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Exploring the Relationship between Entrepreneurial Orientation and Ethics among Malaysian Women-owned MSMEs: A PLS Analysis

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ABSTRACT
Entrepreneurship is vital for modern economies, with entrepreneurial orientation (EO) being key for micro, small and medium-sized enterprises (MSMEs) to thrive. This study addressed the literature gaps by examining the EO, ethics, and business performance in women-owned MSMEs in Malaysia, considering the gender variations. The ethical dimension's role in influencing business performance was explored, leveraging the Partial Least Square (PLS) approach and data from 207 women-owned MSMEs. Three pivotal EO elements—risk-taking, proactiveness, and innovativeness—were identified through PLS regression analysis. The study enriched the literature by empirically probing connections between EO subcomponents, ethics, and business performance in underexplored Malaysian women-owned MSMEs. Findings underscored the critical role of EO and ethical practices in entrepreneurial success. Policymakers could glean valuable insights to develop supportive policies for women-owned MSMEs in Malaysia, emphasizing the need for user-friendly, consistent, and standardized policies across all MSMEs' sectors. Overall, this research contributed to fostering entrepreneurship, ethical practices, and gender equality, indirectly impacting SDG 4 by providing practical insights into entrepreneurship that benefit the learning and development of MSMEs.

Keywords: Business performance, entrepreneurial orientation, ethics, women-owned MSMEs.

INTRODUCTION

Entrepreneurship is widely recognized as a significant driver of economic advancement and is crucial in influencing societal and economic frameworks. Within the realm of micro, small, and medium-sized enterprises (MSMEs), entrepreneurial endeavors are fundamental to overall economic development [1]. Globally, there exist around 582 million entrepreneurs, with the United States notably distinguished as a prominent nation for entrepreneurship, with approximately 31 million entrepreneurs [2]. The entrepreneurial sector continues to grow, as exemplified by the establishment of 5.2 million new businesses, illustrating a growing interest in entrepreneurship and its beneficial impacts on the global economy [2]. Malaysian MSMEs, spanning various sectors like manufacturing, services, construction, agriculture, and mining, are characterized by their sales turnover and the number of full-time employees [3]. This classification takes into account economic shifts since 2005, including inflation, structural changes, and shifts in business practices [4]. According to the most recent data from the Department of Statistics, Malaysia (DOSM), MSMEs represented 97.4% (1,173,601 firms) of all establishments in Malaysia in 2022 [5]. Research has

predominantly focused on male entrepreneurs, while studies on women entrepreneurs have been limited, despite their increasing participation as business owners or managers [6], [7].

In Malaysia, the emergence of women-owned MSMEs brings a distinctive perspective to entrepreneurial endeavors, underscoring the importance of exploring the intricate relationship between Entrepreneurial Orientation (EO) and Business Performance (BP) [8] [9]. This analysis also delves into the ethical aspects within this sector, aligning with research indicating women tend to exhibit higher ethical standards compared to men [10]. EO, defined by qualities like innovation, risk-taking, and proactivity, is widely recognized as a pivotal element influencing organizational behavior and success [8], [11], [12]. Simultaneously, the ethical facet is essential for understanding how these businesses align with ethical norms as they operate [13], [14]. The specific focus on women-owned MSMEs reflects the growing recognition of women entrepreneurs' impact on reshaping global business environments [8], [9], [15]. However, there exists a research gap regarding the nuanced correlation between EO and ethics within this demographic, particularly in the context of Malaysian MSMEs.

