Volume 8 Number 1 (2026)
January-April 2026
Page: 610-626

E-ISSN: 2656-4491
P-ISSN: 2656-4548
DOI: 10.37680/scaffolding.v8i1.8617

SCAFFOLDING
Jurnal Pendidikan Islam dan Multikulturalisme

DETERMINATION OF ENTREPRENEURIAL EDUCATION AND ATTITUDES, SUBJECTIVE NORMS, AND ENTREPRENEURIAL INTENTIONS TOWARDS ECOPRENEUR BEHAVIOR OF CULINARY ENTREPRENEURS IN THE SPECIAL REGION OF YOGYAKARTA

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Submitted: 05/12/2025 Revised: 16/01/2026 Accepted: 19/01/2026 Published: 21/02/2026

Abstract

This study aims to analyze the effects of entrepreneurship learning, entrepreneurial attitudes, subjective norms, and entrepreneurial intentions on ecopreneurial behavior. Guided by the Theory of Planned Behavior (Ajzen, 1991), the research employed a quantitative approach using path analysis to examine direct and indirect relationships among the variables. This study examines how entrepreneurship learning influences ecopreneurial behavior through attitudes, subjective norms, and entrepreneurial intention. Primary data were collected through questionnaires from culinary MSME entrepreneurs in the Special Region of Yogyakarta. The research population comprised active culinary entrepreneurs, with samples selected using purposive sampling. Data were analyzed using Structural Equation Modeling (SEM) with AMOS to test direct and indirect relationships among variables and validate the proposed behavioral model. The findings show that entrepreneurship learning significantly enhances entrepreneurial attitudes and intentions, with intention mediating the relationship between learning and ecopreneurial behavior. Experiential learning, mentoring, and formal education emerge as key drivers of sustainable entrepreneurial intention. Overall, effective entrepreneurship learning strengthens ecopreneurial behavior, supporting sustainable economic development among culinary entrepreneurs.

Keywords Entrepreneurial Attitudes, Innovative Behavior of Entrepreneur, Entrepreneurial Entrepreneurial Intentions, Learning, Subjective Norms.

INTRODUCTION

This study examines the influence of entrepreneurship learning, entrepreneurial attitude, subjective norms, and entrepreneurial intention on ecopreneurial behavior among culinary entrepreneurs in the Special Region of Yogyakarta. The topic is grounded in the growing global urgency to align entrepreneurial practices with environmental sustainability, as small and medium enterprises (SMEs) play a significant role in both economic growth and ecological impact. The urgency to align entrepreneurial practices with environmental sustainability is particularly salient in Yogyakarta, where small and medium enterprises (SMEs) form the backbone of the local economy while simultaneously exerting cumulative ecological pressure. Indonesia hosts more than 64 million SMEs, contributing over 60% of the national GDP (Kementerian Keuangan RI, 2024), and Yogyakarta reflects this national structure with more than 300,000 registered SMEs operating across sectors such as culinary services, creative industries, handicrafts, and tourism. Small and medium enterprises (SMEs) are pivotal in driving both economic growth and environmental sustainability, particularly in regions like Yogyakarta, Indonesia. SMEs in Yogyakarta, especially those in the tourism sector, have been instrumental in integrating ecological values into their business practices despite resource constraints. This is achieved through resource bricolage, which involves the creative reuse of materials, leveraging community networks, and embedding local cultural values such as the Javanese concept of *hamemayu hayuning bawana* (maintaining the beauty of the world) into their operations (Rathmaningrum & Yulianto, 2025). These practices not only appeal to both local and international customers but also establish these SMEs as credible eco-entrepreneurs. Moreover, the sustainability of SMEs in Yogyakarta is significantly influenced by local government initiatives, digital financial literacy, and entrepreneurial competencies. Government programs such as incubation initiatives, the Jogja Mark, and the Sibakul Jogja platform have been crucial in enhancing the long-term viability of these businesses. Digital financial literacy, in particular, has a strong impact on sustainability, emphasizing the importance of secure payment systems, budgeting, and record-keeping (Sumiati et al., 2026). Additionally, financial literacy and social capital are essential in improving the resilience and environmental management systems of SMEs (Suyanto, 2022).

