

DRIVERS OF SUSTAINABLE ENTREPRENEURSHIP INTENTION: INSIGHTS FROM MANAGERS OF SMALL AND MEDIUM ENTERPRISES

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Abstract: *This study aimed to examine the factors influencing sustainable entrepreneurship intention among managers of small and medium enterprises (SMEs) within the manufacturing sector in Malaysia. Specifically, it investigated the relationships between sustainable attitude, social norms and opportunity recognition and, sustainable entrepreneurship intention. It employed a quantitative research design using questionnaire survey. The target population consisted of decision makers of SMEs such as owners, managers or top management. The sample was selected using proportionate stratified random sampling. A total of 342 usable responses were collected for analyses using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings revealed that social norms and opportunity recognition had significant and positive relationships with sustainable entrepreneurship intention. Social norms emerged as a vital predictor, implied that societal expectations and peer influence were crucial in shaping sustainable entrepreneurship intention. Meanwhile, opportunity recognition was also significant in motivating decision makers of manufacturing SMEs to pursue sustainable entrepreneurship. However, sustainable attitude was found to have no significant relationship with sustainable entrepreneurship intention. The findings implied that encouraging sustainable entrepreneurship among manufacturing SMEs requires interventions that go beyond attitudinal development. As such, policymakers, academicians and industry stakeholders should strengthen social support systems among manufacturing SMEs to make sustainable business socially desirable. Moreover, they should also provide various supportive platforms that enhance opportunity recognition for making sustainable business commercially attractive. Thus, sustainability recognition programmes, peer-learning networks and SME cluster collaborations are some of the possible efforts in accelerating sustainable entrepreneurship intention. This study contributed to both literature and practical aspects. Literally, it extended the understanding of formation process of sustainable entrepreneurship intention from Malaysian manufacturing SMEs perspectives. It also provided valuable insights*

from the actual decision makers of SMEs who are directly involved in business operations. In practical terms, it offered valuable information and strategies to policymakers, academicians and industry stakeholders in stimulating sustainable entrepreneurship intention. Most importantly, it highlighted the importance of social influence and opportunity recognition in encouraging sustainable entrepreneurship intention towards the achievement of national sustainability agenda.

Keywords: *intention; managers; small and medium enterprises; sustainable entrepreneurship*

Introduction

Natural disasters and human activities have accelerated environmental degradation in recent decades (Maurya et al., 2020). In terms of human activities, industrialisation, entrepreneurial activities and unethical manipulation of natural resources have pushed nature to its limit and created various sustainability issues. As Ahuti (2015) identified, developed countries were suffering from significant amount of environmental degradation and challenges due to overwhelmed industrial activities. Unfortunately, people's desire to actively tackle and overcome sustainability issues was still lacking (Bahşi et al, 2022).

In line with the 17 Sustainable Development Goals (SDGs) established by the United Nations, small and medium enterprises (SMEs) are positioned to drive sustainable growth in the current rapid developing economy. As the number of SMEs in Malaysia made up more than 95% of the total business establishments; they played a significant role as vital drivers in achieving those 17 SDGs. However, SMEs were still less familiar with sustainable approach as compared to large companies; possibly due to their lacked of green business experience and knowledge (Yadav et al., 2018). Moreover, positive sustainable actions from SMEs were also less embracing (Shibamoto, 2022).

The adoption of sustainable entrepreneurship practices among SMEs was deemed as a proactive strategy in mitigating sustainability issues. Although previous researchers such as Vuorio et al. (2018) have studied the intention of SMEs to engage in sustainable entrepreneurship, several issues still required further scrutiny. For instance, there are ample rooms for studying factors affecting adoption of sustainable practices among SMEs. Furthermore, the intention of existing SMEs in transforming themselves into sustainable entrepreneurs still remained under researched.

It could be said that SMEs represent the majority of business establishment in Malaysia, but their contribution to sustainable development was not promising. Many SMEs remained unfamiliar with sustainable practices and lacked necessary knowledge to implement them. As such, baseline studies are needed to assess whether managers of SMEs possess intention in transforming their businesses to engage in sustainable entrepreneurship. Specifically, this study examined the factors influencing the sustainable entrepreneurship intention among managers of SMEs in Malaysia.