2| LITERATURE REVIEW:

a) Overview of Women-owned SMEs

Research suggests that both men and women are often motivated to enter entrepreneurship due to a shared desire for wealth, the chance to pursue their business concepts, the appeal of start-up environments, a lifelong dream of business ownership, and a preference for independence from traditional employment [8], [9], [16], [17], [18]. In fact, [18] noted that differences in how men and women perceive push and pull factors, determining necessity or opportunity orientations, can impact their perceived success levels in business ventures. Furthermore, beyond their passion for business and entrepreneurship, research has shown that women's primary motivation for becoming entrepreneurs is often to contribute to family income or, in various cases, to assume the role of the head of the household regardless of lower educational levels, inadequate skills, and age factors [16], [17], [19]. Hence, in light of the distinctive intentions and motivations propelling women to embark on entrepreneurial ventures, there arises an imperative for delving deeper into the study of women-owned MSMEs. This research aimed to address the existing gaps and expand the examination of variables influencing the BP of women-owned MSMEs, with a specific focus on Malaysia. It is believed that despite the continuous challenges, many success stories of women entrepreneurs thriving in the business world have emerged through persistent efforts and battles.

b) Women-owned SMEs Business Performance

In the context of MSMEs, owners often in low-income countries, success metrics can vary. Necessity-driven entrepreneurs, common in such regions, typically gauge success based on sales and profits, often overlooking other indicators like turnover volume, job creation, and production volume [20], [21]. Conversely, women-owned MSMEs define success by income generation and contributing to their families' welfare [22]. The perception of success in businesses owned by women may differ as they tend to be smaller in size and exhibit slower growth rates compared to conventional success metrics like financial profits [21], [22], [23]. Various definitions of success, whether based on financial or non-financial criteria, intrinsic or extrinsic motivations, illustrate the importance of performance indicators in assessing a business's financial health and overall standing These indicators help determine success or failure from specific perspectives, aiding in assessing the overall performance and impact of a business, firm, or organization [24].

In the case of Malaysian women-owned MSMEs, underperformance may stem from a lack of intangible resources distinct from their male counterparts [22], encompassing individual traits, management practices, goals, motivations, networking, and EO [25]. Studies have indicated that women tend to demonstrate higher ethical standards than men [26]. EO and ethics are proposed to be interconnected mechanisms linking a firm's intangible resources and its performance, aligning with the Resource-Based View (RBV) theory [27]. Therefore, this study delves further into the connections between EO, ethics, and BP in women-owned MSMEs in Malaysia, exploring the interplay of these factors as depicted in Figure 1.

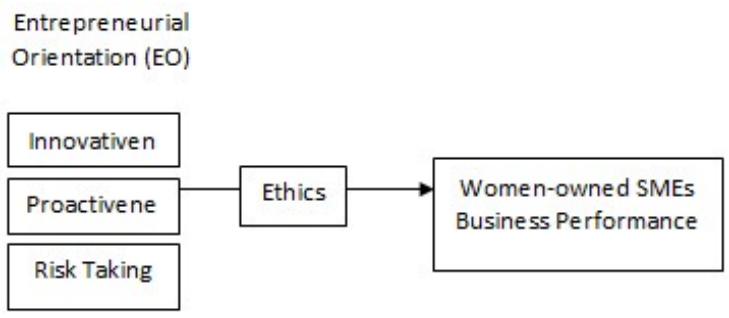

Fig. 1: The Relationships between EO, Ethics and Women-owned MSMEs BP.

c) Entrepreneurial Orientation (EO) and Women-owned MSMEs' Business Performance

The study defines EO as encompassing innovativeness, proactiveness, and risk-taking, which are key dimensions often studied to elucidate variations in the construct and are known to significantly impact firm growth [28], [29]. Consistent with prior research on EO, including its dimensions and the strong correlations among them, it is anticipated that all three dimensions positively correlate with BP [30]. Despite the growing number of women entrepreneurs and the significant impact of EO on their success, there is a lack of extensive research on how EO influences the business performance of women-owned MSMEs in Malaysia. As a result, the hypothesis proposes:

H1: There is a significant relationship between innovativeness and women-owned MSMEs' BP.

H2: There is a significant relationship between proactiveness and women-owned MSMEs' BP.