However, challenges remain, particularly in industries like batik, which is known for its high environmental impact due to excessive water use and CO2 emissions. Implementing green accounting practices can help mitigate these effects and improve sustainable performance (Indriastuti et al., 2022). Overall, the integration of local cultural values, government

support, and financial literacy is are key driver in aligning entrepreneurial practices with environmental sustainability in Yogyakarta.

In Indonesia, despite numerous entrepreneurship programs, the integration of environmental values into entrepreneurial education remains limited, making the transition toward green and sustainable entrepreneurship an important research focus. The economic phenomenon addressed in this paper is the gap between increased entrepreneurial education and the relatively low adoption of ecopreneurial behavior among local business owners. Therefore, the central research question is: To what extent do entrepreneurship learning, attitudes, subjective norms, and intentions influence the development of ecopreneurial behavior among culinary entrepreneurs?

Entrepreneurship education is widely recognized as a strategic instrument in shaping individuals' entrepreneurial attitudes and behaviors that contribute to economic growth and innovation (Aly et al., 2021; Baggen et al., 2022a; Kusumojanto et al., 2021a). In the context of developing countries such as Indonesia, entrepreneurship education plays a crucial role in reducing youth unemployment and fostering a creative economy (*Adisel*, n.d.; Aly et al., 2021; Baggen et al., 2022b; Chilenga et al., 2022; Diva et al., n.d.; Fute et al., 2024). According to McClelland (Pardee, 1990; Rybnicek et al., 2017), personal achievement significantly influences one's entrepreneurial drive, while (Awaah et al., 2023; Castro et al., 2021; Gabrielsson & Politis, 2012; and C. K. Wang & Wong, 2004) emphasized the importance of educational background and work experience in developing entrepreneurial interest. The educational process, when designed purposefully, provides structured opportunities to nurture entrepreneurial intention and self-efficacy, distinguishing it from passive environmental influences (Awotunde & van der Westhuizen, 2021; Castro et al., 2021; Chereau & Meschi, 2022; Christensen et al., 2023; Gabrielsson & Politis, 2012; Ghouse et al., 2024; Yousaf et al., 2021).

The novelty of this study lies in its integration of the Theory of Planned Behavior (Ajzen, 2011) with the concept of ecopreneurship, applying it to the culinary sector within a developing country context. Previous studies have primarily focused on general entrepreneurial intention or environmental awareness in isolation, without empirically linking structured entrepreneurship learning to sustainable behavioral outcomes. This paper fills that gap by empirically demonstrating how specific learning dimensions, mentoring, experiential, vicarious, and pedagogical, collectively drive the emergence of environmentally conscious entrepreneurial behavior.

The theoretical framework of this study is grounded in the Theory of Planned Behavior (Ajzen, 2011), which posits that attitude toward behavior, subjective norms, and perceived behavioral control collectively predict intention and subsequent behavior. Previous studies (Aga & Singh, 2022; Anderson, 2023; Awotunde & van der Westhuizen, 2021; Bazan, 2022; Chereau & Meschi, 2022; Christensen et al., 2023; Kobylińska, n.d.; Wijayati et al., 2021) confirmed that entrepreneurial attitude and subjective norms significantly influence entrepreneurial intention and behavior, though the magnitude and consistency of their effects remain debated across contexts.

Given these conceptual developments, this study aims to empirically examine the effects of entrepreneurship learning, entrepreneurial attitudes, subjective norms, and entrepreneurial intentions on ecopreneurial behavior among culinary entrepreneurs in Yogyakarta. The results are expected to enrich the understanding of entrepreneurial behavior formation within higher education contexts and to support sustainable, environmentally responsible entrepreneurship in Indonesia.

