“How self-development drives sustainable micro-enterprise performance: The mediating roles of entrepreneurial motivation and innovative work behavior”

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ARTICLE INFO	Mafizatun Nurhayati, Endri Endri, Budi Santosa and Unang Toto Handiman (2026). How self-development drives sustainable micro-enterprise performance: The mediating roles of entrepreneurial motivation and innovative work behavior. *Problems and Perspectives in Management*, *24*(2), 74-88. doi:10.21511/ppm.24(2).2026.06
DOI	http://dx.doi.org/10.21511/ppm.24(2).2026.06
RELEASED ON	Wednesday, 22 April 2026
RECEIVED ON	Wednesday, 26 November 2025
ACCEPTED ON	Tuesday, 17 March 2026

JOURNAL	"Problems and Perspectives in Management"
ISSN PRINT	1727-7051
ISSN ONLINE	1810-5467
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
44	2	5

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

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HOW SELF-DEVELOPMENT DRIVES SUSTAINABLE MICRO-ENTERPRISE PERFORMANCE: THE MEDIATING ROLES OF ENTREPRENEURIAL MOTIVATION AND INNOVATIVE WORK BEHAVIOR

Type of the article: Research Article

Received on: 26th of November, 2025
Accepted on: 17th of March, 2026
Published on: 22nd of April, 2026

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Abstract

Microenterprises are crucial for economic development, but face resource shortages and market pressures that make sustainable business performance difficult. The present study seeks to investigate the effect of self-development on micro-enterprise performance in a sustainable manner mediated by necessity-driven entrepreneurship, opportunity-driven entrepreneurship, and innovative work behavior. Data were collected via a quantitative cross-sectional survey among 365 food and beverage micro-entrepreneurs in Greater Jakarta, Indonesia, followed by data analysis through partial least squares structural equation modeling (PLS-SEM). SEmpirical findings show that self-development results in a high positive effect on opportunity-driven entrepreneurship ($\beta = 0.675$, $p < 0.001$), whereas the effect on necessity-driven enterprise has been lower than others ($\beta = 0.269$, $p < 0.001$) as well as on innovative work behavior ($\beta = 0.379$, $p < 0.001$). Results show that opportunity-driven entrepreneurship is an important positive predictor of both innovative work behavior ($\beta = 0.394$, $p < 0.001$) and sustainable business performance ($\beta = 0.317$, $p < 0.001$), respectively. Innovative work behavior proved to be the most significant predictor of sustainable business performance ($\beta = 0.518$, $p < 0.001$). However, necessity-driven entrepreneurship does not show a significant influence on innovative work behavior and contributes significantly less to sustainable performance ($\beta = 0.067$, $p = 0.032$). Mediation analysis indicates that opportunity-driven entrepreneurship and innovative work behavior mediate the impact of self-development on sustainable business performance together. Our findings validated the idea that self-development improves sustainable microenterprise performance primarily through being oriented toward motivating opportunities and innovative work behavior.

Keywords self-development, innovation, necessity-driven, sustainability, Indonesia

JEL Classification O15, O31, L26, M20

INTRODUCTION

Microenterprises are viewed as indispensable engines of economic development in developing countries, being major contributors to employment generation, innovation diffusion and community welfare (Pedraza, 2021; Yose, 2023). They have become the backbone of Indonesia's economy and a foundation for improving people's livelihoods. Yet, even though they play a vital role in the economy, microenterprises (especially those operating within food and beverage sectors) are still facing persistent supply challenges stemming from lack of resources, high competition for market share at the local level and wider value chain conditions that undermine sustainability.

Conflict of interest statement:
Author(s) reported no conflict of interest

http://dx.doi.org/10.21511/ppm.24(2).2026.06

And in this regard, innovation is regarded as an essential condition for maintaining a sustainability performance of micro-enterprise. Research on innovative work behavior such as idea initiation, idea generation and implementation (Khan et al., 2020) is believed to be an important mechanism enabling firms to adapt to environmental change and competitive pressures. However, there is a large variation in the innovative behavior of microenterprises observed in reality. Although there are micro-entrepreneurs who adapt and show resilience, many are locked-in short-term survival modes, which poses fundamental questions about the underlying drivers for innovation and sustainability at the microenterprise level.

This paper is one of the first to use existing research on entrepreneurship and innovation to explain differences between countries largely as external or structural, for example, regulatory frameworks (Feng & Ren, 2023), access to finance (Huang et al., 2023) and market conditions (Harini et al., 2023). While these views are illustrative, they have a tendency to minimize the internal psychological and behavioral drivers informing the action of entrepreneurs. While the critical role of individual-level processes (such as self-development) on creativity, adaptability, and resilience has been emphasized in numerous studies (Demir & Kilic, 2024; Thani et al., 2021; Yang et al., 2025), this perspective is still under-theorized when it comes to explain sustainable performance outcomes in microenterprises.

In addition, entrepreneurial motivation has often been explored through the lens of necessity-driven entrepreneurship againts opportunity-driven entrepreneurship (Grimaldi et al., 2025; Huang et al., 2023). Nevertheless, these motivational orientations are generally researched in a vacuum and do not necessarily take into account their relations with individual development or innovative behavior clearly. The fragmented approach results in theoretical frameworks that are unable to explain why similar microenterprises under similar structural conditions pursue highly diverse sustainability trajectories. The issue is exacerbated by the propensity towards assimilating microenterprises within higher level small and medium-sized enterprise categories, despite their different constraints and decision-making logics (Medne & Lapina, 2019; Porfírio et al., 2024).

