

CO-CREATION ACTIVITIES AND SUSTAINABILITY PERFORMANCE OF SMES: AN ESG PERSPECTIVE

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Abstract:

Global pressure on sustainability and ESG demands, as well as changing consumer preferences, are encouraging MSMEs to adopt more collaborative and sustainable business strategies. One of the increasingly relevant approaches is co-creation activities, where MSMEs involve customers and stakeholders in the process of creating value. However, empirical evidence on how co-creation activities increase the sustainability performance of MSMEs through a strategic mechanism remains limited, particularly in the food and beverage (FnB) sector. This study aims to analyze the influence of co-creation activities on the sustainability performance of MSMEs with the role of mediation of green innovation and stakeholder engagement from an ESG perspective. Research uses a quantitative approach with Structural Equation Modeling (SEM) analysis. The research sample consists of 120 FnB MSMEs in East Java (Surabaya, Malang, Mojokerto, Jember, and Banyuwangi) selected using purposive sampling based on criteria for implementation practice sustainability. Research results show that co-creation activities positively influence green innovation and stakeholder engagement, thereby increasing sustainability performance. Findings: This confirms that collaboration marks not only a marketing strategy but also a strategic mechanism for strengthening the performance of ESG-based MSME sustainability.

Keywords: co-creation activities, green innovation, stakeholder engagement, sustainability performance, ESG

INTRODUCTION

Sustainability has shifted from just an issue of normative concern to a strategic imperative for organizations, including micro, small, and medium enterprises (MSMEs). Pressure regulations in an increasingly complex environment are strong, increasing consumer to address social and environmental issues, as well as the integration principle of Environmental, Social, and Governance (ESG) encourage MSMEs to reorganize their business models so as not to be only performance-oriented in the short term, but also sustainable in the long term (Hart &

Dowell, 2024). In the FnB sector, sustainability challenges primarily stem from waste generation, resource use, and reliance on local supply chains. The urgency of sustainability among FnB MSMEs in Indonesia is substantial, given that MSMEs account for more than 64 million business units, contribute over 60% of national GDP, and absorb approximately 97% of the workforce. Among these, the food and beverage sector represents one of the largest contributors to the MSME economy with millions of business units providing absorbent foods and drinks, millions of

people working, and producing marked and significant sales. However, the scale of this activity also has implications for high environmental pressure. National data show that embossed Indonesian waste is dominated by waste food and plastic, two types of waste closely related to FnB MSME activities, starting from the production process until the consumption pattern.

Conditions become more relevant to the context of East Java Province, which is one of the largest MSME bases in Indonesia. Statistical data show that East Java has hundreds of thousands of industrial units at the micro and small scale, with the food and drink sector as one of the dominant subsectors. The number of FnB MSME actors makes East Java an important laboratory for empirical studies on the sustainability of MSMEs. Every small improvement in practice sustainability, such as reducing food waste, improving energy efficiency, or using local materials, can potentially produce a significant impact on the environmental, social, and economic performance.

The latest literature emphasizes that sustainability cannot be achieved unilaterally by the company but requires active collaboration with customers and stakeholders, guided by a mechanism of co-creation mechanism (Kraus et al., 2024). Co-creation activities enable MSMEs to gain relevant market insights, improve social legitimacy, and accelerate the adoption of green practices and innovation through collective learning. However, some large-scale empirical studies on co-creation and sustainability remain company-focused, especially in developed countries, and thus do not adequately represent the realities of MSMEs with limited power and high dependence on local social relationships (Li et al., 2024).

More research continues, although several studies have confirmed a positive connection between co-creation and sustainable performance. The strategic mechanism explaining how co-creation translates into sustainable performance remains relatively limited, especially in the MSME context. Existing literature tends to emphasize connection directly, while role green innovation and stakeholder engagement as a mechanism of mediation. Still, it is seldom reviewed in a simultaneous way in one conceptual model, especially again in the ESG framework. In fact, for FnB MSMEs, innovation and green engagement with stakeholders and local interests are the two most realistic and strategic paths to reach sustainability.