H3: There is a significant relationship between risk-taking and women-owned MSMEs' BP.

d) The Mediating Effect of Ethics on the Relationship Between Entrepreneurial Orientation (EO) and Women-owned MSMEs' Business Performance

Ethics plays a crucial role in the context of small-business managers, with research indicating that managers in small businesses tend to exhibit higher ethical standards compared to other groups or subordinates. This suggests that small-business managers can have a more significant impact on the ethical atmosphere within their organizations, especially when compared to managers in larger corporations. Additionally, studies have explored ethics as a mediator, showing positive and significant outcomes. In this study, ethics were employed as a mediator to investigate the relationship between EO and BP in women-owned MSMEs. From the RBV perspective, EO influences firm performance by creating resources deeply embedded in the organization's history, ethics, and culture. As a result, this study hypothesized that ethics act as a mediating factor between EO and the BP of women-owned MSMEs, emphasizing the importance of ethical considerations in shaping business performance. Thus, this study hypothesized that:

H4a: Ethics mediates the relationship between innovativeness and women-owned MSMEs' BP.

H4b: Ethics mediates the relationship between proactiveness and women-owned MSMEs' BP.

H4c: Ethics mediates the relationship between risk-taking and women-owned MSMEs' BP.

3] METHODOLOGY:

The study focused on the variables of EO, ethics, and BP, all measured using a 7-point Likert scale ranging from "strongly disagree" to "strongly agree." To assess EO, multidimensional dimensions like innovativeness, proactiveness, and risk-taking were utilized as separate components, each consisting of three items, following common practices in EO studies [33]. Ethics were evaluated with a scale comprising twenty-five items developed by [34], while BP was measured using a nine-item scale by [35]. The research employed a quantitative approach and utilized surveys as the data collection method, a widely accepted practice in business research [36]. The study targeted women owners and managers of firms, collecting primary data through questionnaires measuring EO, ethics, and BP in women-owned SMEs, along with demographic and company information. The total population of women-owned MSMEs from Peniagawati and Usahanita websites was around 9,000 companies, with a sampling frame of 368 firms determined based on recommendations [37] and guidelines [38]. A systematic sampling technique was used, resulting in 207 eligible and comprehensive responses from the total sample, yielding a response rate of 21%. Detailed demographic profiles of the respondents can be found in **Table 1** of the study.

Table 1: Respondents' Demographic Profiles

Demographic	Description	Frequency	Percent	N
Current Age Group	Below 25	9	4.3	207
	26-30	17	8.2	
	31-35	27	11.6	
	36-40	46	22.2	
	41-45	33	15.9	
	46-50	32	15.5	
	Above 50	46	22.2	
Age Group When Started Owning/ Managing The Business	Below 25	28	13.5	207
	26-30	43	20.8	
	31-35	47	22.7	
	36-40	47	22.7	
	41-45	28	13.5	
	46-50	11	5.3	
	Above 50	3	1.4	
Marital Status	Single	24	11.6	207
	Married	159	76.8	

	Widowed	24	11.6	
Race	Malay	189	91.3	
	Chinese	11	5.3	
	Indian	5	2.4	
	Others	2	1.0	
No. of Children	0	26	12.6	207
	1	13	6.3	
	2	46	22.2	
	3	39	18.8	
	4	32	15.5	
	5	27	13.0	
	6	10	4.8	
	7	4	1.9	
	8	6	2.9	
	10	3	1.4	
	12	1	0.5	
State	Johor	18	8.7	207
	Kedah	5	2.4	
	Kelantan	21	10.1	
	Melaka	11	5.3	
	N. Sembilan	14	6.8	
	Pahang	9	4.3	
	Pulau Pinang	13	6.3	
	Perak	14	6.8	
	Perlis	19	9.2	
	Sabah	1	0.5	
	Sarawak	1	0.5	
	Selangor	32	15.5	
	Terengganu	7	3.4	
	Kuala Lumpur	38	18.4	
	Labuan	1	0.5	
	Putrajaya	3	1.4	
Education Background	Primary	8	3.9	207
	Secondary	54	26.1	
	Diploma	50	24.2	
	First Degree	71	34.3	
	Master	12	5.8	
	PhD	4	1.9	
	Others	8	3.9	
Total Years of Experience	1-5	24	11.5	207
	6-10	55	26.6	
	11-15	45	21.7	
	16-20	30	14.5	
	Above 20	53	25.6	
Total Years of Experience with The Firm/ Company	1-5	88	42.2	207
	6-10	71	34.3	
	11-15	24	11.6	
	16-20	10	4.8	
	Above 20	14	6.8	