1. LITERATURE REVIEW AND HYPOTHESES

Sustainable business performance denotes the degree to which an organization is able to maintain economically, socially and environmentally sound operations especially in the very long term (Medne & Lapina, 2019; Alshehhi et al., 2018). Sustainable Business Performance differs from traditional performance measures focused merely on financial metrics, by adopting triple-bottom-line approach to integrate profitability, environmental care and social value creation. This perspective is especially relevant in the case of microenterprises, which rely on limited local resources and are usually well-integrated within their local community (Pedraza, 2021; Yose, 2023). Other empirical research results demonstrated that microenterprises increased sustainable performance through socially responsible practices, including resource utilization and efficiency, stakeholder engagement, and incremental innovation (Endri et al., 2025; Bongomin et al., 2025). The linkage with sustainable business performance can also be made from the strategic management perspective, where valuable and inimitable resources are available to utilize towards responding to environmental and social issues (Barney, 1991; Porfírio et al., 2024). Despite their economic relevance, microenterprises are still underrepresented in sustainability research that has largely addressed SMEs or larger organizations (Medne & Lapina, 2019; Setiawati et al., 2022). Such an imbalance reinforces the need to create research frameworks that convey the mechanisms behind sustainability tied to behavioral and contextual traits of microenterprises.

Innovation is widely acknowledged as the primary mechanism through which organizations manage uncertainty and remain competitive. Innovative work behavior (IWB) at the level of individuals refers to intentional creation, introduction, and application of new ideas that would enhance an organization (Khan et al., 2020). Innovative work behavior is particularly important for microenterprises because these companies usually have

no formal research and development structures in place and depend primarily on the person who initiates action (Thani et al., 2021; Nguyen et al., 2025). Although research has so far focused on benefits of innovative work behavior for businesses, in reality it serves directly sustainability of business performance through efficiency, product quality, customer value at firm and strategy flexibility (Rathee et al., 2025; Edgar et al., 2025; Srivastava & Singh, 2025). Rooted in the resource-based view, innovation is an intangible strategic asset that allows firms to convert scarce resources into sustainable competitive advantages (Barney, 1991; Lv et al., 2018). Learning processes and self-development (S-D) influence how knowledge linked to innovation is processed by individuals, strengthening the role of psychological mechanisms between sustainability and innovative activities (Bandura, 1997; Alzadjali et al., 2026). Together, these findings indicate that innovative work behavior may not only be considered an organizational performance variable but should also be viewed as a behavioral indication of individual developmental capacity.

A well-known split of that aspect from entrepreneurial motivation is necessity-driven entrepreneurship against opportunity-driven entrepreneurship, a twofold, erstwhile expressed in the Global Entrepreneurship Monitor framework (Batz Liñeiro et al., 2024). While opportunity-driven entrepreneurs choose to become an entrepreneur because they want to grow, innovate and generate value, necessity-driven entrepreneurs become self-employed because there are no better employment opportunities for them (Huang et al., 2023; Grimaldi et al., 2025). Previous studies consistently report a stronger linkage between human capital, innovation orientation and superior performance effects on opportunity-driven entrepreneurship (Estrin et al., 2024; Gaies et al., 2025; Lopez et al. 2025). While necessity-driven entrepreneurship has been associated with survival, efficiency and short-run stability (Feng & Ren, 2023; da Cunha et al., 2025), these processes may restrict experimentation and innovative behavior. The motivations, in turn, can also be contextualised with environmental shocks as well as contextual pressures that lead to opportunity recognition-driven or necessity-driven entrepreneurial activity (Dong et al., 2025). While the two motivational orientations reflect different aspects of sustainability, studies treat them separately and this provides only a partial understanding of their relative and joint effects on innovation and performance, especially in EI (Sui et al., 2025). Therefore, how these motivational orientations interact with internal capability development continues to be a relevant but under-researched issue.

Construction of self-development is a purposeful continuing process whereby people improve the skills, competencies, and self-regulatory structures that allow them to adapt effectively to changing environments (Bandura, 1997; Yang et al. 2025). According to human capital theory, investments in self-improvement will make behavioral and performance-related returns as the associative potential of individuals is expanded (Becker, 1964). Self-development allows developing and enhancing entrepreneurial characteristics including creativity, agility, and self-efficacy needed for opportunity recognition and innovation is reflected in recent studies (Demir & Kilic, 2024; Fauziyah & Pangaribuan, 2023; Thani et al., 2021). Aside from human capital, psychological capital (hope, optimism, resilience, and efficacy in one´s abilities) has been seen as an internal contingent resource that bolsters the transfer of self-development towards proactive and innovative behavior (Loi et al., 2025; Zhai & Wang, 2025; Margaça, 2026). Self-improvement in micro-enterprise settings increases risk-taking and learning orientation, which allows entrepreneurs to activate their motivational drivers into creative behaviors and maintain outcomes (Sui et al., 2025). These finding confirm the perspective of self-development as a micro-foundational mechanism connecting internal capability development with entrepreneurial behavior and sustained business viability.

