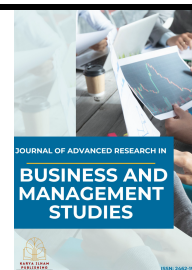




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Determinants of the Sustainable Business Performance of Women Entrepreneurs in the Developing World Context: The Mediating Influence of Self-Efficacy

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ABSTRACT

By implementing sustainable practices, businesses can ensure prosperity, stability, and a better quality of life. Achieving sustainable prosperity requires the harmonious management of social, environmental, and cultural aspects. The study's objective is to examine the influence of attitude, subjective norms, perceived behavioural control, and self-efficacy on the sustainable business performance of women entrepreneurs. Second, it is to examine the mediating effect of self-efficacy on the relationships between attitude, subjective norms, perceived behavioural control, and sustainable business performance. This study employs a quantitative approach, utilizing survey methods as its research methodology. The study sample comprises 400 respondents selected from four states (i.e., Selangor, Kuala Lumpur, Negeri Sembilan, and Johor) in Peninsular Malaysia, who were selected using a combination of cluster and purposive sampling techniques. The data were analyzed using confirmatory factor analysis (CFA) and structural equation modeling (SEM) with the AMOS 29 program. The findings discovered that attitude, subjective norms, perceived behavioural control, and self-efficacy significantly influence the sustainable business performance of women entrepreneurs. The second finding showed that self-efficacy significantly mediates the relationships between attitude, subjective norms, and sustainable business performance of women entrepreneurs. Conversely, self-efficacy does not mediate the relationship between perceived behavioural control and sustainable business performance. Theoretically, this study helps to validate and improve the application of the theory of planned behaviour (TPB) and delivers new insights for the entrepreneurial literature. Most empirical studies have focused on financial performance measurement in the Western context, with a limited study population that requires further explanation.

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1. Introduction

Women's involvement in entrepreneurship has a significant impact on economic sustainability, especially on family income and the quality of life of the community. In Malaysia, women entrepreneurs comprise 21% of small and medium-sized enterprises (SMEs). This situation demonstrates that approximately 241,767 women-operated businesses contribute significantly to the national economy, where SMEs account for 97.4% of all businesses [1]. Women's participation in the entrepreneurial world can have a profoundly positive influence on economic growth. On a smaller scale, women's participation in the field can help improve the well-being of households, reduce poverty levels, and even lead to a more respectable position in society [2]. In the past, women were often identified as those who took care of household chores. However, with the passage of time, women can play a significant role in the economy by working outside the home, utilizing their skills and abilities. While this is an encouraging development, a significant gender gap remains, as Malaysia has set a target to achieve a 60% female workforce participation rate (LFPR) by 2033 [3]. By overcoming structural barriers and opening access to digital tools, financial literacy, and a supportive ecosystem, Malaysia is not only empowering its women entrepreneurs but also shaping a more inclusive, equitable, and prosperous economic future for all.

Women entrepreneurs are also urged to promote sustainable business performance. The world is uncertain, and significant challenges, such as climate change, poverty, and inequality, are pressing issues that are increasingly felt in everyday life [4-7]. A sustainable business policy aims to produce a profit while also having a positive impact on the environment and society [8]. When businesses demonstrate their commitment to sustainability, they appear credible and attract individuals who value making a positive impact [9-11]. Past studies have found that a positive attitude leads a person to engage in pro-environmental and social empowerment activities [12-14]. Negative human attitudes, such as greed, egoism, and materialism, are fundamental human weaknesses that can lead to the indiscriminate destruction of the environment [15-17]. In addition to attitudinal factors, subjective norms can affect sustainable business performance. Subjective norms are social pressures that influence a person's decision to engage in certain behaviors [18]. Many researchers have elucidated that social networks are one of the significant factors in promoting sustainability in entrepreneurship [19-22].

On other hand, past studies such as Islam and Wahab [23], Li *et al.*, [24], Shi *et al.*, [25], and Trevlopoulos *et al.*, [26] have revealed that perceived behavioural control significantly influence environmentally minded behavior which can have a significant impact on efforts to improve the quality of the environment, mitigating climate change, and a driver of the global environmental agenda. Several factors, including both internal and external factors, influence an individual's control over their behavior. Internal factors originate from within the individual, including skills, will, information, and knowledge [19]. At the same time, external factors come from the environment around the individual. Given this context, the primary objective of this study is to investigate whether attitudes, subjective norms, and perceived behavioural control impact the sustainable business performance of women entrepreneurs.

Moreover, this study also aims to examine the mediation effect of self-efficacy. Entrepreneurial self-efficacy refers to the strength of an individual's belief in their ability to perform a role in entrepreneurial activities [27,28]. Individuals with an outstanding level of self-efficacy have greater confidence in developing innovative ideas, creating creative and eco-friendly products, and engaging in social responsibility that leads to environmental and social protection [29-31]. Evaluating the existing literature on business performance reveals that scholars have primarily focused on attitude, subjective norms, perceived behavioral control, and self-efficacy. We also note that most studies pay

less attention to sustainable business performance. Non-financial performance metrics measure various aspects of performance that are not directly related to financial results. These metrics provide insights into operational efficiency, customer satisfaction, employee engagement, and sustainability efforts [10]. By adhering to environmental regulations and minimizing their negative environmental impact, businesses can avoid legal sanctions and maintain their reputation and trust with customers and stakeholders [17,19,25,26].