Literature Review and Hypotheses Development

Sustainable Entrepreneurship

The term "sustainable entrepreneurship" has only made its way into academic literature recently although it was first appeared in the late 1990s. Sustainable entrepreneurship can be referred to

the discovery, creation and exploitation of entrepreneurial opportunities that contributed to sustainability by generating social and environmental gains for others in the society (Hockerts et al., 2010). Gerlach (2003) narrowed the definition to include innovative behaviour by players, whether government or non-government, business or non-profit enterprises, who viewed environmental or social challenges as essential competitive advantages. Rosário et al. (2022) noted that sustainable entrepreneurship is about identifying and exploiting entrepreneurial opportunities that balance financial performance with social equity and ecological preservation. In addition, Shepherd and Patzelt (2011) stated that sustainable entrepreneurs create future products, processes, and services for profit, where profit is widely defined to encompass both economic and non-economic benefits to individuals, economy, and society.

Sustainable entrepreneurship can also be considered as an extension of the 3Ps in Triple Bottom Lines (TBL) into entrepreneurship (Basu et al., 2008; Bell & Stellingwerf, 2012; Rosário et al., 2022). The first “P”, people can be referred to employing, developing and educating the right people to support a firm’s goals. The second “P”, planet reflects a business that cares about the environment and the planet’s long-term survival. While the last “P”, profit is related to a firm’s goal of sustainable entrepreneurship in making profit. Generally, sustainable entrepreneurship is an entrepreneurial activity that attempts to find the right balance of environmental, social and economic by improving the value and the quality of each dimension (Choi & Gray, 2008; Öykü İyigün, 2015). In short, sustainable entrepreneurship is a business strategy to bring innovation to products and services that focuses on social, environmental and business value enhancement while still generating profit.

Factors Fostering Sustainable Entrepreneurship Intention

As mentioned in the previous sections, sustainable entrepreneurship played a vital role in maintaining environmental sustainability through entrepreneurial activities. Therefore, researching the intention to embark on sustainable entrepreneurship could be deemed as a baseline study in delving deeper into the field of sustainable entrepreneurship.

Like any other types of entrepreneurships, sustainable entrepreneurship also begins with intention. As Ajzen (1991) stated, intention is a reliable predictor of human behaviour. As such, efforts must be made to optimise the intention among business operators in order to improve sustainable entrepreneurship. As explained in the Theory of Planned Behaviour (TPB), compatible intentions and perceptions of behavioural control are reliable predictors of human behaviour (Ajzen, 1991). Thus, elements in TPB could be considered as reliable predictors in assessing sustainable entrepreneurship intention.

Sustainable Attitude

Attitude is “degree to which a person has favourable or unfavourable evaluation or appraisal of the behaviour in question” (Ajzen, 1991). Vamvaka et al. (2020) further mentioned that attitude was the strongest predictor of intention particularly in entrepreneurship. Thus, sustainable attitude can be considered as one’s state of mind towards the issues related to the environment, society, or economy (Kalsoom, 2019). Specifically, Majid et al. (2017) discovered that attitudinal factors or sustainable attitudes played an important role in influencing the propensity of sustainable entrepreneurship in SMEs. Similarly, Agu et al. (2021) also found that individuals who held strong sustainable attitude were more inclined to recognise and pursue sustainable business opportunities.

Social Norms

Social norms refer to “perceived social pressure to perform or not to perform a particular behaviour” (Ajzen, 1991). Meanwhile, Thelken and de Jong (2020) explained it as close peers’ approval of a given action or behaviour. When entrepreneurs noticed that people whom they cared about supported sustainability-focused ventures, they would more likely to get involved with it (Wang & Dong, 2019). When close social groups expressed approval or support for sustainability-oriented ventures, entrepreneurs were more likely to perceive such actions as socially desirable and legitimate (Wang & Dong, 2019; Hassan et al., 2020; Xing & Zainal, 2024). Zhuang and Carey (2025) further found that social approval could also reduce perceived risks and uncertainties associated with sustainable practices. In addition, Peng et al. (2021) also claimed that social norms were positively related to the intention to start up sustainable businesses. Therefore, social approval eventually enhanced entrepreneurs’ motivation to pursue sustainable business initiatives.