In general, cross-sectional analysis literature argues that individual development process and interaction with entrepreneurs may predict effective entrepreneurial motivation and innovative work behavior, which ultimately expects sustainable business performance of the microenterprises (Bandura, 1997; Becker, 1964; Barney, 1991; Rathee et al., 2018). Still, these constructs have mostly been analysed in isolation which restricts our theoretical knowledge of the pathways through which human capital investment result in sustainability effects and vice versa in low-resource environments

http://dx.doi.org/10.21511/ppm.24(2).2026.06

microenterprises (Estrin et al., 2024; Lopez et al., 2025; Medne & Lapina, 2019). Despite the conventional wisdom that self-development leads to performance improvement (Becker, 1964; Demir & Kilic, 2024), extant evidence suggests that motivation orientation instead determines innovation behavior and its performance trajectories (Huang et al., 2023; Gaies et al., 2025). Hence, the effects of self-development on entrepreneurial outcomes in survival-driven microenterprise contexts (Feng & Ren, 2023; da Cunha et al., 2025) might be contingent on whether it is activated through opportunity rather than necessity-oriented pathways of entrepreneurship (Sui et al., 2025).

This study reconceptualized self-development not just as a capability, but as something whose impact on sustainability is materially dependent on motivational orientation and the expression into innovative work behavior which can help to develop a more holistic understanding of behavioral aspects of sustainable performance by micro-enterprises.

Thus, this study attempts to investigate the impact of self-development on sustainable micro-enterprise performance through necessity-driven and opportunity driven entrepreneurship along with innovative work behavior as mediating variables (Figure 1). In light of these theoretical arguments and empirical findings, we make the following hypotheses.

H1: Self-development positively affects innovative work behavior.

H2: Innovative work behavior positively affects sustainable business performance.

H3: Self-development positively affects necessity-driven entrepreneurship.

H4: Self-development positively affects opportunity-driven entrepreneurship.

H5: Necessity-driven entrepreneurship positively affects innovative work behavior.

H6: Opportunity-driven entrepreneurship positively affects innovative work behavior.

H7: Necessity-driven entrepreneurship mediates the relationship between self-development and innovative work behavior.

H8: Opportunity-driven entrepreneurship mediates the relationship between self-development and innovative work behavior.

H9: Necessity-driven entrepreneurship positively affects sustainable business performance.

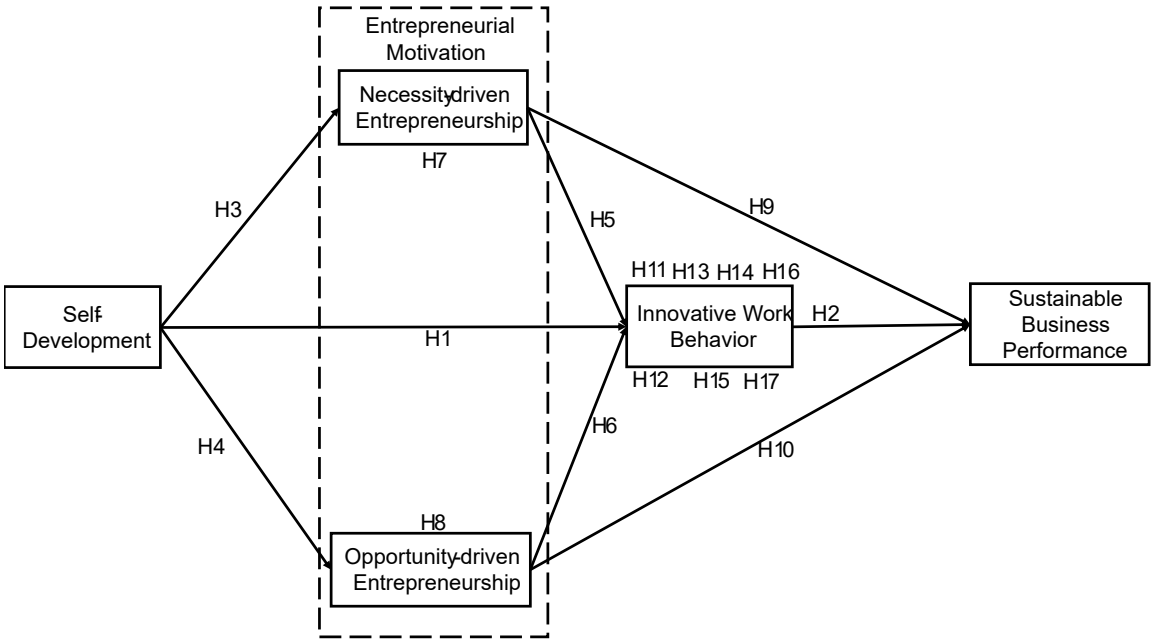

Figure 1. Conceptual framework

H10: Opportunity-driven entrepreneurship positively affects sustainable business performance.

H11: Innovative work behavior mediates the relationship between necessity-driven entrepreneurship and sustainable business performance.

H12: Innovative work behavior mediates the relationship between opportunity-driven entrepreneurship and sustainable business performance.

H13: Innovative work behavior mediates the relation between self-development and sustainable business performance.

H14: Necessity-driven entrepreneurship mediates the relation between self-development and sustainable business performance.

H15: Opportunity-driven entrepreneurship mediates the relation between self-development and sustainable business performance.

H16: Innovative work behavior serially mediates the relationship between self-development and sustainable business performance through necessity-driven entrepreneurship.