The survey included 207 women owner-managers, with respondents aged between 36 to 40 years old and above 50 years old, each constituting 22.2% (n=46) of the total. The majority of these women started owning or managing their businesses between the ages of 31 to 40, representing 45.4% (n=94) of the participants. In terms of marital status, 76.8% of the respondents stated they were married based on the data presented in Table 1. The survey revealed that the majority of the respondents identified as Malay, making up 91.3% (n=189) of the sample. Regarding educational background, 34.3% (n=71) of the respondents held a first degree. Additionally, 22.2% (n=46) of the participants reported having two children. Geographically, Kuala Lumpur was reported as the main location for conducting business by 18.4% (n=38) of the respondents. About work experience, most respondents had a total experience ranging from six to 10 years, accounting for 26.6% (n=55) of the participants. Notably, the data indicated that 42.5% (n=88) of the

respondents had been with their respective firms for one to five years based on Table 1.

4] RESULTS AND DISCUSSION:

The data gathered from respondents was analyzed using Smart-PLS, a method employed for evaluating the measurement and structural models to promptly assess convergence and discriminant validity [39], [40]. The questionnaire's subfactor reliability was verified using Cronbach's Alpha, resulting in a high coefficient value of 0.969, exceeding the recommended threshold of 0.7 [40], [41], [42]. Given the study's focus on factors like EO, ethics, and BP in women-owned MSMEs in Malaysia, the PLS modeling process involved two stages.

a) Measurement Model

In the study utilizing Smart PLS 4, the model was experimented with two levels: the measurement model and the structural model, as outlined by [39], [40], and [43]. The research primarily focused on examining the relationships among EO, ethics, and BP in women-owned SMEs in Malaysia. Validity tests, including discriminant validity, convergent validity, and measurement model reliability, were conducted according to [44] and [45].