Opportunity Recognition

Opportunity recognition can be described as cognitive process that encompasses thinking, developing an idea, and addressing problems for a start-up firm (Ryu & Kim, 2020). It is related to recognition of an opportunity about an arrangement of various resources that can lead to starting a successful business with a profit-generation ability (Kuckertz et al., 2017). Opportunity recognition had a significant positive impact on entrepreneurial intention (Ryu & Kim, 2020; Hassan et al., 2020). As supported by Yasir et al. (2021), opportunity recognition was the first step in entrepreneurship development including sustainable entrepreneurship. Indeed, Hanohov and Baldacchino (2018) mentioned that sustainable entrepreneurship was influenced by the identification of sustainable opportunities.

Conceptual Framework and Hypotheses

Based on the discussion in the previous section, entrepreneurs with a favourable outlook on sustainability tended to reinforce their intention to engage in sustainable entrepreneurship. Moreover, social approval served as a reinforcement mechanism that encouraged sustainable business start-ups. In addition, opportunity recognition also strengthened sustainable entrepreneurship intention. As such, the following conceptual framework and hypotheses were proposed for this study:

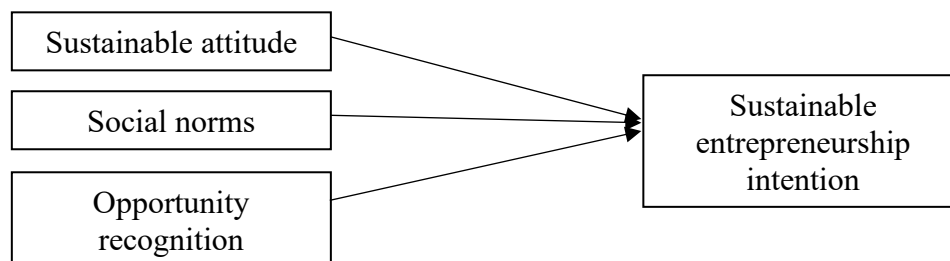


Figure 1: Conceptual framework

Source: Own Study.

H1: There is a significant positive relationship between sustainable attitude and sustainable entrepreneurship intention.

H2: There is a significant positive relationship between social norms and sustainable entrepreneurship intention.

H3: There is a significant positive relationship between opportunity recognition and sustainable entrepreneurship intention.

Research Methodology

This study used a quantitative research method because all variables could be measured and tabulated. Specifically, questionnaire survey was performed. The main purpose of this study was to determine the cause-and-effect relationships between independent variables (sustainable attitude, social norms and opportunity recognition) and the dependent variable (sustainable entrepreneurship intention). The three hypotheses were tested statistically.

The target population was SMEs in the manufacturing sector in Malaysia. It is worth mentioning that SMEs in Malaysia included micro, small and medium-size enterprises. The size was determined through number of employees; in which medium-size enterprises should have between 75 and 200 employees, small-size enterprises between five and 74 employees and micro-size enterprises less than five employees. The population frame was obtained through the Directory of Malaysian Industry published by the Federation of Manufacturing Malaysia (FMM). Based on the directory, there were 2688 enterprises found. This study further selected the sample using probability sampling method, which was proportionate stratified random sampling. First, population was divided into 14 strata according to states and territories of Malaysia. Then, the sample size was determined using the Table of Sample Size Determination developed by Krejcie and Morgan (1970), which was at minimum 336 subjects. The unit of analysis were individual decision-makers of SMEs, such as owners, managers, or top management.

A self-administered questionnaire was developed as the research instrument of this study. All 22 items in the questionnaire were adapted from previous studies, with slight modifications to suit the SME's context in Malaysia. Particularly, sustainable attitude consisted seven items adapted from Braun (2010), social norms consisted four items adapted from Kennedy et al. (2003), opportunity recognition consisted five items adapted from Bapoo et al. (2022) and, sustainable entrepreneurship intention consisted six items adapted from Liñán and Chen (2009). All items used five-point Likert scale, ranging from 1=strongly disagree to 5=strongly agree. The questionnaire was pre-tested prior to the data collection process to ensure its reliability through internal consistency (Cronbach's $\alpha > 0.7$).

