, there are also studies (Cassells & Lewis, 2011; Revell, Stokes, & Chen, 2010) that report that firms may not buy in to the positive values of owners and managers. Hence, it is an encouraging result to show that the Malaysian MSMEs are having fewer gaps in 'attitude-action' or 'values-action', where they are able to translate their positive attitudes into sustainability practices at the workplace.

The rest of the mean scores for both customer and government and community reasons were reported to be lower than the group mean. Specifically, the commitment to PEB implementation was less focused on reaching the new customer's segment and on enhancing government relations.

This result is somehow different from the focus reported by Crittenden, Crittenden, Ferrell, Ferrell, and Pinney (2011) and Cuerva, Triguero-Cano, and Córcoles (2014), who both emphasized that these pressures are important to push SMEs to implement PEB. Similarly, Agan, Acar, and Borodin (2013) also reported that organizational environmental management system implementation was significantly affected by customer demands, and Kammerer (2009) also reported that organizations tend to emphasize the environment more if they believe it can enhance the value of their customers. This situation may be explained by the fact that perhaps there is still a lack of environmental awareness and environmental demands from customers in Malaysian markets compared to Western markets. Also, there is less legislative pressure as the Malaysian government has not enforced any environmental regulations on MSMEs. However, this does not mean that MSMEs should overlook this, as it is important that their operations and activities, together with their communication functions to all stakeholders, be coordinated to reduce negative environmental impact and, at the same time, develop competitive advantages from there.

Likewise, the findings on the barriers to PEB implementation indicated that there is less government support and social influence. However, research shows that government roles are critical in supporting PEB implementation. It is therefore recommended that the Malaysian government provide more updated green information and support, perhaps in the form of a subsidy program or incentives to MSMEs in performing environmental behaviour. It may include providing infrastructure such as renewable energy facilities, water-saving measurements, green electronic devices, and relevant technical support.

From the business perspective, cost implementation and manpower constraints are the main barriers. This is in line with previous studies indicating that SMEs have insufficient resources and implementation issues as internal barriers (Alonso-Almeida, Robin, Pedroche, & Astorga, 2017; Mittal & Dhar, 2016). As mentioned earlier, the government may provide subsidies or encourage banks to provide special financing, such as a special eco fund, to assist environmental management projects.

The finding of the knowledge sharing practice is consistent with the prior findings that indicate that people in MSMEs are comfortable and enjoy green knowledge sharing among each other informally. This positive attitude is reflected in the behaviour of the employees when practicing PEB at the workplace. However, sharing from media

such as newspapers, magazines, journals, televisions and other sources is not popular. This is something that MSMEs may need to look into and improve, as employees need to learn new green initiatives and knowledge from external sources and have effective knowledge sharing with others in order to inspire others to learn and follow new green practices (Song et al., 2020). Failure to understand or ignore new information given or from external sources will definitely reduce its competitiveness to achieve its sustainable goals (Fawehinmi et al., 2020).

Next, the green HRM implementation among MSMEs was not satisfactory. Green HRM incorporates green environmental values into HRM activities that support sustainable goals and principles (Anwar et al., 2020). Unfortunately, our study shows that MSMEs are still not very active in practicing green HRM. This could be due to the limitation of cost and infrastructure. Nevertheless, this is similar to the results shown by Putra, Hardhika, and Susanti (2020) in their study in Bandung (Indonesia). Having said that, in order to be sustainable in the long term, owners and managers of MSMEs are advised to re-examine the importance of green HRM, as it has been recognized as the most important initiative to reach a more sustainable society (Rubel et al., 2021). To name a few, green trainings to facilitate corporate sustainability and pro-environmental practices and green performance measurement to measure performance standards and rewards for green waste reduction activities are important green HRM characteristics that need to be incorporated. Many firms have benefited from green HRM implementation as it helps their employees have better morale and financial performance. Hence, it is recommended that MSMEs place emphasis on green HRM activities, as it can help enhance the practice of PEB in order to achieve sustainable goals (Fawehinmi et al., 2020).

6. IMPLICATIONS

6.1. Theoretical Implications

The concept of environmental sustainability is not very well researched within the context of Malaysian MSMEs, and it is very difficult for MSMEs to see the clear link between environmental sustainability practices and their values due to the challenges they face. Although this is descriptive research, it provides knowledge and further insights on the current PEB implementation level with detailed analysis of the 5 important categories, characteristics of green HRM, and green knowledge sharing culture, as well as the motivators and barriers to implementing such practices. This research emphasizes the importance of workplace behavior in achieving environmental sustainability. Moreover, the drivers who practice PEB at organization may be different from those who practice it at home. For instance, employees are to pay home electricity costs but are not responsible for paying workplace energy costs. These findings could enhance the understanding of Malaysian MSMEs' effectiveness in environmental sustainability management, besides enriching the literature in this area.

6.2. Practical Implications

This study helps MSMEs determine appropriate cations and further develop proper measures to enhance their practice of PEB. This is essential in helping Malaysia achieve the ultimate United Nations SDG goals by developing a strong national green knowledge base. With carefully planned green environmental strategies and their committed responsibilities, MSMEs will be able to enjoy cost leadership with competitive advantages while protecting the ecosystem. More importantly, MSMEs are encouraged to act proactively on these sustainability challenges and to take this as a business opportunity to achieve their desired outcomes. With green knowledge, employees who spend long hours at the workplace can also help to mitigate the negative environmental impacts, even at a minimum level (Razak, Sabri, & Wijekoon, 2019). Meanwhile, government agencies may also apply the findings to encourage the practices of PEB among the heterogeneous group of Malaysian MSMEs, which will help improve sustainability values. More instrumental and financial support can be planned to support MSMEs in engaging with various sustainability projects towards developing an eco-friendlier product with high quality and impact on society.

7. CONCLUSION, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Overall, this study has achieved its objectives and shows there is a high tendency for PEB implementation among MSMEs. Majority of them have moderately implemented the five categories of PEB, of which recycling and recyclable products appear to be the most implemented. With a better understanding of the findings, it is hoped that Malaysian MSMEs will move steadily to achieve environmentally sustainable performance (Iqbal et al., 2018; Yusoff et al., 2020). Nevertheless, the respondents to this study were only gathered from MSMEs owners or managers, not other employees. This study is a descriptive study; hence, it did not assess the associations among the variables and did not look at multiple points of data collection. Future research may target employees, as their perspectives are equally important. Future studies are recommended to assess the associations between green knowledge sharing, green HRM, and PEB, such as innovation and organizational performance. Case studies could be conducted to check on the levers and barriers of green implementations. Lastly, a longitudinal study is also recommended to assess the PEB change over time to capture the green impacts on society.

Funding: This research is supported by Multimedia University (Grant number: MMUI/220002).
Institutional Review Board Statement: The Ethical Committee of the Multimedia University, Malaysia has granted approval for this study on 23 December 2022 (Ref. No. TTO/REC/EA/076/2022).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Planning, conceptualize, discussion and project management, C.C.W.; analysis and methods, O.A.O.; literature review, G.G.C. All authors have read and agreed to the published version of the manuscript.

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