METHOD

This study employed an explanatory or correlational research design using a non-experimental quantitative approach (Bloomfield & Fisher, 2019; Novosel, 2022; Takona, 2024). The research aimed to test and explain causal relationships among the variables entrepreneurship learning, entrepreneurial attitude, subjective norm, entrepreneurial intention, and ecopreneurial behavior based on the Theory of Planned Behavior (Ajzen, 1991, 2011). A cross-sectional survey method was applied, in which data were collected simultaneously within a limited period from a predefined population of culinary entrepreneurs in the Special Region of Yogyakarta.

This study employed primary and secondary data to examine the relationships between entrepreneurship learning, entrepreneurial attitude, subjective norms, entrepreneurial intention, and ecopreneurial behavior. Primary data were collected directly from respondents through a structured questionnaire designed to capture individual perceptions, learning experiences, and entrepreneurial behaviors. The population consisted of entrepreneurs who had previously participated in entrepreneurship education or training programs, and the sample size followed SEM requirements, ranging from 100 to 200 participants. The main instrument used was a structured questionnaire employing a five-point Likert scale (Alabi & Jelili, 2022; Dourado et al., 2021; Jebb et al., 2021) to measure responses from “strongly disagree” (1) to “strongly agree” (5). The instrument

covered four indicators of entrepreneurship learning experiential learning, vicarious learning, education and training, and mentoring—alongside indicators for entrepreneurial attitude, subjective norms, intention, and behavior. Prior to distribution, validity and reliability tests were conducted (Adeyemi, 1 C.E.; Duckett, 2021; Heale & Twycross, 2015; Thi & Nha, 2021; B. Wang et al., 2023) to ensure instrument accuracy.

Data were analyzed using Structural Equation Modeling (SEM) with AMOS software (Huang et al., 2023; Lütfi SÜRÜCÜ et al., n.d.), allowing simultaneous testing of exogenous and endogenous variables. The SEM analysis involved seven procedural stages: conceptual model development, path diagram creation, model specification, matrix input selection, identification assessment, goodness-of-fit evaluation, and interpretation/modification of the final model (Cepeda-Carrión et al., 2022; J. Hair & Alamer, 2022; J. F. Hair et al., 2021; Huang et al., 2023). Secondary data were obtained from relevant documents, institutional reports, and previous research related to entrepreneurship education, ecopreneurship, and small business development in Indonesia. These data were used to strengthen the contextual background of the study and to support the interpretation of empirical findings.

The research was conducted in the Special Region of Yogyakarta, which is widely recognized as a center of education, creative economy, and culinary-based micro and small enterprises. Data collection took place across several administrative areas, including Yogyakarta City, Sleman Regency, Bantul Regency, Kulon Progo Regency, and Gunungkidul Regency. These locations were selected because they represent diverse urban and semi-rural entrepreneurial environments while sharing similar socio-cultural characteristics. Yogyakarta was chosen as the research site due to its strong entrepreneurial ecosystem, the high concentration of culinary MSMEs, and the active role of universities and local governments in promoting entrepreneurship and sustainable business practices.

FINDINGS AND DISCUSSION

Findings

The data analysis, conducted using Structural Equation Modeling (SEM) through AMOS, revealed several statistically significant relationships among the examined variables. The findings indicated that entrepreneurship education had a direct, positive, and significant influence on both entrepreneurial intention and entrepreneurial attitude/ecopreneur ($p < 0.05$). Respondents who

engaged in experiential and vicarious learning, formal education, and mentoring demonstrated stronger intentions to start and sustain entrepreneurial ventures. The descriptive analysis showed that the entrepreneurship education variable achieved an effectiveness score of 69.50%, categorized as moderately effective. Among its four indicators, vicarious learning contributed the highest effect (72.83%), followed by experiential learning (71.92%), mentoring (67.12%), and training and education (66.13%).