The data was collected cross-sectionally under a non-contrived study setting. The respondents were contacted through emails with questionnaire link. Due to the fact that SME research normally yielded low response rate; this study distributed 440 questionnaires. Follow-up strategies such as follow-up emails and reminder phone calls were made to increase responses from participants. A total of 345 completed questionnaires were returned, resulting in a response rate of 78.4% at the end of the data collection process. The collected data was further analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM).

Results and Discussion

Preliminary Analysis

First, this study did not have any missing values because the questionnaires was delivered using Google Forms which included a "required" option that prevented respondents from missing the question. Second, three responses were identified as extreme outliers using box-plot method and were removed for further analyses. Third, the skewness and kurtosis tests showed that all

constructs fell within the acceptable range and indicated a normal distribution. Last, the Harman's Single Factor Test found that the single factor accounted for 34.3% of the variance, which was less than the threshold level of 50% of total variance explained. Thus, it confirmed that common method bias (CMB) did not exist.

Demographic Profiles of Respondents

After the preliminary analysis, this study forwarded 342 responses for further analyses. Majority of the firms were familiar with sustainable principles and sustainability entrepreneurship (n=269; 78.7%) while 73 firms (21.3%) were aware of sustainability or had at least heard about it before. Most of the firms (n=217; 63.5%) had between five and 74 workers, followed by 77 firms (22.5%) had between 75 and 200 employees and 48 firms (14.0%) had less than five full-time workers. As for the years of operations, 182 firms (53.2%) had been operating for more than 10 years, followed by 5 to 10 years (n=119; 34.8%) and less than 5 years (n=41; 12.0%). In terms of types of business registration, 268 firms (78.4%) registered as private limited companies, 41 firms (12.0%) ran as sole proprietorships, 25 firms (7.3%) operated as partnerships, and 8 firms (2.3%) operated as limited liability partnership or cooperations. The analysis further revealed that 126 firms (36.8%) had actively participated in sustainable business practices, while 126 firms (36.8%) had plans to implement them, and lastly 90 firms (26.3%) have not initiated any of them.

Measurement Model Assessment

This study used indicator reliability, internal consistency reliability, convergent validity and discriminant validity to assess the measurement model because it utilised reflective constructs. Table 1 shows the factor loadings, average variance extracted (AVE), composite reliability (CR) and Cronbach's alpha (α). As showed in Table 1, this study retained items with factor loadings greater than 0.5. Therefore, three items of sustainable attitude construct (SA3, SA4, and SA6) were removed due to insufficient loading. For social norms construct, all four items met the loading requirement and were consequently retained. In terms of opportunity recognition, one item (OR1) was removed. Meanwhile, two items (ISE4 and ISE6) were omitted for sustainable entrepreneurship intention construct. All CR values were also above the minimum value of 0.7; thus, demonstrating that indicator reliability was achieved. Furthermore, all Cronbach's α values were well above the 0.7 threshold; thus, indicating that internal consistency reliability was attained. Convergent validity was also achieved because all AVE values were above 0.5.

Table 1: Constructs Reliability and Validity

Construct	Item	Loading	AVE	CR	α
Sustainable Attitude (SA)	SA1	0.554	0.572	0.839	0.749
	SA2	0.834			
	SA5	0.794			
	SA7	0.808			
Social Norms (SN)	SN1	0.724	0.585	0.849	0.766
	SN2	0.833			
	SN3	0.747			
	SN4	0.751			
Opportunity Recognition (OR)	OR2	0.741	0.533	0.820	0.708
	OR3	0.652			
	OR4	0.784			
	OR5	0.737			

Sustainable Entrepreneurship Intention (ISE)	ISE1	0.845	0.597	0.855	0.773
	ISE2	0.719			
	ISE3	0.739			
	ISE5	0.782			

Source: Own Study.

This study employed Fornell and Lacker's Criterion (Table 2), crossed-loadings criterion (Table 3) and Heterotrait-Monotrait ratio of correlations (HTMT) (Table 4) to determine the discriminant validity. First, Table 2 shows that all square root of AVE values (diagonal) were larger than the correlation values (off-diagonal). Meanwhile, Table 3 depicts that all indicators loaded highly on their construct but poorly on other constructs. Last, Table 4 demonstrated that all HTMT values were less than 0.9. As such, discriminant validity was proven.