Most empirical studies have focused on the Western context and developed nations with limited study populations [9,32]. This study has focused on the context of developing countries through the lens of women entrepreneurs. Women entrepreneurs are often seen as a weak gender and constantly face a conflict of balance between family and career, especially for those who are married [33]. For a long time, women have often been associated with simple jobs and are usually considered less important in supporting the family economy. However, as time passes, the needs of women in the professional field have evolved, thereby elevating their position within the family institution. Armed with dedication and relentless effort, the number of successful women entrepreneurs in various industries is on the rise. Therefore, new empirical evidence is needed to help policymakers establish an inclusive model of gender growth in entrepreneurship. In addressing the theoretical gap, incorporating self-efficacy as a mediating variable enables the study to provide a more comprehensive explanation of the theory. Most studies have examined relationships using direct effect association [30,34]. Mediation of self-efficacy helps us understand the cause-and-effect relationships between variables in a research model. In some cases, the independent variable does not directly influence the dependent variable, but rather through an intervening variable. Against that backdrop, we planned to address the following research questions:

- 1) Do attitude, subjective norms, perceived behavioural control, and self-efficacy influence the sustainable business performance of women entrepreneurs?
- 2) Does self-efficacy mediate the relationships between attitude, subjective norms, perceived behavioural control, and self-efficacy influence the sustainable business performance of women entrepreneurs?

2. Literature Review

2.1 Theory of Planned Behaviour

This study uses the theory of planned behaviour as a fundamental theory to explain the phenomenon of behaviour supporting sustainable business performance. The theory of planned behaviour has been widely used in various research fields to predict behaviour successfully [35]. Based on the theory of planned behaviour [18], it can be understood that individuals make a conscious decision to engage in behaviour. It is influenced by (a) attitudes, which are personal beliefs about the behaviour and evaluations of its outcomes, (b) subjective norms, which are normative beliefs about social desirability and expectations of social pressure to perform it, and (c) behavioural control expectations, which are beliefs about the ability and opportunity to perform the behaviour [18]. According to the theory of planned behaviour, attitude is recognized as an individual's positive or negative evaluation of a particular behaviour. It is expressed in the form of expected outcomes of implementing that behaviour [15,16].

Expected benefits from sustainability are used to measure attitude. This means that individuals with high expected benefits from practicing green business will support any efforts to achieve sustainable business performance [13]. Meanwhile, subjective norms are normative pressures that arise from the perception that others want the person to perform specific behaviour [18]. In other

words, subjective norms refer to an individual's perception of whether important people around them support or discourage them from performing a particular behavior, and this can influence their ability to uphold sustainable values that align with the country's sustainable development goals [19, 20, 22-25].

The theory of planned behaviour has been widely used in various research fields to predict sustainable behaviour. Although many researchers have widely applied the theory of planned behaviour, scholars have suggested that the factors of attitude, subjective norms, and behavioural control expectations in the theory may not be sufficient to explain individual intentions and actions [36]. Therefore, incorporating some additional constructs into the model may be beneficial. Based on the limitations of the theory of planned behaviour, the individual factor, namely self-efficacy, may be considered a better explanation for an individual's behaviour. In this study, the concept of self-efficacy is employed within the framework of the Theory of Planned Behaviour. Self-efficacy refers to the confidence an individual feels about performing a particular behaviour, including confidence in overcoming obstacles to achieving that behaviour [29]. Therefore, individuals with high self-efficacy regarding green practices will show high support for sustainable business performance [31, 37].

2.2 Women Entrepreneurship and Sustainable Business Performance

The success of women who become great entrepreneurs is proof that, when given the opportunity, they are not only able to change their own fate but also uplift their families, communities, and countries [1]. Many of them started from small businesses, now successfully employing hundreds of workers and making their products known throughout the country. It cannot be denied that women today need to have a job, and the SME sector is seen as an excellent opportunity for them. The issue of women's participation in entrepreneurship, both at the national and international levels, particularly in SMEs, is gaining increasing emphasis. In line with the economic and social development agenda to create a united and strong Malaysian nation in the future, emphasis needs to be given to the aspect of balanced income distribution and social justice among urban and rural communities. Women entrepreneurs, small businesses, and communities are often considered marginalized and far behind in all aspects compared to other groups [2]. Therefore, women entrepreneurs need to take the initiative to make drastic changes and transformations in all aspects, especially in terms of mindset, to venture into the field of entrepreneurship and increase economic strength and stability, thereby competing healthily and not continuing to lag behind high-income countries [3].

The success of a women's organization can be assessed through the organization's financial and non-financial indicators. According to Crous *et al.*, [38], organizational performance can be divided into two parts: financial and non-financial. Financial performance is characterized by an increase in sales, a rise in the sales-to-assets ratio, an increase in operating income, and a rise in the operating income-to-total assets ratio. Meanwhile, non-financial performance includes customer satisfaction, productivity, employee morale, quality of output, and delivery performance [1]. In recent years, sustainability has become a significant focus for many organizations due to climate change, regulatory pressures, and the social need to be more environmentally and socially responsible [7]. The Triple Bottom Line (TBL) principle was introduced to describe the three pillars of sustainability: economic, environmental, and social [5]. Organizations must demonstrate economic, environmental, and social sustainability [10]. Economic sustainability is crucial for corporate financial success, as an organization must continually produce goods and services while maintaining a balance between spending and earnings to remain operational. Environmental sustainability focuses on the impact of

business on the environment. Social sustainability encompasses the humanitarian context of business, emphasizing equity in distribution and opportunity, and is related to issues of health and education, income inequality, and poverty [10].