Furthermore, ecopreneur exhibited a significant and positive effect on entrepreneurial intention, with a path coefficient of 0.359 and a p-value < 0.05. The mean attitude effectiveness was 68.38%, while evaluation outcome (69.33%) and behavioral belief (67.42%) emerged as the most influential indicators. In contrast, subjective norms did not show a significant direct effect on innovative or ecopreneurial behavior (path = 0.424; p > 0.05).

Indirectly, entrepreneurship education influenced innovative and ecopreneurial behavior through the mediation of entrepreneurial attitude and intention, while subjective norms affected behavior indirectly through entrepreneurial intention. These findings confirm the Theory of Planned Behavior (Ajzen, 1991), highlighting that learning processes and attitudes play a critical role in shaping entrepreneurial intentions, which ultimately drive ecopreneurial behavior among culinary entrepreneurs.

Table 1. Results of Goodness of Fit Model Testing

Criteria	Cut-of value	Criteria for Initial Model Results	Description	Description of Modified Model Results	Description
CMIN/DF	≤ 2	1,593	Model Fit	0,987	Model Fit
Nilai p	> 0.05	0,000	Model	0,756	Model Fit
GFI	≥ 0.90	0,872	Marginal Fit Model	0,843	Model
AGFI	≥ 0.90	0,754	Marginal Fit Model	0,825	Marginal Fit Model
CFI	≥ 0.90	0,945	Marginal Fit Model Fit	1	Marginal Fit Model Fit
RMSEA	≤ 0.08	0,063	Model Fit	0,000	Model Fit
TLI	≥ 0.90	0,940	Model Fit	1,006	Model Fit
NFI	≥ 0.90	0,847	Model	0,889	Model
RFI	≥ 0.90	0,834	Marginal Fit Model	0,899	Marginal Fit Model
IFI	≥ 0.90	0,955	Marginal Fit Model Fit	1,005	Marginal Fit Model Fit
PNFI	≥ 0.90	0,869	Model	0,796	Model
RMR	<0.05	0,242	Marginal Fit Model	0,028	Marginal Fit Model Fit

Marginal Fit

Source: Processed Data 2025

The results presented in Table 1 demonstrate that the modified Structural Equation Model (SEM) achieves a satisfactory overall model fit according to commonly accepted statistical criteria. Specifically, the CMIN/DF value of 0.987 is below the cut-off of ≤ 2, indicating that the model adequately fits the data. The p-value (0.756) exceeds 0.05, further confirming that there is no significant discrepancy between the observed and estimated covariance matrices, signifying a good model fit.

Among the absolute fit indices, CFI (1.000), TLI (1.006), IFI (1.005), and RMSEA (0.000) all fall within the acceptable or ideal ranges, showing that the model explains the observed data well. The GFI (0.843) and AGFI (0.825) values are slightly below the ideal threshold of ≥ 0.90 but remain within marginally acceptable limits, suggesting that while the model could be improved, it still retains an adequate level of goodness-of-fit.

Similarly, the incremental fit indices (NFI = 0.889, RFI = 0.899, PNFI = 0.796) show marginal fit, which means that the model explains a substantial but not complete proportion of the variance compared to a null model. The RMR value (0.028) is below the 0.05 cut-off, further indicating a good fit with minimal residuals.

In summary, the combination of strong indices (CFI, TLI, IFI, RMSEA, RMR) and marginally acceptable ones (GFI, AGFI, NFI, RFI, PNFI) suggests that the modified SEM model is statistically valid and reliable for explaining the relationships among entrepreneurship learning, entrepreneurial attitude, subjective norms, intention, and ecopreneurial behavior.