H17: Innovative work behavior serially mediates the relationship between self-development and sustainable business performance through opportunity-driven entrepreneurship.

2. METHODS

The aim of this study was to explore the correlation between self-development, entrepreneurial motivation, innovative work behavior and sustainable business performance in a quantitative, cross-sectional survey designs. Micro-entrepreneurs from the food and beverage sector were surveyed using a structured questionnaire to collect primary data. The research was performed through six stages: (1) adaption of measurements from pre-validated scales; (2) confidence testing and refinement of questionnaires; (3) data collection via field surveys; (4) data screening and cleaning; and 5) using PLS-SEM to evaluate measurement models as well as structural model testing. Such a systematic process provides methodological rigor and transparency.

Population of this study are microentrepreneurs that engaged in food and beverage business in Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi). Microenterprises are an important unit of analysis because (1) they face a specific vulnerability regarding sustainability challenges and (2) they represent a special share of microeconomic vitality. Snowball sampling was applied, which considered to be adequate due to a lack of a general, callable database regarding microenterprises in the area, making probability-based sampling impossible. The sample size must have at least five hundred responses. According to the guidelines given by Tabachnick and Fidell (2012), two to ten respondents per model parameter makes a real minimum of 5:1 therefore, an acceptable range of respondents for this study ranged from 150 to 450. The final data analysis consisted of 365 responses which were valid. From June to July 2025, data were gathered through self-administered questionnaires that trained enumerators passed out online and in person.

The Greater Jakarta region was selected due to its high concentration of food and beverage microenterprises and its dynamic competitive environment. The June–July 2025 survey period was chosen to capture post-pandemic conditions of entrepreneurial stabilization, ensuring responses reflected relatively stable market dynamics rather than temporary recovery fluctuations. The dataset has not been reused for any other publications. Respondent characteristics, including gender, age, business tenure, and firm size, are summarized in Table 1.

Participation in this study was not mandatory. Prior to taking the questionnaire, all participants were made aware of the academic nature of study, their responses would be kept 100% confidential and they had the right to withdraw from studying at any given time without consequence. All participants provided informed consent. No personally identifiable information was collected, and all data were analyzed on the aggregate level to

http://dx.doi.org/10.21511/ppm.24(2).2026.06

Table 1. Respondent profile

Respondent Profile		Frequency	Percentage
Gender	Female	299	81.9
	Male	66	18.1
Age Group	Generation Z (1997–2012)	52	14.2
	Generation Y (1981–1996)	132	36.2
	Generation X (1965–1980)	181	49.6
Education Level	Primary School	9	2.5
	Junior High School	73	20.0
	Senior High School/Vocational	169	46.3
	Diploma/Bachelor's Degree	105	28.8
	Postgraduate	9	2.5
Marital Status	Single	59	16.2
	Divorced/Widowed	44	12.1
	Married	262	71.8
Business Experience	Less than 1 year	40	11.0
	1–3 years	114	31.2
	4–6 years	111	30.4
	More than 6 years	100	27.4
Total		365	100.0

maintain both anonymity and objectivity. All responses were collected and stored in a secure manner and only used for research. The study could be defined as a noninvasive survey with no physical, psychological or social risks, and thus it did not require formal ethics committee approval.

All constructs were measured with well-validated scales. Self-development was measured by a scale developed by Koh and Wang (2012), which includes self-regulation, self-management and leadership. Innovative work behavior was measured according to the scale of Messmann and Mulder (2012), which distinguishes ideation, championing, and implementation. Lastly, sustainable business performance is measured based on the triple-bottom-line approach (Abid et al., 2019) and operationally defined with respect to three different dimensions: economic (that include sales growth, profitability, and operational efficiency), environmental (that encompass waste management, energy-efficient processes, and natural resource use), as well as social dimensions (that comprise customer satisfaction and community participation). (2024). Necessary vs. opportunity entrepreneurial was assessed with scales adapted from Huang et al. (2023). Necessity-based entrepreneurship is the term describing entrepreneurial activity arising from non-availability of jobs or work opportunities, economic hardship and an urgent need to meet day-today life and livelihood-related needs with emphasis on just survival. On the other hand, opportunity-driven entrepreneurship is characterized by a focus on identifying market opportunities, endeavoring for growth and development, and long-term goal-setting with the intrinsic motivation to innovate.

The choice of these instruments was based on their known reliability, theoretical relevance and previous empirical validation in entrepreneurship and sustainability research. The number of items was confined to theoretically relevant indicators only, so as to minimize respondent fatigue and improve the quality of responses within a heterogeneous set of micro-entrepreneurs. Items were measured on a five-point Likert scale from 1 ("I strongly disagree") to 5 ("I strongly agree").

Items in the questionnaire were chosen to encompass desired behavioral and motivational constructs that are theoretically relevant yet can be observed practically within microenterprise environments. To ease the burden on respondents and produce valid responses from micro-entrepreneurs with varying levels of education, The number was kept theoretically to least essential indicator of each construct (as validated in earlier work). Theses all items were crafted in simple, actionable language to improve understanding and mirror everyday decisions and behavior as an entrepreneur. Hypotheses were tested with partial least squares structural equation

modeling (PLS-SEM). PLS-SEM is considered suitable to tests more complex research models consisting of multiple mediating relationships (Hair et al., 2022) and more robust to the assumption of non-normality of data (Hair et al., 2022). Besides, PLS-SEM is suitable for prediction- and theory-driven complex models in the research field of novel microenterprise contexts.