2.3 Attitude and Sustainable Business Performance

Attitude is a relatively stable predisposition towards certain conditions, objects, or individuals. In simple terms, attitude can be interpreted as a form of evaluation, belief, and evaluation of a person towards an object or situation [18]. Jusuf and Nuttavuthisit [15] stated that individuals with a pro-environmental attitude take voluntary actions to preserve the environment. They are more likely to engage in activities that can make a positive difference and will do things that have a less negative impact on the environment. Shiri [13] discovered that attitude influences entrepreneurs and farmers in adopting a holistic food production management system, which promotes and enhances the health of agricultural ecosystems, including biodiversity, biological cycles, and soil biological activity. Similarly, Mondal *et al.*, [16] found that attitude supports the circular economy, where businesses prioritize waste reduction and the optimal use of resources. Singh *et al.*, [14] stated that entrepreneurs can contribute to creating social harmony by possessing moral values and a good attitude. Helping the less fortunate is a noble practice that should be implemented daily, and it has led to business social performance. Through empathy, tolerance, and understanding of differences, entrepreneurs can establish harmonious relationships with others and create a peaceful atmosphere in society [12]. Therefore, it is possible to hypothesize that:

H1. Attitude has a positive relationship with the sustainable business performance of women entrepreneurs.

2.4 Subjective Norms and Sustainable Business Performance

Subjective norms are defined as other people's perceptions of the job one wants to perform [18]. Subjective norms are also based on two main components: normative beliefs and motivation to comply. Normative beliefs are closely related to the perception and confidence others have in an individual, regardless of whether they can display positive behavior or not. The opinions of experts or people considered important and influential can also instill confidence, subsequently influencing the individual to adopt sustainable behavior [19,20]. Mitra's study [22], for example, found that family influences business owners' awareness of the importance of environmental care, often prompting them to seek more efficient and sustainable business solutions. Meanwhile, the motivation to comply refers to the extent to which an individual strives to fulfil these expectations [24]. Entrepreneurs seeking information about sustainable business practices will undoubtedly refer to reference groups that influence their behavioral decisions. When this reference group provides support such as positive evaluations, suggestions, or motivation towards the reform agenda, this further strengthens the individual's desire to carry out their actions [39]. Examples of reference groups that underline the behavioural decisions of entrepreneurs include parents, spouses, employers, industry experts, and consumers. Shou *et al.*'s [34] findings revealed that subjective norms influence green innovation, where businesses focus on developing products, processes, and technologies that have minimal environmental impact. Li *et al.*, [24] found that subjective norms lead to sustainable businesses that prioritize a user-centric approach, value scientific approaches and innovation, respect local customs and cultures, and foster collaboration with all stakeholders. Thus, the following hypothesis is posited:

H2. Subjective norms have a positive relationship with the sustainable business performance of women entrepreneurs.

2.5 Perceived Behavioural Control and Sustainable Business Performance

Perceived behavioural control refers to the extent to which a person can behave depending on the difficulty and pleasure of acting based on one's experiences and beliefs [18]. There are two aspects: firstly, how a person controls their behaviour, and secondly, the confidence a person has to do something. This is determined by the controlled beliefs about the situation and internal factors that facilitate the behaviour [18]. The ease or difficulty of doing something depends on internal and external factors, such as knowledge, skills, resources, and opportunities, that enable the person to perform sustainable behavior [24]. Suppose a person has control over a factor. In that case, the individual's intention will increase; conversely, if the individual does not control the factor. The intention for the person to perform sustainable behaviour becomes weak [24]. In some situations, perceived behavioural control not only influences the intention but can also directly affect the behaviour [18]. For example, several internal and external factors influence an entrepreneur's ability to achieve sustainable business performance. Among these factors are knowledge and perception of sustainable business benefits, as well as laws and regulations relating to environmental protection and business compliance [17,19]. External factors include climate change, poverty, pollution, resource scarcity, and sustainability trends [25,26]. Businesses that fail to respond to environmental issues face legal fines, supply chain disruptions, and reputational damage. In contrast, businesses that adopt green strategies gain customer trust, cost savings, and a competitive advantage [23]. Thus, the following hypothesis is postulated:

H3. Positive behavioural control has a positive relationship with the sustainable business performance of women entrepreneurs.

2.6 Mediation Effect of Self-Efficacy

According to Sharma and Rautela [37], self-efficacious individuals reflect confidence in their ability to control their motivation, behaviour, and social environment. According to Bandura [29], efficacy has two dimensions: first, belief in the purpose (task or outcome), and second, belief in oneself (negative or positive) that exists during the process of business creation. Self-efficacy refers to an individual's capability and determination in organizing and implementing the actions necessary to achieve business goals [29]. This is supported by Malenković and Slavec Gomezel [30]. In their statement, this individual can focus on efforts to reduce natural degradation, acknowledge the challenges in achieving the desired goals and the commitment required to reach them, and demonstrate more productive strategies by utilizing existing resources effectively towards achieving the targeted goals. In this study, the self-efficacy variable is defined as an individual's belief in their ability to achieve sustainable business performance effectively. Previous literature studies found that self-efficacy is often used as a moderating and mediating variable [27,31]. For this study, self-efficacy is used as a mediating variable. Javed *et al.*, [27] discovered the indirect impact of entrepreneurial efficacy on business and environmentally friendly product innovation, to minimize negative environmental impacts. Olorunsola *et al.*, [28] found that self-efficacy can help people perceive a situation from the perspective of the natural environment, feel empathy for it, and pay attention to it. Therefore, efficacy has a positive effect on business creation. Therefore, it is possible to hypothesize that:

H4. Self-efficacy mediates the relationships between (a) attitude, (b) subjective norms, and (c) perceived behavioural control and the sustainable business performance of women entrepreneurs.

Figure 1 portrays the study research model.