Table 2 Standardized Regression Weight Confirmatory Variable Results Entrepreneurial Learning

Dimension	Item	Loading Factor	CR	Prob	Description
MTR	X1.1	0,788	Fix	Fix	Significant
	X1.2	0,787	11.887	0,000	Significant
	X1.3	0,847	13.129	0,000	Significant
	X2.1	0,805	Fix	Fix	Significant
PDP	X2.2	0,817	12.845	0,000	Significant
	X2.3	0,799	12.424	0,000	Significant
VCL	X3.1	0,859	Fix	Fix	Significant
	X3.2	0,820	13.830	0,000	Significant
	X3.3	0,811	13.543	0,000	Significant
EXL	X4.1	0,810	Fix	Fix	Significant
	X4.2	0,766	11.705	0,000	Significant
	X4.3	0,831	13.153	0,000	Significant

Source: Processed Data 2025

The results presented in the table show the validity testing of indicators that measure four dimensions of entrepreneurship learning: Mentoring (MTR), Pedagogy (PDP), Vicarious Learning (VCL), and Experiential Learning (EXL) using *Confirmatory Factor Analysis* (CFA). All indicators demonstrate strong construct validity, as evidenced by their standardized loading factors exceeding 0.70, critical ratio (CR) values above 1.96, and probability (p-values) of 0.000, which are well below the 0.05 significance threshold.

For the Mentoring (MTR) dimension, the loading factors range from 0.787 to 0.847, indicating that all three items (X1.1–X1.3) are reliable measures of mentoring-related learning activities. Similarly, the Pedagogy (PDP) dimension exhibits loading factors between 0.799 and 0.817, signifying a consistently strong relationship between pedagogical elements and entrepreneurship learning effectiveness.

The Vicarious Learning (VCL) dimension demonstrates the highest loading factors, ranging from 0.811 to 0.859, suggesting that observational and imitative learning experiences play a highly influential role in shaping entrepreneurial competencies. Meanwhile, the Experiential Learning (EXL) dimension shows factor loadings between 0.766 and 0.831, confirming that hands-on, real-world learning experiences significantly contribute to entrepreneurial understanding and behavioral development.

Overall, all dimensions meet the statistical requirements for convergent validity, indicating that the measurement model accurately represents the theoretical construct of entrepreneurship learning. These results confirm that the four dimensions of mentoring, pedagogy, vicarious learning, and experiential learning are valid and significant indicators that collectively strengthen

the conceptual framework of entrepreneurial learning, influencing ecopreneurial behavior.