3. RESULTS

The indicator reliability, internal consistency reliability, convergent validity and discriminant validity of the model were evaluated. Outer loadings were used to assess indicator reliability. All indicators had preferential loadings over cut-off point 0.70. Under sustainable business performance, two indicators (sales growth=0.624 and profitability=0.686) were retained based on both theoretical relevance as well as acceptable loading values above 0.60 which remain within acceptable limits in exploratory PLS-SEM research (Hair et al., 2022). We examined the convergent validity through ucking final items using an average variance extracted (AVE). All constructs achievable AVEs greater than 0.50 (Table 2). Reliability analysis for measuring internal consistency was computed using Cronbach's alpha and composite reliability (CR). Consistent with Table 2, all constructs showed reliable values of α and CR were above 0.70 respectively.

Discriminant validity was measured using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT). Table 3 presents the Fornell–Larcker results, and all diagonal elements (i.e., square root of each construct's AVE) exceeded their correlations with other constructs. Also, all HTMT values were below the 0.85 threshold as a sign of discriminant validity.

Table 4 reports the results of the structural model.None of the inner VIF values exceeded 3.3, suggesting an absence of multicollinearity problems. This model accounts for 62.5% of the variance in sustainable business performance, followed by innovative work behavior (51.8%), opportunity-driven entrepreneurship (45.6%) and necessity-driven entrepreneurship (7.2%).

Table 2. Mean, convergent validity, and reliability

Variables	Indicators	Mean	Factor Loading	AVE	CA	CR
Sustainable business performance (SBP)	Sales growth	3.58	0.624	0.595	0.902	0.921
	Profitability	3.57	0.686			
	Cost efficiency	3.78	0.747			
	Waste reduction	4.42	0.834			
	Use of eco-friendly materials	4.16	0.819			
	Energy efficiency	4.29	0.812			
	Customer satisfaction	4.29	0.794			
	Social contribution to society	4.22	0.827			
Innovative work behavior (IWB)	Generate new product ideas	4.18	0.863	0.748	0.932	0.947
	Generate new ideas related to the process	4.15	0.881			
	Promote new ideas	4.04	0.912			
	Invite others to support the idea	4.01	0.813			
	Implementing new ideas in business	4.15	0.879			
	Putting together concrete actions from the idea	4.09	0.839			
Necessity-driven entrepreneurship (N-DE)	No other work options	3.50	0.883	0.720	0.870	0.911
	Economic pressures	3.72	0.910			
	Fulfillment of daily needs	3.94	0.871			
	Focus on survival	3.39	0.717			
Opportunity-driven entrepreneurship (O-DE)	Seeing market opportunities	4.24	0.847	0.798	0.916	0.941
	Desire to grow and develop	4.52	0.903			
	Long-term targets	4.46	0.921			
	Motivation to create innovations	4.42	0.901			
Self-development (S-D)	Confident in facing business challenges	4.24	0.945	0.891	0.939	0.961
	Belief in personal abilities	4.30	0.961			
	Business problem-solving ability	4.21	0.926			

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Table 3. Discriminant validity

	Fornell-Larcker Criterion					Heterotrait-Monotrait Ratio (HTMT)				
	SBP	IWB	N-DE	O-DE	S-D	SBP	IWB	N-DE	O-DE	S-D
Sustainable business performance (SBP)	0.771									
Innovative work behavior (IWB)	0.746	0.865				0.810				
Necessity-driven entrepreneurship (N-DE)	0.327	0.279	0.848			0.354	0.295			
Opportunity-driven entrepreneurship (O-DE)	0.684	0.662	0.363	0.894		0.745	0.715	0.395		
Self-development (S-D)	0.620	0.654	0.269	0.675	0.944	0.674	0.699	0.289	0.726	

Table 4. Structural model results

	Inner VIF Values				R^2	Q^2
	SBP	IWB	N-DE	O-DE		
Sustainable business performance (SBP)					0.625	0.363
Innovative work behavior (IWB)	1.788				0.518	0.382
Necessity-driven entrepreneurship (N-DE)	1.155	1.153			0.072	0.046
Opportunity-driven entrepreneurship (O-DE)	1.898	1.965			0.456	0.358
Self-development (S-D)		1.840	1.000	1.000	–	–

The R2 values for sustainable business performance (0.625) and innovative work behavior (0.518) are substantial to moderate as per prevailing PLS-SEM, while those of opportunity drives entrepreneurship (0.456) and necessity driven entrepreneurship (0.072), moderate and weak, respectively. Positive Q^2 values indicate predictive relevance of the model. The statistical significance of the path coefficients and mediation effects was assessed through bootstrapping with 5,000 subsamples.

The outcomes of the hypothesis testing are summarized in Table 5 and Figure 2. With respect to innovative work behavior, results showed evidence for a significant positive effect of self-development ($\beta = 0.379$, $p < 0.001$), necessity-driven entrepreneurship ($\beta = 0.269$, $p < 0{,}001$), and opportunity-driven entrepreneurship ($\beta = 0.675$, $p < 0.001$). Innovative work behavior positively affected sustainable business performance ($\beta = 0.518$, $p < 0.001$). The opportunity-driven was the most predictor of innovative work behavior ($\beta = 0.394$, $p < 0.001$) and sustainable business performance ($\beta = 0.317$, $p < 0.001$). The effect of necessity-driven entrepreneurship on innovative work behaviour was not significant ($\beta = 0.034$, $p = 0.194$), and the effect on sustainable business performance was weaker but still significant ($\beta = 0.067$, $p = 0.032$).