Based on the identified gaps, this study proposes a conceptual model that positions co-creation activities as a strategic capability, with green innovation and stakeholder engagement acting as dual mediating mechanisms linking co-creation activities to sustainability performance among MSMEs. Specifically, this study aims to examine the effects of co-creation activities on green innovation and stakeholder engagement, investigate the influence of these variables on sustainability performance, and assess their mediating roles in the relationship between co-creation activities and sustainability performance within the FnB MSME sector in East Java.

The novelty of this study lies in three main aspects. First, unlike previous studies that predominantly examine the direct relationship between co-creation and sustainability performance, this research develops a more comprehensive mediation framework by simultaneously incorporating green innovation and stakeholder engagement as complementary pathways through which co-creation creates sustainability value.

Second, this study extends the sustainability and co-creation literature by integrating the Natural Resource-Based View (NRBV) and Stakeholder Theory within an ESG-oriented framework, thereby providing a more holistic explanation of how internal capabilities and external stakeholder relationships jointly contribute to sustainability outcomes. Third, while most prior studies have focused on large firms and developed economies, this research specifically investigates FnB MSMEs in East Java, Indonesia, a context characterized by resource constraints, strong local stakeholder dependence, and significant environmental challenges. Consequently, this study contributes new empirical evidence from an emerging economy context and offers a more contextualized understanding of sustainability transformation among MSMEs.

LITERATURE REVIEW

Co-Creation Activities

Co-creation activities are collaborative processes in which companies and customers actively co-create the market through the exchange of knowledge, experience, and resources (Vargo & Lusch, 2023). In perspective service-dominant logic, value is not produced unilaterally by the company, but rather constructed together through interaction between various market actors.

For MSMEs, especially in the food and beverage sector, co-creation activities have greater strategic significance than for large companies. Limitations of the source Power financial and technology encourage MSMEs to utilize proximity relationships with customers and the local community as the main source, bait back, and social legitimacy. Kraus et al.'s (2024) study shows that co-creation increases flexibility in MSME innovation and

strengthens market sensing capability, so that MSMEs are more responsive to changing consumer preferences and demands for sustainability.

In addition, co-creation also plays a role as a mechanism for social learning (social learning mechanism), where interaction with customers enables MSMEs to understand market sustainability that the market expects, including practicing a friendly environment and responsible social responsibility. Thus, co-creation not only functions as a tool for marketing relationships, but also as a strategic capability that encourages the transformation of MSME business models towards sustainability.

Green Innovation

Green innovation is defined as the development and implementation of innovative products, processes, and practices to achieve managerial goals that reduce environmental impact while increasing efficiency and source power (Xie et al., 2023). In the context of MSMEs, green innovation is often incremental and contextual, such as using materials that are more environmentally friendly, reducing waste production, or adopting operational practices for economical energy use.

The latest literature confirms that green innovation is rarely found in an insulating form but is instead influenced by interactions with external actors. Co-creation activities provide room for MSMEs to access green knowledge (green knowledge) from customers and stakeholders' interests, so as to speed up the adoption process of green innovation through a mechanism of joint learning and collaborative experimentation (Li et al., 2024).

In the sector FnB, engaging customers in discussions about a packaging-friendly environment,

managing waste and resources, and material standards, and sustainable proven practices encourage MSMEs to develop more innovative, green, and market-value-appropriate solutions. With Thus , co-creation activities work as enabler for green innovation with lower uncertainty innovation and improvement market acceptance of practice friendly environment.

Based on theoretical argumentation and empirical findings, then formulated hypothesis following:

H1: Co-creation activities have an effect positive towards green innovation.

Stakeholder Engagement

Stakeholder engagement reflects a quality connection that is interactive and sustainable between the company and stakeholders' interests, including customers, suppliers, local communities, government, and other business partners. Involvement This not only covers communication in one direction, but also participation and active stakeholders' interest in the process of making decisions and creating a market organization (Singh et al., 2024).

In perspective stakeholder theory, involved stakeholders' interests are viewed as a prerequisite for achieving social and long-term business sustainability. For MSMEs, especially in the food and beverage sector, stakeholder engagement plays a strategic role because sustainable business relies heavily on trust in the local community, stable connections with suppliers, and institutional support. Empirical studies have shown that MSMEs with high involvement of stakeholders tend to have greater resilience to pressure from regulations and changes in market preferences (Singh et al., 2024).