Table 2: Fornell and Lacker's Criterion

	SA	SN	OR	ISE
SA	0.756			
SN	0.296	0.765		
OR	0.408	0.313	0.730	
ISE	0.400	0.484	0.472	0.773

Source: Own Study.

Table 3: Crossed-loadings Criterion

	SA	SN	OR	ISE
SA1	0.554	0.166	0.164	0.164
SA2	0.834	0.250	0.307	0.365
SA5	0.794	0.253	0.377	0.314
SA7	0.808	0.215	0.340	0.324
SN1	0.230	0.724	0.232	0.357
SN2	0.293	0.833	0.284	0.475
SN3	0.187	0.747	0.214	0.285
SN4	0.167	0.751	0.213	0.323
OR2	0.283	0.242	0.741	0.389
OR3	0.304	0.125	0.652	0.275
OR4	0.311	0.296	0.784	0.381
OR5	0.301	0.228	0.737	0.320
ISE1	0.325	0.431	0.406	0.845
ISE2	0.308	0.277	0.404	0.719
ISE3	0.249	0.449	0.316	0.739
ISE5	0.353	0.333	0.328	0.782

Source: Own Study.

Table 4: HTMT Criterion

	SA	SN	OR	ISE
SA				
SN	0.408			
OR	0.542	0.408		
ISE	0.508	0.610	0.630	

Source: Own Study.

Structural Model Assessment

Table 5 depicts the outcomes of the structural model assessment based on bootstrapping approach using 5000 resample. As shown, all inner variance inflation factor (VIF) values were below the threshold of 3.3 (ranging from 1.231 to 1.847), indicating that lateral multicollinearity problems were absent (Hair et al., 2017).

As for the results of hypotheses testing (Table 5), the findings illustrated that social norms ($\beta=0.262$; $t=6.305$; $p<0.001$) and opportunity recognition ($\beta=0.216$; $t=4.404$; $p<0.001$) were significant in affecting sustainable entrepreneurship intention positively. However, sustainable attitude ($\beta=0.010$; $t=0.708$; $p>0.001$) was found to be insignificant in influencing sustainable entrepreneurship intention. As such, H2 and H3 were supported; but H1 was not supported.

Table 5: Structural Model Assessment

Hypothesis	Path	β	SE	t-value	Decision	VIF	f^2	R ²	Q ²
H1	SA -> ISE	0.010	0.063	0.708	Not Supported	1.847	0.000	0.458	0.398
H2	SN -> ISE	0.262	0.046	6.305**	Supported	1.231	0.103		
H3	OR -> ISE	0.216	0.049	4.404**	Supported	1.351	0.064		

Source: Own Study.

Based on the findings, the R² value of 0.458 indicated that sustainable attitude, social norms and opportunity recognition accounted for 45.80% of the variance in sustainable entrepreneurship intention. As for the impact size (f^2) in generating R², Cohen (1992) mentioned that the effects could be minor ($f^2=0.02$), medium ($f^2=0.15$) and large ($f^2=0.35$). Hair et al. (2017) further added that f^2 value of less than 0.02 indicated no effect. Thus, sustainable attitude ($f^2=0.000$) was considered no effect; while social norms ($f^2=0.103$) had medium effect and opportunity recognition ($f^2=0.064$) had small effect in generating R² for sustainable entrepreneurship intention. Furthermore, this study utilised Q² in investigating the model's predictive usefulness. The Q² value of 0.398 was greater than zero, indicated that that the models had considerable predictive significance.

Discussions of Findings

This study identified that sustainable attitude did not have a significant relationship with sustainable entrepreneurship intention. As such, sustainable attitude did not contribute directly to sustainable entrepreneurship intention in the case for manufacturing SMEs in Malaysia. Although the finding contradicted with Vamvaka et al. (2020), Kalsoom (2019) and Agu et al. (2021); it supported several previous studies such as Wang and Dong (2019) and Colombo et al. (2023) who mentioned that attitudes did not necessarily translate into intentions. This interesting contradicting finding suggested the presence of an attitude-intention gap within manufacturing SMEs. It showed that decision-making was typically influenced by economic constraints, market pressure or institutional regulation rather than personal attitude alone. As for manufacturing SMEs in the context of Malaysia, they were likely constrained by operational costs, pricing pressures, supply chain challenges and regulatory uncertainties. Thus, favourable attitudes might not automatically translate into sustainable entrepreneurial intentions because pragmatic business considerations weakened the predictive power of personal attitude. This further demonstrated that SMEs required an extended intentional model that incorporated various factors such as financial readiness, institutional support and strategic capabilities.