Most notably, results suggest that opportunity-driven entrepreneurship is a main mediating element in the model but not for necessity-driven entrepreneurship when transmitting the effects of self-development on innovative work behavior or sustainable performance. Given that mediation analysis shows they both mediate the relationship between self-development and innovative work behavior (Opportunity-driven entrepreneurship: $\beta = 0.266$, $p < 0.001$; Necessity-driven entrepreneurship: $\beta = -0.183$, n.s.), we only confer upon opportunity-driven entrepreneurial activity the title of entrepreneurially supportive individual characteristics. Significant mediation effect of innovative work behavior on the relationship between opportunity-driven entrepreneurship and sustainable business performance ($\beta = 0.204$, $p < 0.001$), and self-development and sustainable business performance ($\beta = 0.196$, $p < 0.001$). Opportunity-driven entrepreneurship and innovative work behavior, the path of serial mediation are also verified ($\beta = 0.138$, $p < 0.001$). On the other hand, paths through necessity-driven entrepreneurship and innovative work behavior were not supported by mediation. Moreover, temporal serial mediation paths containing necessity-driven entrepreneurship are rejected, further supporting the conditional role of motivational orientation in influencing sustainability outcomes.

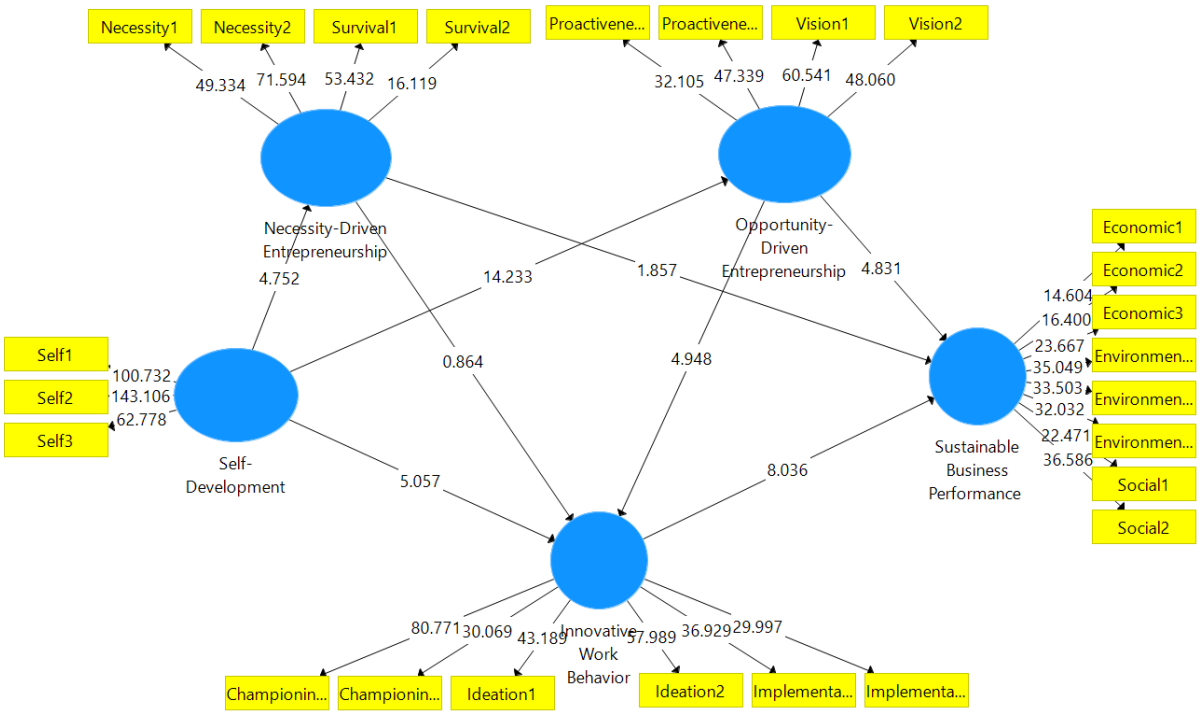

Figure 2. Bootstrapping

Table 5. Hypothesis testing results

	Original Sample	Standard Deviation	T Statistics	P Values	Outcome
H1: S-D → IWB	0.379	0.075	5.057	0.000	Accepted
H2: IWB → SBP	0.518	0.064	8.036	0.000	Accepted
H3: S-D → N-DE	0.269	0.057	4.752	0.000	Accepted
H4: S-D → O-DE	0.675	0.047	14.233	0.000	Accepted
H5: N-DE → IWB	0.034	0.039	0.864	0.194	Rejected
H6: O-DE → IWB	0.394	0.080	4.948	0.000	Accepted
H7: S-D → N-DE → IWB	0.009	0.011	0.810	0.209	Rejected
H8: S-D → O-DE → IWB	0.266	0.054	4.936	0.000	Accepted
H9: N-DE → SBP	0.067	0.036	1.857	0.032	Accepted
H10: O-DE → SBP	0.317	0.066	4.831	0.000	Accepted
H11: N-DE → IWB → SBP	0.018	0.020	0.864	0.194	Rejected
H12: O-DE → IWB → SBP	0.204	0.051	4.002	0.000	Accepted
H13: S-D → IWB → SBP	0.196	0.046	4.229	0.000	Accepted
H14: S-D → N-DE → SBP	0.018	0.011	1.650	0.049	Accepted
H15: S-D → O-DE → SBP	0.214	0.050	4.265	0.000	Accepted
H16: S-D → N-DE → IWB → SBP	0.005	0.006	0.810	0.209	Rejected
H17: S-D → O-DE → IWB → SBP	0.138	0.034	4.077	0.000	Accepted