Co-creation activities serve as a key mechanism for strengthening stakeholder engagement. Through collaborative processes and two-way dialogue , co-

creation creates room for participatory engagement that encourages stakeholders' interest in being more deeply involved in the MSME business activity. Involving customers in the development of products, discussing sustainability, and solving operational problems in a way that simultaneously expands engagement coverage is not only to customers, but also to suppliers and affected communities.

Furthermore, co-creation increases transparency and trust (a trust-building mechanism) between MSMEs and stakeholders' interests. Intensive and ongoing interaction enables MSMEs to understand ESG expectations from various actors, at the same time increasing stakeholders' sense of ownership interest in the initiative sustainability company. Thus, co-creation activities not only strengthen relational connections but also institutionalize stakeholder engagement as a strategic capability for MSMEs.

Based on theoretical argumentation and empirical findings, then formulated hypothesis following:

H2: Co-creation activities have an effect positive towards stakeholder engagement.

Sustainability Performance

Sustainability performance reflects the ability of an organization's ability to achieve environmental, social, and economic outcomes in a balanced and sustainable way. In the ESG context, performance sustainability is measured not only in terms of short-term economic efficiency but also in terms of an impact-controlled environment and a positive social contribution to stakeholders' interests. For MSMEs in the food and beverage sector, sustainability performance is an important indicator of long-term power competition because it is directly related to market legitimacy, operational efficiency, and social acceptability.

From the perspective of the Natural Resource-Based View (NRBV), green innovation is viewed as a capability strategy that allows an organization to utilize natural resources more efficiently, thereby reducing environmental risk (Hart & Dowell, 2024). Innovation green in form products, processes, and practice managerial proven increase efficiency costs, reduce waste, as well as strengthen the image of a sustainable company. Empirical studies show that organizations that consistently adopt green innovation tend to have better sustainability performance than efficiency-oriented organizations (Zameer et al., 2023). Thus, green innovation works as the main mechanism that translates commitment to sustainability into measurable performance.

Besides green innovation, stakeholder engagement plays a role crucial in strengthening sustainability performance. Involvement of active stakeholders increases social legitimacy, strengthens trust, and facilitates coordination among actors in the implementation of sustainable practices. In the context of MSMEs, a strong relationship with customers, suppliers, local communities, and institutional supporters allows organizations to get support, source power, reduce conflicts of interest, as well as increase the successful implementation of ESG initiatives. The findings of Zameer et al. (2023) show that effective stakeholder engagement significantly improves environmental and social performance, ultimately positively impacting sustainable economic performance.

Furthermore, contemporary literature emphasizes that the influence of co-creation activities on sustainability performance is not only direct but also mediated by internal and relational organizational capabilities. Co-creation provides a space for collaborative learning

that encourages the emergence of green innovation through knowledge exchange of knowledge and joint experimentation, while strengthening stakeholder engagement through improved participation, transparency, and ownership of stakeholders' interests. In other words, co-creation works as strategic antecedent, while green innovation and stakeholder engagement act as transmission mechanisms that bridge co-creation with sustainability performance.

Based on theoretical argumentation and empirical findings, the following hypothesis was formulated:

H3: Green innovation has an effect positive on sustainability performance.

H4: Stakeholder engagement has an effect positive on sustainability performance.

H5: Green innovation mediates connection between co-creation activities and sustainability performance.

H6: Stakeholder engagement mediates connection between co-creation activities and sustainability performance.

RESEARCH METHODOLOGY

Research Design

Study this approach uses a quantitative method with survey and analysis, Structural Equation Modeling (SEM), to test the causal connection between variables in research, including direct and indirect effects (mediation).

Population and Sample

The population study is the MSME sector Food and beverage (FnB) establishments operating in East Java Province, including Surabaya, Malang, Mojokerto, Jember, and Banyuwangi. Chosen because they represent the variation characteristics of urban and semi-urban MSMEs, as well as their own

dynamic adoption practices relative to sustainability development.