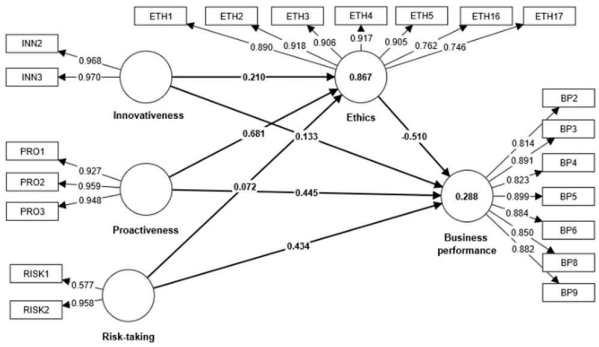

Fig. 2: Measurement Model

In the study's initial phase, the reliability and validity of the measurement model were rigorously evaluated. The study set a minimum factor loading threshold of 0.45 for sub-factors, in line with recommendations from [46], and accepted subfactor loading measurements exceeding 0.50, as suggested by [42] and [47]. Following the dropout analysis, **Figure 2** was used for further examination of the results. Regarding reliability assessment, Cronbach's Alpha and composite reliability were employed to evaluate the internal consistency of the measurement model. In PLS-SEM, composite reliability was favored over Cronbach's Alpha, as it accounted for potential differences in indicator consistency, as noted by [40] and [42]. The study adopted a cut-off value of 0.7 for composite reliability, and the lowest Cronbach's Alpha value was expected to exceed 0.6, aligning with recommendations from [40], [42], and [47]. In **Table 2**, the factor loadings, composite reliability, and Cronbach's Alpha values generated by the PLS algorithms were presented. The study found that Cronbach's Alpha exceeded 0.904, and the composite reliability score was higher than 0.852, indicating a highly reliable and trustworthy model based on these metrics. The study assessed convergent validity by using tests such as Average Variance Extracted (AVE), composite reliability scores, and Cronbach's Alpha, analyzed with Smart software, and the findings were presented in **Table 2.** The results indicated that the dimension sub-factors met the criteria suggested by [40], with values surpassing the 0.7 thresholds for both Cronbach's Alpha and composite reliability scores. Additionally, the AVE test evaluates the amount of variance attributable to a construct relative to the variance due to measurement errors. The results in **Table 2** confirmed that the AVE scores for the constructs were above 0.602, indicating strong convergent validity for the study's measures.

Table 2: Factor Loading of Constructs

Construct	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	(AVE)
Business Performance	BP2	0.814	0.943	0.950	0.747
	BP3	0.891			
	BP4	0.823			
	BP5	0.899			
	BP6	0.884			
	BP8	0.850			
	BP9	0.882			
Innovativeness	INN2	0.968	0.935	0.936	0.939
	INN3	0.970			
Proactiveness	PRO1	0.927	0.940	0.942	0.893
	PRO2	0.959			
	PRO3	0.948			

Risk-Taking	RISK2 RISK3	0.577 0.958	0.904	0.852	0.626
Ethics	ETH1 ETH16 ETH17 ETH2 ETH3 ETH4 ETH5	0.890 0.762 0.746 0.918 0.906 0.917 0.905	0.944	0.956	0.750

Discriminant: As per [47], discriminant validity refers to the degree to which any single construct is diverse from the additional constructs in the model. In the model, the sub-factors of every construct should be diverse from those of other constructs. The values recorded in **Tables 3 and 4** express the diagonal line of standards covering the AVE square root and construct correlations.

In assessing the model's validity and multicollinearity, calculating the heterotrait–monotrait (HTMT) ratio is essential; HTMT measures the relationship between correlations across traits and within each trait [47]. If the HTMT value exceeds 0.9, the test fails to differentiate between constructs. As per the data in Table 3, all variables have met the threshold value, confirming that the reflective model has successfully established discriminant validity.

Table 3: Discriminant Validity (HTMT)

	BP	Ethics	INN	PRO-A	Risk-T
BP					
Ethics	0.676				
INN	0.457	0.505			
PRO-A	0.478	0.670	0.522		
Risk-T	0.621	0.424	0.322	0.480	

In **Table 4** of the study, the Average Variance Extracted (AVE) is observed to meet the acceptable criteria. The Fornel-Larker criterion test was utilized to evaluate the discriminant validity of the research instrument. This test assesses whether the research instrument effectively discriminates between different constructs. The results in **Table 4** demonstrate that the square roots of the correlations with other constructs for each variable are notably higher than the sums of squares within each construct. This outcome indicates that the research instruments possess discriminant validity, effectively distinguishing between the various constructs being analyzed in the study.

Table 4: Discriminant Validity (Fornell-Larcker)

	BP	Ethics	INN	PRO-A	Risk_T
BP	0.864				
Ethics	0.367	0.866			
INN	0.427	0.856	0.969		
PRO-A	0.455	0.923	0.865	0.945	
Risk-T	0.500	0.815	0.800	0.845	0.791

b) Structural Model Analysis

In the evaluation of the structural model using the PLS-SEM) approach, researchers utilized Smart PLS 4.0 to determine the path coefficients among variables. This estimation occurred during the second step of the PLS-SEM process. The research model was thoroughly examined, and hypotheses were tested using this structural approach. To assess the significance of the estimated path coefficients, p-values and t-values were calculated. By the criteria set forth, a hypothesis is deemed acceptable if the t-value exceeds 1.96, the p-value is less than 0.05, and vice versa [40,42,47]. The outcomes of the bootstrapping approach, crucial for hypothesis testing, are presented in **Fig. 3 and Table 5.**