Note: SBP is sustainable business performance; IWB is innovative work behavior; N-DE is necessity-driven entrepreneurship; O-DE is opportunity-driven entrepreneurship; S-D is self-development.

4. DISCUSSION

The contribution of self-development to sustainable business performance through necessity-driven and opportunity-driven entrepreneurship, as well as innovative work behavior, of food and beverage microenterprises. The findings confirm the theoretical model and explain how individual-level development fosters sustainability in a resource-poor entrepreneurial context. Second,

http://dx.doi.org/10.21511/ppm.24(2).2026.06

the results show that self-development does benefit sustainability conditional on activated types of entrepreneurial motivation rather than directly.

Even the outcomes are in accordance to H1 where creative work behaviorsis positively influenced due to self-development. The finding indicates that as micro-entrepreneurs continue to allocate resources for self-regulation, self-management and leadership development, they become more predisposed towards idea generation, idea championing and implementation activities. This finding is consistent with some of the previous evidences which studying the positive effects of personal development, learning mindset and self-esteem on innovative behavior (both entrepreneurial and organizational) (Bandura, 1997; Thani et al., 2021; Demir & Kilic, 2024; Yang et al., 2025). This research, however, expands a stream of literature that has demonstrated self-development to be conducive of innovation by sharing evidence in the context of microenterprises that expressed readiness to realize long-term pay-offs from an innovation is present even when resources are severely lacking. For microenterprises, where formal innovation systems break down, though, the bulk of innovations rely more on what skills an entrepreneur has. Thus, these results not only add weight to the idea that self-development is a relevant micro-foundation of innovative work behavior in informal and small business settings (Otache, 2025), but also serves as a posited micro–foundational mechanism of innovation among these contexts.

Sustainable business performance is significantly and positively influenced by innovative work behavior as predicted in H2. Microenterprises that create and implement new ideas are likely to outperform in improving both economic outcomes, as well as environmental practices and social value creation. Such relationships have previously been documented in studies linking behaviors associated with innovation to firm performance and sustainability outcomes (e.g., Khan et al., 2020; Medne & Lapina, 2019; Nguyen et al., 2025). Similar results are reported in emerging economies where innovative behavior has been shown to improve sustainability dimensions, namely adaptability, resource efficiency, and stakeholder trust (Srivastava & Singh, 2025; Gul et al., 2025). But how the current findings extend beyond this earlier validation is in showing that innovation driven sustainability works across even structurally constructed microenterprise systems. It suggests that behavioral factors rank higher than resource-based ones in the determinants of sustainability outcomes for microenterprises. The present study therefore contributes to a deeper understanding of this relationship in the context of microenterprises and extends existing research largely conducted with SMEs and larger organizations by confirming that innovative work behavior is considered as a primary transmission mechanism linking individual capability to multi-dimensional sustainability performance.

Also, the finding is in line with H3 and H4 as they suggest that self-development positively impacts both necessity-driven and opportunity-driven entrepreneurship, however the impact is larger for the latter. This pattern implies that self-development may be supportive for navigating micro-entrepreneurs through the day-to-day economic pressures, but more closely linked with opportunity recognition, growth aspirations and long-term orientation. The observed positive association between human capital investments and levels of engagement resonates with earlier studies indicating that opportunity-driven entrepreneurship is more closely associated with investment in human capital than necessity-driven engagement (Estrin et al., 2024; Gaies et al., 2025; Huang et al., 2023). Studies in emerging economies have shown the same thing that opportunity-motivated entrepreneurs are more highly skilled, aspirational and innovation-oriented compared to necessity-motivated entrepreneurs (Sui et al. 2015; Lopez et al., 2015). This study makes a further contribution as it goes beyond this conceptual dichotomy by empirically testing both motivational pathways within one composite model of entrepreneurship, demonstrating how compared to achievement motivation, self-development is consistently stronger. This asymmetry is theoretically significant as it implies that investments in individual capability do not equally translate into all kinds of endeavors but favor growth-oriented trajectories. Given these findings, the current investigation thus enhances entrepreneurship literature through specification of a motivational trait as a distinguishing mechanism underlying microenterprises' potentialities to translate human capital into entrepreneurial-related behavior.

Consistent with H6, opportunity-driven entrepreneurship is positively related to innovative work behavior (83% confidence interval), but necessity-driven entrepreneurship does not have a significant effect on it (H5 thereby is rejected). It indicates that motivations oriented towards growth and opportunity are more innovation-inducing than motivations aimed at survival. Similar results have been achieved in past research that have established Entrepreneur driven by opportunity are more likely to invest in experimentation, learning and developing their capabilities for the long-term (Estrin et al., 2024; Fernandez, 2025). The same does not apply for necessity-driven entrepreneurs, who are much more inclined to place importance on reducing risk and earning short-term income than drama in the course of engagement with innovation-highly related (Huang et al., 2023; Dong et al., 2025). Nevertheless, the results presented here provide more robust empirical distinction by allowing both motivational orientations to be modeled concurrently in a single structural framework. Directly comparing the two highlights that, while survival-driven engagement is economically rational, it does not spawn innovation-driven behavior when operating under microenterprise conditions. Thus, these findings identify motivational orientation as a behavioral boundary condition documenting whether entrepreneurial engagement can be transformed to innovation-driven action.