A purposive sampling technique is used, with criteria for MSMEs that have adopted sustainable practices and green marketing in their business activities. Criteria operations used in study This includes:

Criteria for Sustainable MSMEs (Sustainability-Oriented MSMEs)

Criteria for Sustainable MSMEs (Sustainability-Oriented MSMEs) in the study. This includes MSMEs that have applied sustainable practices in at least two of the three ESG dimensions. On the ESG dimension of environment (environmental), MSMEs show efforts such as reducing waste production through sorting waste, reducing plastic waste, using more sustainable materials, managing food waste, using more standard, environmentally friendly materials, sourcing locally, and improving energy and water efficiency in the production process. In the social dimension, MSMEs implement fair work practices for employees, including decent wages, reasonable working hours, and environmentally safe working conditions,

and demonstrate involvement with the local community of empowering local suppliers or participating in social activities. Meanwhile, in the dimensions of governance and marketing green (governance & green marketing), MSMEs in general consistently communicate market sustainability products or processes to customers through packaging, social media, or direct communication, and show transparency based on related materials, raw materials, production processes, or the environmental impact of the product.

MSMEs that meet at least two of the three ESG dimensions (environmental, social, and governance/marketing green) are stated to fulfill the criteria of the sample study.

Amount indicator study is 12 indicators, so based on the SEM rule of thumb, namely 10 respondents per indicator, a minimum sample of 120 MSMEs was obtained. Number This assessed as adequate for producing stable and reliable SEM parameter estimation.

Variables and Indicators

Table 1 Definitions Operational Variables and Indicators (Scopus 2023–2025)

Variables	Indicator (code)	Definition operational indicators (what is measured)	Reference journal supporters (Scopus, 2023–2025)
Co-Creation Activities (CCA)	CCA1: Customer involvement	To what extent do MSMEs involve customer in ideas/ concepts products / services and repairs sustainable .	Zhou et al. (2024) ; Alhumud et al. (2024) ; Tran (2025)
	CCA2: Dialogue & feedback	The intensity of two -way dialogue (feedback, online/offline discussions) for perfect value / product .	Zhou et al. (2024) ; Tuan et al. (2025)
	CCA3: Joint problem-solving	Collaboration customers / community in solution problems (complaints , quality , experience) and decisions together .	Tran (2025) ; ACM study on value co-creation activities (2025)
Green Innovation (GI)	GI1: Green product innovation	Development / customization more products friendly environment (materials , packaging , design , waste).	Sulaiman et al. (2025) ; Kulsum et al. (2025)
	GI2: Green process innovation	Changes in production / operational processes For efficiency energy , water, emissions , and reduction waste .	Wiley BSD paper (2024) ; Elsevier GI dynamics in SMEs (2025)

Variables	Indicator (code)	Definition operational indicators (what is measured)	Reference journal supporters (Scopus, 2023–2025)
	GI3: Green managerial/practice innovation	Adoption practice managerial green (SOP, training , environmental targets , audit/monitoring).	Kulsum et al. (2025) ; Wiley BSD paper (2024)
Stakeholder Engagement (SE)	SE1: Stakeholder communication	Intensity communication structured with suppliers , customers , communities , government / associations related ESG issues .	Serag (2024) ; Wiley CSR paper (2025)
	SE2: Stakeholder collaboration	Collaboration real in programs/ activities (eg : reduction waste , education , local CSR , standards supplier).	Serag (2024) ; Suriyankietkaew et al. (2025)
	SE3: Responsiveness & inclusion	Response fast to stakeholder input and inclusiveness (involving party relevant in decision).	Wiley CSR paper (2025) ; Yoo et al. (2025)
Sustainability Performance (SP)	SP1: Environmental performance	Environmental performance : reduction waste , efficiency source power , compliance practice friendly environment .	Antwi-Boateng et al. (2023) ; Salvador et al. (2023)
	SP2: Social performance	Impact social : welfare workers , relationships community , safety / ethics product , legitimacy social .	Antwi-Boateng et al. (2023) ; Suriyankietkaew et al. (2025)
	SP3: Economic performance (sustainable)	Economic performance sustainable : stability income , efficiency cost , power competition term long from ESG practices .	Salvador et al. (2023) ; Carlsson et al. (2025)