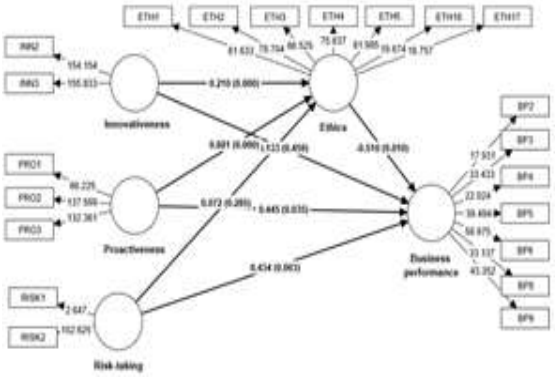

Fig. 3: Structural Model

Table 5: Path Coefficients with Direct Hypothesis Results

Hypo-thesis	Path		B value	STDEV	T value	P values	Decision
H1	INN ➔BP		0.133	0.179	0.741	0.459	Not Supported
H2	Pro-A ➔ BP		0.445	0.210	2.114	0.035	Supported
H3	Risk ➔ BP		0.434	0.144	3.008	0.003	Supported

Considering the expected associations, it is obvious that innovativeness has a considerable positive influence on BP (β = 0.133, t = 0.741, p-value = 0.459), not supporting H1 (innovativeness needs to be improved in BP). The data further demonstrated that proactiveness has a statistically significant positive influence on BP (β = 0.445, t = 2.114, p-value = 0.035), confirming hypothesis H2. Risk-taking also has a statistically significant positive influence on BP (β = 0.434, t = 3.008, p-value = 0.003), showing support for H3.

The study found that innovativeness, proactiveness, and risk-taking collectively explained 28% of BP in women-owned MSMEs (R2=0.288). Despite some insignificant results, these dimensions of EO remain crucial predictors of firm success, being significantly linked to performance. Recent research in the Malaysian context also supports the significant relationships between innovativeness, proactiveness, risk-taking, and the BP of women-owned MSMEs [48]. The study emphasizes the importance of fostering all aspects of EO to achieve success in the dynamic environment shaped by globalization, regulatory changes, reduced trade barriers, market expansion, and technological advancements in Malaysia's MSME sector. While innovativeness may have shown as insignificant in this study, the research underscores the necessity for MSMEs in Malaysia to be efficient and bold in nurturing every facet of EO to thrive in today's business landscape [36], [49, [50].

c) Mediation Analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a method commonly used to analyze mediation effects [51], [52]. This study focuses on the indirect relationship concerning the mediating role of ethics in the connections between innovativeness, proactiveness, risk-taking, and BP in women-owned MSMEs. The initial step involved examining the significance of innovativeness, proactiveness, and risk-taking with ethics as a mediator. Based on the results in **Table 6**, all of the constructs were found to have a negative path, significant and insignificant relationships with the BP in Malaysia: innovativeness (β=-0.107, t=-2.877, p<0.004), proactiveness (β=-0.348, t=2.485, p<0.013) and risk-taking (β=-0.037, t=0.734, p<0.463). For Hypothesis 4b, the relationship between risk-taking and BP was found not to be meditated by ethics. These results are consistent with existing literature on the relationship between ethics and the performance of women-owned MSMEs [53], [54], [55], [56], [57], which have highlighted the influence of owner-managers' ethical orientation in organizations. Thus, this study's findings reinforce the argument that ethics may play a mediating role between EO and the performance of women-owned MSMEs.