The support for H9 and H10 comes from direct impacts of entrepreneurial motivation on sustainable business performance. Both kinds of businesses, those driven by necessity and others dedicated to opportunities, positively influence sustainable business performance, but the effect of opportunity-driven entrepreneurship is more substantial. MSMEs that are engaged in survival-oriented entrepreneurship make a small but positive contribution to sustainability, whereas opportunity-driven entrepreneurial engagement is far more decisive in achieving sustainable, long-term economic, environmental and social outcomes. This concurred to earlier research showing that only opportunity-driven entrepreneurship correlates with innovativeness, value creation and sustainable growth (Sui et al., 2025; Gul et al., 2025), while necessity-based entrepreneurship has restricted transformative impact (Lopez et al., 2025). However, the current findings elaborate on this difference even further by empirically showing that sustainability impact magnitude differs significantly across motivational orientations in a single microenterprise context. This suggests that sustainability performance does not merely reflect the degree to which one is an entrepreneur in and of itself, but rather, it is fundamentally influenced by whatever motivational logic underpins such endeavor. In line with this, the results conceptualise entrepreneurial motivation as a qualitative driver of sustainability trajectories, instead of being perceived as a generic or homogenous enabler of business performance.

Mediation analysis also confirms H8, H12, H13, H15 and consistent with H17 by reaffirming that opportunity driven entrepreneurship as well innovative work behavior are jointly mediating the effect of self-development on sustainable business performance. These takeaways indicate that self-development acts on sustainability mainly by enabling opportunity-driven motivation which then carries over to innovative behavior. Previous research connecting human capital development to performance outcomes through innovation-related processes has also pointed to similar mediating mechanisms (Rathee et al., 2025; Zhai & Wang, 2025). Nonetheless, this present study contributes to this research stream by empirically modeling a sequential transmission mechanism in the form of an integrated framework that explicitly shows how motivational orientation and innovative behavior act as successive stages along the sustainability pathway. In contrast, however, H7, H11 and H16 (mediation paths with necessity-driven entrepreneurship) are not supported meaning that self-development does not translate to innovation and sustainability outcomes without survival-driven entrepreneurial engagement. This finding corroborates previous studies which find that necessity entrepreneurship has little impact on long-term performance improvements (Sui et al., 2025; Lopez et al., 2025). Crucially, significant mediation through necessity-driven pathways is absent which supports the argument that sustainability trajectories are dependent on opportunity-oriented activation not just entrepreneurial engagement. Thus, the findings elucidate that human capital investments result in sustainability outcomes contingent to the motivational channel through which they are activated.

http://dx.doi.org/10.21511/ppm.24(2).2026.06

CONCLUSION

Using the lens of food and beverage enterprises, this study aimed to explore the effects of self-development on sustainable business performance among microenterprises with a mediating effect from necessity-driven entrepreneurship, opportunity-driven entrepreneurship, and innovative work behavior. Results show that self-development is particularly important for improving sustainable business performance through opportunity-driven entrepreneurship and innovative work behavior. On the other hand, mere survival-oriented motivation does not have a translating feedback effect on individual development into innovation-based sustainability outcomes. Thus, innovative work behavior emerges as a critical mechanism between individual development and entrepreneurial motivation on one hand, and economic, environmental and social performance outcomes on the other.

This finding provides broader theoretical and managerial implications. At a theoretical level, the study advances human capital and entrepreneurship theory by establishing that self-development's sustainability impact is conditional rather than universal, depending on the activated motivational pathway. The results clarify that by making a distinction between necessity-driven and opportunity-driven entrepreneurship, the latter types of motivation are key in transforming individual development into innovative behavior and, consequently, sustainable performance while survival-based engagement cannot on its own. Practically, the results imply that policies and capacity-building programs for microenterprises can no longer be narrowly focused on short-term survival support but should rather highlight self-development initiatives that encourage opportunity recognition, long-term strategic orientation, and innovative behavior. This strategic focus may make entrepreneurship support programs more effective in the long term to achieve multi-dimensional sustainability outcomes.

Third, since necessity-driven entrepreneurship has a non-significant effect on innovative work behavior, this lends evidence to the idea that motivational pathways may differ across contexts. Future studies should adopt longitudinal designs, comparative sectoral analysis and cross-regional or even cross-country perspectives to explore how different contextual and institutional factors shape the realizing of this relationship between entrepreneurial motivation and innovation/sustainability outcomes. In summary, the results highlight that performance of sustainable microenterprises is not only a matter of entrepreneurial involvement per se, rather, it is about innovation that fosters these (individually activated) capabilities in an opportunity-oriented manner.

AUTHOR CONTRIBUTIONS

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ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to the Research and Community Service Institute of Universitas Mercu Buana for providing research funding support, which has contributed significantly to the successful completion of this study and the preparation of this article.

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