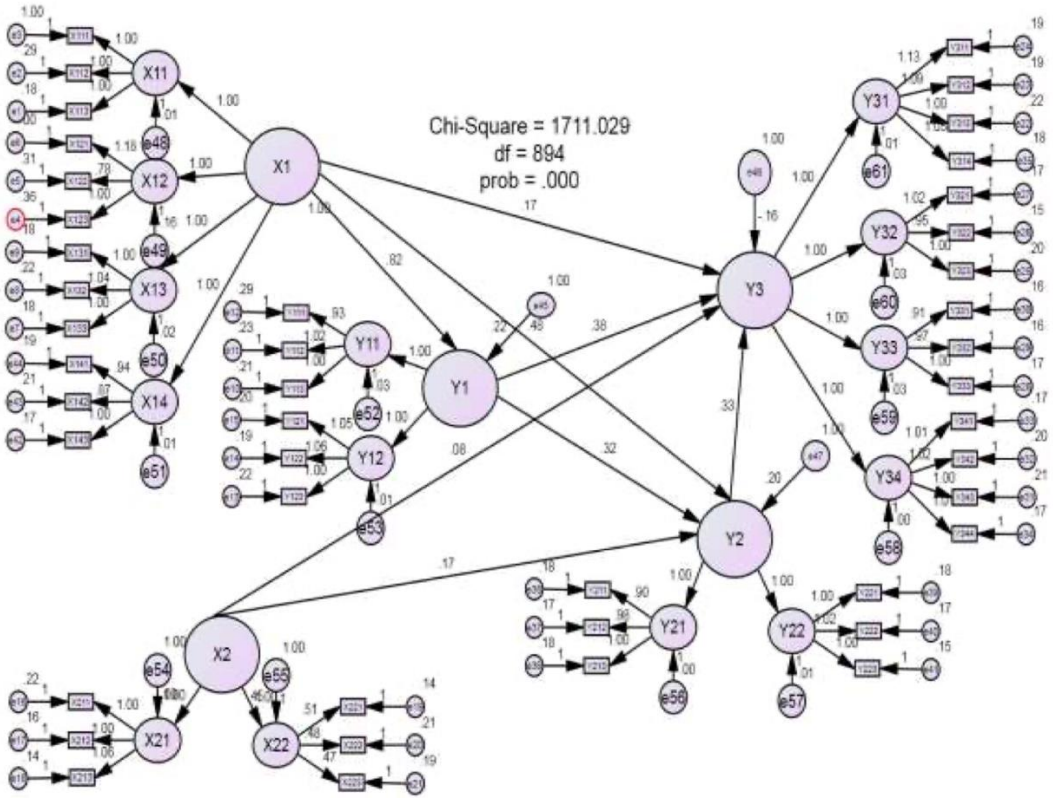

Figure 1. Structural Equation Model

Discussion

The results of this study confirm that entrepreneurship learning has a significant and positive influence on entrepreneurial attitude and intention, which subsequently drives ecopreneurial behavior among culinary entrepreneurs in Yogyakarta. These findings are consistent with the objectives outlined in the introduction, which sought to examine how learning experiences, attitudes, subjective norms, and intentions interact to shape sustainable entrepreneurial behavior. The results validate the assumptions of the Theory of Planned Behavior (Ajzen, 1991), which posits that behavior is a function of intention, itself shaped by attitude and perceived social norms.

Scientifically, the finding that entrepreneurship learning significantly affects both attitude and intention ($p < 0.05$) demonstrates that knowledge transfer through structured educational programs, mentoring, and experiential learning strengthens entrepreneurs' confidence and motivation to engage in environmentally responsible business practices. The high loading factors of vicarious and experiential learning indicate that observation and real-world practice are powerful tools in building entrepreneurial competence. This aligns with the view of Bandura (1997), who

emphasized that learning through modeling and direct experience increases self-efficacy, an essential predictor of entrepreneurial success.

In contrast, the non-significant direct effect of subjective norms on ecopreneurial behavior suggests that external social pressures alone do not directly determine sustainable business action. Instead, such norms operate indirectly through the internalization of positive attitudes and intentions. This finding provides an important implication for policymakers and educators: fostering ecopreneurial behavior requires more than promoting normative expectations; it demands a learning ecosystem that cultivates intrinsic motivation, value-based orientation, and experiential reinforcement.

From a broader perspective, this study contributes to the growing literature on sustainable entrepreneurship and green economy development by empirically showing that structured entrepreneurship learning can serve as a catalyst for sustainable business transformation. It emphasizes that education and training institutions play a pivotal role in embedding sustainability values into entrepreneurial mindsets, particularly in the creative and culinary sectors that dominate local economies in Indonesia.

Future research should extend this framework by incorporating longitudinal designs to explore how entrepreneurial learning outcomes evolve over time and to assess whether the behavioral changes observed remain stable in the long term. Moreover, cross-sectoral comparisons and qualitative insights could deepen the understanding of contextual and cultural factors influencing ecopreneurial development. Integrating environmental policy awareness, digital transformation, and gender perspectives may also offer richer implications for sustainable entrepreneurship education in the future.