Table 6: Path Coefficient with Indirect Hypothesis Results

Hypo-thesis	Path	B value	STDEV	T value	P values	Decision
H4a	Pro_A ➔ Ethics ➔ BP	-0.348	0.140	2.485	0.013	Supported
H4b	Risk-T ➔ Ethics ➔ BP	-0.037	0.050	0.734	0.463	Not Supported
H4c	INN ➔ Ethics ➔ BP	-0.107	0.037	2.877	0.004	Supported

CONCLUSION

The study's results carry both theoretical and practical implications, particularly for Malaysian women-owned MSMEs. It highlights the importance of variables like innovativeness, proactiveness, risk-taking, and ethics in the context of women-owned MSMEs, contributing to theoretical frameworks examining their impact on business performance. By directly assessing the effects of innovativeness, proactiveness, and risk-taking on the performance of women-owned

MSMEs, the study expands upon Resource-Based View theory. Additionally, by identifying and testing the effects of these crucial resources, the study enhances the application of RBV theory in understanding MSME success. The findings offer actionable insights for women-owned MSMEs in Malaysia, aiding them in recognizing the most influential intangible resources for their business performance, such as innovativeness, proactiveness, risk-taking, and ethical practices. The study's value extends to Malaysian government entities like SME Corp. and other agencies, providing practical insights on how policy and support measures can bolster the development of these vital resources among women entrepreneurs. Business practitioners can leverage the empirical evidence to tailor strategies that enhance these key Resources Within Their Organizations, Potentially Boosting Overall Performance. Academic Researchers Benefit From A Deeper understanding of the mechanisms driving MSME success, paving the way for further exploration and refinement of entrepreneurship theories and practices. In essence, this study not only validates the importance of specific intangible resources in women-owned MSMEs within academic literature but also offers practical guidance that can shape policy, support services, and business strategies to enhance the performance of these enterprises in Malaysia.

6] IMPLICATIONS OF THE STUDY

The study's results offer theoretical implications for future research, particularly focusing on variables like innovativeness, proactiveness, risk-taking, and ethics in Malaysian women-owned MSMEs. It advances existing knowledge by exploring the direct impact of these variables on BP and extends the RBV theory by identifying key resources influencing MSME success. Notably, innovativeness, proactiveness, and risk-taking show significant associations with women-owned MSMEs' performance, providing practical insights for women-owned SMEs, Malaysian government agencies, business practitioners, and researchers. This study aids in understanding how intangible resources impact SME performance, enabling both government and owner-managers to leverage empirical evidence to enhance their SME operations.

7] LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDY

The limitations highlighted in this study offer valuable insights for guiding future research efforts:

a) **Cross-Sectional Nature**: The study's cross-sectional design collected data at a single time point, hindering the tracking of changes over time in variables such as innovativeness, proactiveness, risk-taking, ethics, and business performance among women-owned MSMEs [10]

b) **Generalizability Concerns**: Caution is advised in generalizing the empirical findings due to a low response rate, underrepresentation of respondents from specific regions and ethnic groups, and potential bias towards Malay entrepreneurs caused by survey instrument translation. Generalizability beyond the study's scope may be limited [10].

c) **Subjective Measures:** Relying on subjective measures can introduce performance evaluation biases, as these assessments can be influenced by the owner-managers temporary mindset or emotions when responding to the questionnaire. This subjectivity may not always align with objective financial performance metrics [10].

d) **Gender-Specific Instruments**: The absence of gender-specific measuring instruments tailored for female entrepreneurs in the study may overlook the unique values, needs, and challenges faced by women entrepreneurs. Developing or using instruments that account for the experiences and perspectives of women entrepreneurs could enhance future research accuracy and relevance [10].

Addressing these limitations can lay the groundwork for more comprehensive and inclusive research on the interplay between EO, ethics, and BP in women-owned MSMEs, facilitating broader applicability and deeper insights into these critical domains.

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