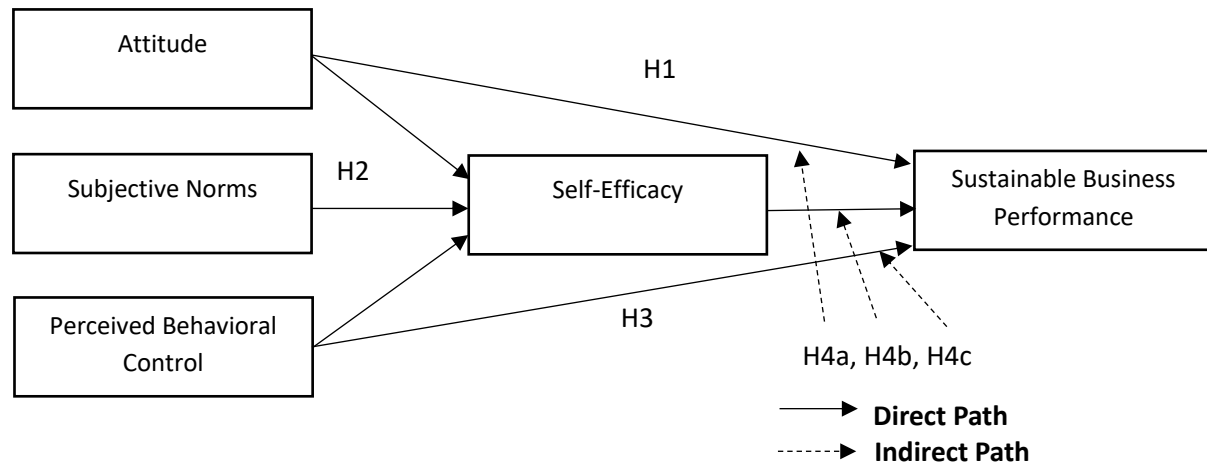


Fig. 1. Research Model

3. Methodology

This study employs a quantitative approach, utilizing survey methods as its research methodology. This study aims to understand the perceptions of women entrepreneurs in Peninsular Malaysia. The study sample consists of 400 respondents who were selected from four states (i.e., Selangor, Kuala Lumpur, Negeri Sembilan, and Johor) in Peninsular Malaysia. This sample selection was carried out using the Krejcie and Morgan [40] approach, which states that the minimum sample size sufficient for a population above 100,000 is a minimum of 384 people. The cluster sampling technique was used in this study because the respondents were from different states. Therefore, the first step was to separate the respondents by state. Following this, a purposive sampling technique was employed to select 400 respondents, with each state represented by 100 respondents. The criteria used include women entrepreneurs, Malaysian, aged between 18 and 60 years, operating businesses in either the formal or informal sector, and having more than one year of business experience.

This study was conducted as a pilot study with 40 women entrepreneurs to ensure the questionnaire instrument could be used effectively. According to Cooper and Schindler [41], this number of respondents is sufficient because the appropriate number for a pilot study is between 25 and 100 people. Braun *et al.*, [42] adapted seven items in measuring attitude. Then, to measure subjective norms, four items are adapted from Al-Mamary [43]. Next, five items measuring perceived behavioral control are adapted from Braun *et al.*, [42]. Three items in measuring self-efficacy are adapted from Wang *et al.*, [44]. Finally, business performance items were engaged from Agrawal *et al.*, [45] and Lee and Roh [21]. Table 1 shows the results of the Cronbach's Alpha test for each construct item. The Cronbach's Alpha reliability coefficient for this questionnaire instrument ranges from 0.790 to 0.870. Therefore, Cronbach's Alpha value for the item statement is assessed as good and acceptable. Pallant [46] explains that the minimum accepted value for the reliability of a research tool is 0.60 to test the feasibility or suitability of the study. The five-point Likert scale allows researchers to measure respondents' degree of agreement or disagreement with statements

presented in a questionnaire. This scale offers a range of response options, from "strongly disagree" to "strongly agree," providing a more nuanced understanding of respondents' opinions. SEM analysis is carried out in two stages: the measurement model and the structural model.

Table 1
Measurement of variables

Variables	Items	Cronbach's Alpha
Attitude	ATT1: Modern industrial impacts on nature are minimal.	0.790
	ATT2: The equilibrium of nature is fragile and easily disturbed.	
	ATT3: Humans can alter the natural environment to meet their requirements.	
	ATT4: Human interference with nature frequently has disastrous consequences.	
	ATT5: If nothing changes, we will soon face a major environmental disaster.	
	ATT6: The environmental crisis has been greatly exaggerated.	
	ATT7: The Earth's space and resources are limited.	
Subjective Norms	SN1: People who are important to me think I should pursue a green entrepreneurial venture.	0.811
	SN2: My peers encourage me to consider starting an eco-friendly business.	
	SN3: My family and friends support me in engaging in green entrepreneurship.	
	SN4: Social approval influences my decision to pursue green entrepreneurship.	
Perceived Behavioural Control	PBC1: Locate a product or service gap that can help with sustainability.	0.825
	PBC2: Create a customer-pleasing, environmentally responsible product or service.	
	PBC3: Calculate customer demand for a sustainable product or service.	
	PBC4: Determine a reasonable price for a sustainable product or service.	
	PBC5: Estimate the amount of funds and working capital required for my long-term business	
Self-Efficacy	SE1: If I do it wholeheartedly, I can contribute to the environment.	0.850
	SE2: I can find a way to help solve environmental problems.	
	SE3: Solving environmental problems is a contribution we can make.	
Sustainable Business Performance	SB1: My customers are highly content.	0.870
	SB2: I have a well-managed relationship with suppliers.	
	SB3: I tried to minimize energy consumption.	
	SB4: I tried to reduce the waste.	
	SB5: I attempted to reduce air pollutant emissions.	
	SB6: Sales are increasing.	
	SB7: Net profit is increasing.	