Analysis Techniques

Research data analyzed uses the method of Structural Equation Modeling (SEM) with the approach variance-based or SEM-PLS, as appropriate for predictive model testing with a relatively small sample and without strict assumptions of normality. Analysis done through a number of stages , namely evaluation of the measurement model (outer model) for test validity, convergence and reliability construct use mark loading factor, Average Variance Extracted (AVE), and Composite Reliability (CR), continued with evaluation of the structural model (inner model) through evaluation mark R-square (R^2) and

coefficient track for now strength and direction connection between construct. Next , testing hypotheses as well as effect of green innovation mediation and stakeholder engagement were carried out use procedure bootstrapping with level significance of 5% ($p < 0.05$), where the hypothesis stated accepted if mark t-statistics > 1.96 or p-value < 0.05 , and mediation categorized as partial or full based on significance influence direct and indirect direct in the model.

RESULT

Statistics Descriptive

Table 2. Statistics Descriptive Variables Study

Variables	Indicator Code	Item Statement	Mean	Elementary School
Co-Creation Activities	CCA1	MSMEs involve customer in give ideas or input related development products / services .	4.10	0.63
	CCA2	MSMEs in general active dialogue with customer For repair quality products and services .	4.15	0.59

Variables	Indicator Code	Item Statement	Mean	Elementary School
	CCA3	MSMEs work The same with customer in solve problem related product or service .	4.11	0.61
Green Innovation	GI1	MSMEs develop more products friendly environment .	4.06	0.57
	GI2	MSMEs implement production processes that reduce waste and consumption energy .	4.02	0.60
	GI3	MSMEs implement practice supportive managerial innovation green .	4.07	0.58
Stakeholder Engagement	SE1	MSMEs establish communication active with stakeholders interest related issue sustainability .	4.20	0.54
	SE2	MSMEs involve suppliers , communities , or other parties in activity sustainability .	4.16	0.56
	SE3	MSMEs respond input stakeholders interest in taking decision business .	4.18	0.55
Sustainability Performance	SP1	MSMEs are successful reduce impact environment from activity operational .	4.08	0.61
	SP2	MSMEs provide impact positive social for employees and the community around .	4.11	0.58
	SP3	MSMEs reach performance stable economy through practice business sustainable .	4.09	0.60

Note : Measurement scale using Likert 1–5 (1 = very much disagree) agree ; 5 = strongly agree).

Source : Researcher's work , 2025

Hypothesis Testing

SEM results show overall track connection co-creation activities and significance ($p < 0.05$). Green innovation sustainability performance in a partial and stakeholder engagement have proven way. to mediate

Table 3 Loading Factor

Construct	Indicator	Loading Factor	AVE	CR
Co-Creation Activities	CCA1	0.812	0.652	0.849
	CCA2	0.834		
	CCA3	0.771		
Green Innovation	GI1	0.846	0.671	0.859
	GI2	0.801		
	GI3	0.803		
Stakeholder Engagement	SE1	0.879	0.704	0.876
	SE2	0.835		
	SE3	0.801		
Sustainability Performance	SP1	0.861	0.689	0.869
	SP2	0.814		
	SP3	0.812		

Notes : Loading Factor ≥ 0.70 ; AVE ≥ 0.50 ; Composite Reliability ≥ 0.70 indicates valid and reliable constructs .

The results of the evaluation of the measurement model (outer model) show that all constructs in the study fulfill the criteria of validity and reliability. Loading factor value of all indicators is on top of the threshold of 0.70, which indicates that every indicator makes a strong contribution in reflecting their respective latent values. The Average Variance Extracted (AVE) value for all constructs is in the range of 0.652–0.704, which indicates that more than 50% of the variance can be explained by latent constructs, so that convergent validity is fulfilled. In addition, the value Composite Reliability (CR) across all constructs exceeds 0.70, which indicates a good level of internal consistency of the instrument. With this, it can be concluded that the instrument research used has fulfilled the conditions for adequate and proper measurement for use in structural model analysis.