The finding further indicated that social norms had a positive and significant effect on sustainable entrepreneurship intention. This study was parallel with Peng et al. (2021) who claimed that social norms were positively related to the sustainable entrepreneurship intention. As Silberer et al. (2020) mentioned, social norms were able to encourage those who with less interest in environmental conservation to adopt sustainable behaviours. The findings indicated that decisions makers of manufacturing SMEs were highly affected by expectations and approval of individuals surrounding them, such as family members, friends, industry peers or even customers. This also proved that Malaysian SMEs highly regarded community and collective values. The findings further highlighted the vital role of social contagion mechanism in accelerating sustainable entrepreneurship intention. In other words, sustainable entrepreneurship intention could be developed through peer imitation, benchmarking and industry recognition or role models.

This study also confirmed that opportunity recognition affected the sustainable entrepreneurship intention among manufacturing SMEs' managers in Malaysia. The finding was congruent with previous studies. For instance, Hanohov and Baldacchino (2018) supported that the desire to generate benefits for both the community and oneself shaped the intention of adopting sustainable entrepreneurship. Mohammadi and Heshmati (2021) also stressed that business opportunity recognition had a positive contribution in influencing either entrepreneurial intention or sustainable development. The findings suggested that entrepreneurs were more inclined to sustainable entrepreneurship when they were able to identify and seize a sustainable business opportunity. This showed that sustainable entrepreneurship was not only deemed as an ethical commitment but also an opportunity- and profit-driven action. Thus, commercial value was a critical consideration for Malaysian manufacturing SMEs to embark on sustainable entrepreneurship. The findings further pointed out the importance of strategic opportunity discovery process in transitioning manufacturing SMEs toward sustainable entrepreneurship. It suggested that developing entrepreneurs' market scanning abilities and innovation capabilities were important in bolstering sustainable entrepreneurship intention.

Collectively, this study indicated that sustainable entrepreneurship intention could be shaped more by social legitimacy and opportunity logic than by personal attitude alone. It showed that effective sustainability development should normalize sustainable behaviour socially and reveal its commercial attractiveness economically. It also presented a new perspective for emerging economy such as Malaysia that sustainability transition among SMEs happened not because entrepreneurs "care more", but because sustainability becomes socially expected and economically rewarding. In particular, the findings were valuable for the country to ensure rapid progress toward SDG goals.

Conclusions

The aim of this study was to examine the factors influencing the sustainable entrepreneurship intention among managers of manufacturing SMEs in Malaysia. It concluded that social norms and opportunity recognition had positive and significant relationships with sustainable entrepreneurship intention. However, significant relationship between sustainable attitude and sustainable entrepreneurship intention was not found.

In terms of literature implications, this study provided valuable insights in understanding the scope of factors influencing the sustainable entrepreneurship intention, particularly for manufacturing SMEs. Furthermore, it also confirmed the use of elements of TPB in predicting behavioural intention. Apart from that, this study also offered valuable practical implications

for policymakers, practitioners and academics toward the growth of sustainable entrepreneurship. Generally, by acknowledging the interplay of all the factors influencing sustainable entrepreneurship intention, this study served as a guideline for planning and shaping an idea for sustainable entrepreneurship development.

Several limitations were found in this study. For instance, it was subject to generalisation issue. The results might not be applicable to different populations, contexts or environments. Furthermore, it primarily represented views from individuals involved in existing businesses. It might not fully reflect the perspective and motivation of future entrepreneurs because existing businesses had different priorities and objectives. Therefore, future studies should conduct comparative studies across different industries to explore how different factors might impact the sustainable entrepreneurship intention. Future researches are suggested to include students in entrepreneurship or aspiring entrepreneurs as sample of studies as well.

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