4. Results

4.1 Demographic Profiles

A total of 347 questionnaires were returned out of 400 distributed to respondents. Most respondents are over 30 years old, comprising 244 respondents (70.3%). This followed with 26-30 (n=52, 15%) and 21-25 (n=51, 14.7%). One hundred respondents live in Selangor and Kuala Lumpur, respectively (28.8%). This was followed by Johor (n=82, 23.7%) and Negeri Sembilan (n=65, 18.7%). Regarding educational attainment, most respondents have obtained a secondary-level qualification, the Sijil Pelajaran Malaysia (SPM) (n=142, 40.9%). This was followed by bachelor's degree (n=88, 25.4%), Diploma (n=45, 12.9%), Sijil Tinggi Pelajaran Malaysia (STPM) (n=41, 11.8%), post-graduate (n=20, 5.7%), foundation (n=8, 2.3%), and others (n=3, 1%). When evaluating the business cycle, most respondents (148, 42.6%) have operated a business for more than 10 years. This was followed by 3-5 years (n = 86, 24.8%), 6-10 years (n = 85, 24.5%), and 1-2 years (n = 28, 8.1%). Table 2 shows the demographic distribution of respondents.

Table 2
Demographic profiles (n=347)

Profile	Frequency (n)	Percentage (%)
1. Age		
18-20 years old	0	0
21-25 years old	51	14.7
26-30 years old	52	15
More than 30 years old	244	70.3
2. State		
Selangor	100	28.8
Kuala Lumpur	100	28.8
Negeri Sembilan	65	18.7
Johor	82	23.7
3. Academic Qualifications		
Peperiksaan Menengah Rendah (PMR)	0	0
Sijil Pelajaran Malaysia (SPM)	142	40.9
Sijil Tinggi Pelajaran Malaysia (STPM)	41	11.8
Foundation	8	2.3
Diploma	45	12.9
Bachelor's degree	88	25.4
Post-graduate	20	5.7
Others	3	1
4. Business Cycle		
1-2 years	28	8.1
3-5 years	86	24.8
6-10 years	85	24.5
More than 10 years	148	42.6

4.2 Confirmatory Factor Analysis (CFA)

The model can be tested for suitability by looking at the Goodness of Fit value. The results of the CFA are obtained by examining factor loadings and model fit criteria. The loading factor limit is 0.5, meaning that items with a loading factor of less than 0.5 are deleted and not included in the following calculation. The model fit results in AMOS comprise the following indexes/parameters: Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), and Tucker–Lewis Index (TLI). The GFI, CFI, and TLI values ≥ 0.90 indicate a reasonable fit. If the CMIN/DF value is ≤ 3 , it indicates an acceptable fit [47]. RMSEA values less than 0.06 often indicate a good fit [48]. As shown in Figure 2, all loadings are above 0.50, which indicates the variables used are

valid. Overall, the SEM model achieved the following fit indices: CMIN/DF = 1.409, CFI = 0.974, GFI = 0.960, TLI = 0.950, and RMSEA = 0.037.