The findings of this research reinforce and extend the results of several prior studies examining the relationship between entrepreneurship learning, entrepreneurial attitude, and behavioral intention. Consistent with the results of (Abbasianchavari & Moritz, 2021a; Bishnoi & Ubba, 2025; Cepeda-Carrión et al., 2022; Duong, 2022; Kusumojanto et al., 2021b; Saoula et al., 2025), this study confirms that entrepreneurship education plays a critical role in shaping positive entrepreneurial attitudes and enhancing individuals' intentions to engage in business ventures. Similarly, (Ardichvili, 2003; Darwish, 2024; Davila et al., 2024; Ioannou & Retalis, 2025; Pocek et al., 2022; Vijayan et al., 2025; Voldsund & Bragelien, 2022) found that structured learning experiences,

particularly those involving mentoring and hands-on practice, significantly increase entrepreneurial motivation, findings that are echoed in the current research.

In agreement with Ajzen's (Ajzen, 2011) *Theory of Planned Behavior*, the present study demonstrates that attitude and intention serve as key mediators between learning and entrepreneurial behavior. This result is also aligned with studies by (Acs et al., 2018; Adekiya & Ibrahim, 2016; Ahmed et al., 2020; Ioannou & Retalis, 2025; Kaur & Chawla, 2023; Otache et al., 2021, and Pocek et al. 2022), who reported that entrepreneurial intention bridges the influence of education and attitudes toward actual entrepreneurial practices. The confirmation of vicarious and experiential learning as the strongest predictors of entrepreneurial behavior supports Bandura's (1997) (MacBlain, 2021) social learning theory, emphasizing that modeling and experience-based learning substantially enhance self-efficacy and behavioral enactment.

However, unlike some prior studies e,g (Abbasianchavari & Moritz, 2021b; AI Abdullahi, 2017; Azim & Islam, 2022; Chin et al., 2024; Commer et al., 2021; Lu et al., 2020; "Subjective Norms and Entrepreneurial Intention: A Moderated-Serial Mediation Model," 2023), which identified subjective norms as a strong predictor of entrepreneurial behavior, this study found that subjective norms have only an indirect influence. This divergence may reflect contextual differences, particularly cultural values and environmental awareness levels among local culinary entrepreneurs in Yogyakarta, indicating that social influence is less dominant than personal belief and competence in driving sustainable entrepreneurial action.

Overall, this study advances the understanding of entrepreneurship learning in the context of sustainable and ecopreneurial behavior. While earlier works primarily emphasized profit-oriented entrepreneurship education, the current findings contribute to a more holistic framework that integrates environmental responsibility, experiential learning, and long-term sustainability values. This integration distinguishes the study from previous literature and highlights the evolving paradigm of entrepreneurship education toward green and responsible business development.

CONCLUSION

This study investigated the influence of entrepreneurship learning, entrepreneurial attitude, subjective norms, and entrepreneurial intention on ecopreneurial behavior among culinary entrepreneurs in Yogyakarta and aimed to explain how learning experiences and psychological factors interact to shape sustainable entrepreneurial practices. The findings demonstrated that

entrepreneurship learning significantly affects entrepreneurial attitude and intention, which in turn positively influence ecopreneurial behavior, highlighting the pivotal role of experiential and vicarious learning in developing environmentally responsible entrepreneurship. Notably, subjective norms were found to have an indirect rather than direct impact on ecopreneurial behavior, revealing a context-specific insight that internal motivation and personal belief outweigh social pressure in driving sustainable actions. These results underscore the theoretical relevance of the *Theory of Planned Behavior* offering practical implications for entrepreneurship education.

The findings suggest that integrating mentoring, hands-on experience, and sustainability-oriented curricula into entrepreneurship programs can strengthen the entrepreneurial mindset and foster long-term ecological responsibility. While this study provides valuable insights into sustainable entrepreneurship behavior in the Indonesian context, certain limitations should be noted, such as the cross-sectional research design, reliance on self-reported data, and focus on a single regional industry. Future research should focus on longitudinal studies, cross-sectoral comparisons, and the integration of qualitative approaches to explore deeper behavioral motivations. Such efforts will enhance our understanding of how entrepreneurial learning influences sustainable business transformation and inform the development of more effective educational and policy interventions to support the growth of ecopreneurs in emerging economies.

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