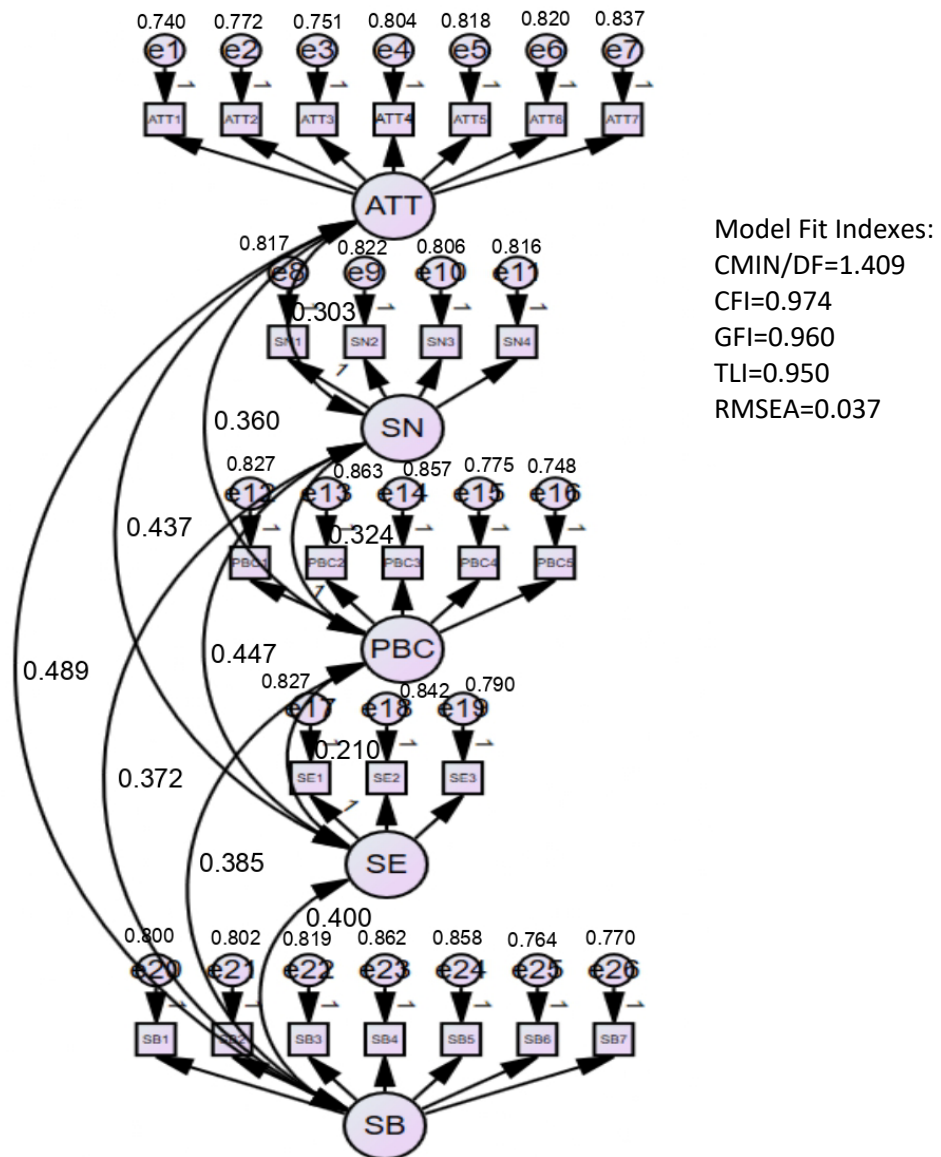


Fig. 2. CFA Model

4.3 Validity and Reliability Assessment

After going through the CFA process, unidimensionality, validity, and reliability were assessed before proceeding with the structural equation model (SEM). Referring to Table 3, it was found that the unidimensionality requirement was met, as all constructs had items with loading values of 0.50 and above [49]. The reliability requirement was also met because the construct reliability value (composite reliability) (CR) exceeded 0.60, and the AVE value for each central construct also exceeded 0.50 [50].

Table 3.

Items loading, Composite Reliability (CR), and Average Variance Extracted (AVE)

Variable	Items	Item Loadings	AVE	CR
Attitude	ATT1	0.740	0.628	0.921
	ATT2	0.772		
	ATT3	0.751		
	ATT4	0.804		
	ATT5	0.818		
	ATT6	0.820		
	ATT7	0.837		
Subjective Norms	SN1	0.817	0.664	0.888
	SN2	0.822		
	SN3	0.806		
	SN4	0.816		
Perceived Behavioral Control	PCB1	0.827	0.666	0.908
	PCB2	0.863		
	PCB3	0.857		
	PCB4	0.775		
	PCB5	0.748		
Self-Efficacy	SE1	0.827	0.672	0.860
	SE2	0.842		
	SE3	0.790		
Sustainable Business Performance	SB1	0.800	0.658	0.930
	SB2	0.802		
	SB3	0.819		
	SB4	0.862		
	SB5	0.858		
	SB6	0.764		
	SB7	0.770		

4.4 Discriminant Validity Assessment

Discriminant validity is seen from the square root value of AVE. Suppose the square root value of the AVE of a latent variable is greater than the correlation with all other latent variables. In that case, it has good discriminant validity [51]. In this research, the discriminant validity is demonstrated to be good because the square root value of the AVE of a latent variable is greater than the correlation with all other latent variables. In addition, the correlation between exogenous constructs must be less than 0.85. A correlation value between constructs exceeding 0.85 indicates that the measurement model may have a multicollinearity problem [51].

Table 4

Discriminant validity results

No.	Variable	1	2	3	4	5
1	Attitude	0.792				
2	Subjective Norms	0.303	0.814			
3	Perceived Behavioral Control	0.360	0.324	0.816		
4	Self-Efficacy	0.437	0.447	0.210	0.819	
5	Sustainable Business Performance	0.489	0.372	0.385	0.400	0.811

Note: Values in the diagonal show the square root of AVE

4.5 Hypothesis Testing

After identifying the conditions of the latent constructs' unidimensionality, validity, and reliability, the next step is to test the hypothesis about the relationship between the constructs. The standard regression coefficients and fit indices for the model are shown in Table 5. Based on the results, attitude ($\beta = 0.119, p < 0.001$), subjective norms ($\beta = 0.108, p < 0.001$), perceived behavioral control ($\beta = 0.300, p < 0.001$), and self-efficacy ($\beta = 0.400, p < 0.001$) significantly influence sustainable business performance. Thus, H1, H2, and H3 are accepted. This means that with a one-unit increase in the beta value of each predictor, sustainable performance will experience increases of 11.9% (attitude), 10.8% (subjective norms), 30% (perceived behavioural control), and 40% (self-efficacy). The findings also showed the direct effects of attitude ($\beta = 0.488, p < 0.001$), subjective norms ($\beta = 0.364, p < 0.001$), and perceived behavioral control ($\beta = 0.186, p < 0.001$) on self-efficacy. The beta coefficient represents the estimated change of 48.8%, 36.4%, and 18.6% in the self-efficacy for a one-unit change in attitude, subjective norms, and perceived behavioural control, respectively.

Table 5
Assessment of the direct effect

Path			β	S.E.	Remarks
Attitude	→	Sustainable Business Performance (c')	0.119***	0.065	H1 accepted
Subjective Norms	→	Sustainable Business Performance (c')	0.108***	0.047	H2 accepted
Perceived Behavioural Control	→	Sustainable Business Performance (c')	0.300***	0.050	H3 accepted
Self-Efficacy	→	Sustainable Business Performance (b)	0.400***	0.046	
Attitude	→	Self-Efficacy (a)	0.488***	0.050	
Subjective Norms	→	Self-Efficacy (a)	0.364***	0.043	
Perceived Behavioural Control	→	Self-Efficacy (a)	0.119***	0.065	

Note: *** $p < 0.001$; * $p < 0.05$; the direct influence of the independent variable on the dependent variable; path a, the direct influence of the independent variable on the mediating variable; path b, the direct influence of the mediating variable on the dependent variable.

Next, to test the significant effect of the mediator, the bootstrapping mediation variable analysis method is highly recommended. According to Preacher and Hayes [52], a mediation effect occurs when the 95% bootstrap confidence interval (CI) value, specifically the lower limit (LLCI) and the upper limit (ULCI), is not equal to zero. Hair *et al.* [49] suggested calculating the mediation effect through the indirect effect value, and a value greater than 0.08 indicates the presence of a mediator. In this regard, the results of the SEM analysis have confirmed that H4(a) and H4(b) are accepted, and H4(c) is rejected (see Table 6). Based on the results, the total influence value of attitude on sustainable business performance is 0.314 [0.119 + 0.195]. The direct influence of attitude on sustainable business performance is 0.119, which is smaller than the influence of the mediation effect (0.195). Thus, the relationship is influenced by a mediator, namely, self-efficacy. Similarly, the value of the total influence of subjective norm on sustainable business performance is 0.253 [0.108 + 0.145]. The direct influence of subjective norms on sustainable business performance is 0.108, which is smaller than the mediation effect of self-efficacy (0.145). Therefore, the relationship is influenced

and mediated by self-efficacy. On the other hand, the value of the total influence of subjective norm on sustainable business performance is 0.374 [0.300 + 0.074]. The direct influence of perceived behavioural control on sustainable business performance is 0.300, greater than the mediation effect of self-efficacy (0.074). Therefore, the relationship results from a direct result and is not mediated by self-efficacy.

Table 6

Assessment of the indirect and total effects

Path			Indirect Effect (ab)	t	Bootstrap (95% CI)		Total Effect (c)	Remarks
					LLCI	ULCI		
Mediation Effect via Self-Efficacy (ab)								
Attitude	→	Sustainable Business Performance	0.195***	6.400	0.082	0.123	0.314***	H4(a) accepted
Subjective Norms	→	Sustainable Business Performance	0.145***	3.150	0.021	0.115	0.253***	H4(b) accepted
Perceived Behavioural Control	→	Sustainable Business Performance	0.074	4.000	-0.037	0.120	0.374***	H4(c) rejected

Note: ***Indirect effects are significant at the 1% with bootstrap at 5000 and bias-corrected percentile method; path ab, indirect effect ($a \times b$); path c, total path ($c = c' + ab$).

Figure 3 portrays the study's final research model.

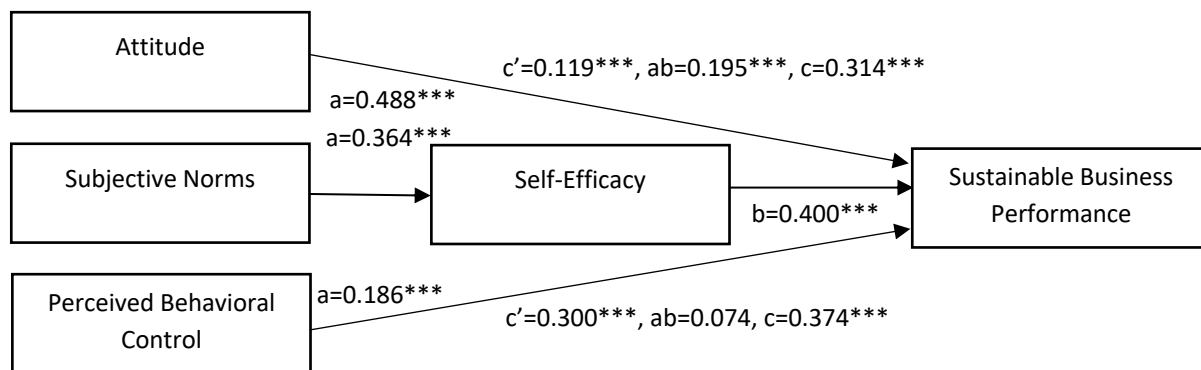


Fig. 3. Final research model

Note: path c' , the direct influence of the independent variable on the dependent variable; path a , the direct influence of the independent variable on the mediating variable; path b , the direct influence of the mediating variable on the dependent variable; indirect effect ($a \times b$); path c , total path ($c = c' + ab$).

5. Discussion

Sustainable business practices are strategies and operations that minimize negative environmental impacts while maximizing social and economic benefits [9]. These practices are increasingly important for businesses that want to remain competitive in today's environmentally conscious marketplace [5]. The findings discovered that attitude, subjective norms, perceived behavioural control, and self-efficacy significantly influence the sustainable business performance of

women entrepreneurs. As emphasized by past studies, such as those by Jusuf and Nuttavuthisit [15] and Mondal *et al.*, [16], attitudes significantly influence behaviour, determining whether entrepreneurs favor or disfavor the environment. Entrepreneurs who value sustainability in their business activities typically exhibit an ethical and responsible attitude [12,14]. Some negative human attitudes, such as greed and materialism, are fundamental human weaknesses that can lead to the arbitrary destruction of the environment. Entrepreneurs with a positive attitude towards environmental protection are more likely to adopt sustainable business practices, such as recycling, reducing chemical use, and conserving electricity. By adopting these sustainable practices, businesses can lower their operating costs, enhance their business image, and ultimately improve their overall performance. In addition, a positive attitude towards helping the community also positively impacts the social performance of businesses, as they tend to adopt fair employment principles, support local communities by providing employment opportunities, and engage in corporate social responsibility.

The results also indicated that subjective norms have a significant influence on sustainable business performance. The opinions of experts or people considered important and influential can also form confidence and subsequently influence the individual to exhibit a particular behaviour [18, 19,21]. Pareek and Bhamboo [53] found that consumers who are more aware of the negative environmental impact of conventional products tend to prefer products with environmentally friendly labels. Thus, the availability of products in the market can influence entrepreneurs to promote and produce sustainable products. Entrepreneurs who are influenced by good social norms will feel that their community and industry partners will support sustainability initiatives [22]. Additionally, a national ecosystem that emphasizes social responsibility will encourage businesses to adopt community sustainability practices, thereby enhancing worker safety and health. This highlights the use of various instruments, including legal, administrative, technical, economic, fiscal, and social, each of which is employed in a specific manner to function correctly and achieve the objectives of aligning with people's thoughts, thereby prompting them to act accordingly [24]. Indeed, a society's culture and human attitudes towards positive and negative values have a very close relationship with the conflict between development and the surrounding environment [34].

The study's findings also revealed the significant impact of perceived behavioural control on the sustainable business performance of women entrepreneurs. This means that entrepreneurs with knowledge of waste management, environmentally friendly technology, and social practices will practice more sustainable business [19]. Knowledge, awareness, and actions based on sustainability are key factors in promoting more responsible behaviour among entrepreneurs. Entrepreneurs must ensure that the products they produce can add value to the economy and society, and that their production will not result in environmental degradation through uncontrolled resource use and pollution [25]. Therefore, education not only aims to increase understanding of basic principles in the context of ecosystems, but also to foster proactive social attitudes and actions that protect the environment [26].

Second findings showed that self-efficacy significantly mediates the relationships between attitude, subjective norms, and sustainable business performance of women entrepreneurs. An entrepreneur's success largely depends on their readiness, specifically in terms of internal strength, including self-efficacy [31], a positive attitude, and social support. Past studies have also found that individuals with high self-efficacy are more likely to care for the environment and are motivated to maintain the balance of the ecosystem by creating sustainable solutions [27,31]. On the other hand, self-efficacy does not mediate the relationship between perceived behavioural control and sustainable business performance. The theory of planned behaviour (TPB) explains that if a person has an intention, they have the ability and freedom to carry out that behaviour. However, perceived

behavioural control can influence behaviour directly, which is consistent with these study findings [18]. This direct influence has also been supported by the past studies [17,19].

Theoretically, this study has highlighted the relationships between attitude, subjective norms, perceived behavioural control, self-efficacy, and sustainable business performance. The framework of this study is based on the theory of planned behaviour, which has been successfully tested and validated through the study's findings. This study has revealed that individual aspects, such as self-efficacy, should not be ignored, as they act as a catalyst. As implications, businesses should focus on designing products with minimal environmental and social impact. This can involve using sustainable materials, reducing waste in production, and ensuring energy-efficient manufacturing processes [4, 8].

Businesses can use social media channels to share their green initiatives, sustainability reports, and eco-friendly product features. Businesses can build a community of environmentally conscious consumers by sharing engaging content highlighting their environmental efforts. Another effective strategy is to partner with influencers who promote sustainability. These influencers can help spread awareness about the brand's green initiatives and reach a wider audience. Businesses should develop a clear environmental and social policy to overcome risks and impacts. This policy should include preventive, mitigation, and remedial actions to ensure sustainability [8]. Once the policy is developed, the business must implement appropriate actions and programs. This involves training, operational supervision, and regular performance measurement.

The government and relevant agencies should support businesses in investing in technology that reduces environmental and social impacts, such as renewable energy sources, efficient waste treatment systems, and water-saving measures. Holding training and education on sustainable business practices is crucial to increase awareness of their role in caring for the environment [32, 33]. Starting a sustainable business can be expensive; however, several government grants and incentives are available to help offset the costs. By channelling investment into sustainable projects, green finance helps reduce environmental risks and promotes economic growth and social well-being [7].

6. Conclusions

As sustainability becomes a key factor in consumer decision-making, businesses can align with these values by developing eco-friendly products, sustainable packaging, and transparency. Establishing a sustainable business is not just a trend but a necessity for the future. The journey may be challenging, but the environmental and economic rewards are well worth the effort. The study's objective is to examine the influence of attitude, subjective norms, perceived behavioural control, and self-efficacy on the sustainable business performance of women entrepreneurs. Second, it is to examine the mediating effect of self-efficacy on the relationships between attitude, subjective norms, perceived behavioural control, and sustainable business performance. The findings discovered that attitude, subjective norms, perceived behavioural control, and self-efficacy significantly influence the sustainable business performance of women entrepreneurs. The second finding showed that self-efficacy significantly mediates the relationships between attitude, subjective norms, and sustainable business performance of women entrepreneurs. Conversely, self-efficacy does not mediate the relationship between perceived behavioural control and sustainable business performance. This study has contributed to the advancement of the Theory of Planned Behavior (TPB) by validating the functions of attitude, subjective norms, and perceived behavioral control on sustainable business performance. This study has also confirmed the indirect role of self-efficacy as a substantial predictor of sustainable business performance. This confirms that psychological factors

can support sustainable business performance. This study also provides new evidence from developing countries, specifically in the context of women entrepreneurs.

Additionally, this study supports the recent trend toward sustainable business development. From a practical perspective, the study's findings provide policymakers with meaningful guidance on planning for the development needs of women entrepreneurs. Programs such as mentoring, coaching, and training can help increase self-efficacy, thus supporting the accomplishment of sustainable business performance. Although this study makes important contributions and has implications, it also has several limitations. First, this study employs a cross-sectional study method, meaning that data are collected through a questionnaire at a single point in time. The lack of control over variables means that cause-and-effect relationships cannot be established with certainty. Thus, future studies are encouraged to employ a longitudinal study. This study selects only four state contingents, namely Kuala Lumpur, Selangor, Johor, and Negeri Sembilan, which limits the generalization. In addition, this study relies entirely on a quantitative survey; therefore, qualitative methods with larger samples should be used to obtain more detailed findings. Future studies are also encouraged to expand the study model by including other variables such as personality, orientation, knowledge, family background, and others.

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