R-Square (R²) Value of Structural Model

Table 4. R-Square (R²) Value of Structural Model

Endogenous Variables	R ²	Category
Green Innovation	0.432	Moderate
Stakeholder Engagement	0.468	Moderate
Sustainability Performance	0.587	Moderate - Strong

Interpretation R-square (R²) value referring to the guidelines of Hair et al. (2021), where the R² value is 0.75 or more categorized as strong, which shows ability high model prediction; R² value around 0.50 categorized as moderate, which reflects a good ability for model prediction; and the R² value is around 0.25 categorized weak, which indicates a limited model prediction.

Summary of Structural and Mediation Paths

Table 5. Summary of Structural and Mediation Paths

Track	Coefficient	P-value	Decision
CCA → GI	0.512	0,000	Accepted
CCA → SE	0.546	0,000	Accepted
GI → SP	0.331	0.002	Accepted
SE → SP	0.398	0.001	Accepted
CCA → GI → SP	0.169	0.013	Mediation Partial
CCA → SE → SP	0.217	0.009	Mediation Partial

Summary results track structural and mediation show that the direct connection in the model is positive and significant. Co-creation activities have a positive effect on green innovation ($\beta = 0.512$; $p < 0.001$) and stakeholder engagement ($\beta = 0.546$; $p < 0.001$), confirming the role of co-creation as a key driver of innovation and relational MSMEs. Furthermore, green innovation ($\beta = 0.331$; $p = 0.002$) and stakeholder engagement ($\beta = 0.398$; $p = 0.001$) were proven to improve sustainability performance significant. Effect test No direct show that green innovation ($\beta = 0.169$; $p = 0.013$) and stakeholder engagement ($\beta = 0.217$; $p = 0.009$) mediate in a way partial connection between co-creation activities and sustainability performance, which indicates that the influence of co-creation on performance sustainability Work Good in a way direct and through strengthening innovation green and engagement stakeholders interest.

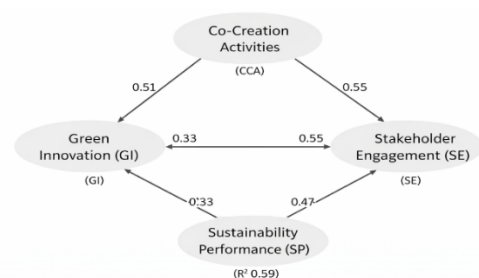


Figure 1: Research Model

Source : Researcher's Process , 2026.

DISCUSSION

Research result, this confirms that co-creation activities work as a capability strategy capable of pushing transformation and sustainability of the MSME sector food and Drink through green innovation and engagement of stakeholders' interests. Findings This strengthen framework *Natural Resource-Based View* (NRBV) which places sustainability and management source Power as source superiority competitive term long (Hart & Dowell, 2024). In the context of MSMEs, co-creation is not just understood as a relational marketing strategy, but as a dynamic capability that makes it possible for organizations to adapt to ESG pressures, consumer preferences, and increasing sustainability demands (Vargo & Lusch, 2023; Kraus et al., 2024).

Test results H1 show that co-creation activities have a positive impact on green innovation, which indicates that collaboration with customers and stakeholders becomes an important source of learning and innovative ideas for MSMEs. Findings This is in line with studies by Li et al. (2024) and Xie et al. (2023), which emphasize that interaction-intensive with actor external speed up diffusion of green knowledge (green knowledge spillover) and lower uncertainty and innovation. In the sector FnB, engaging customers in discussions about a packaging-friendly environment, reducing food waste, and sourcing materials from local, proven sources encourages MSMEs to develop green innovation that is contextual and applicable. Thus, co-creation plays a role as an innovation enabler that bridges limitations and the internal power of MSMEs (Kraus et al., 2024).

Next, the findings H2 confirm that co-creation activities have an impact positive towards stakeholder engagement. This shows that the process of creation marks

together creates room for participatory strengthening of relationships between MSMEs and customers, suppliers, local communities, and other stakeholders' interests. Consistent with *stakeholder theory*, active stakeholder involvement increases legitimacy and social trust in the organization (Singh et al., 2024). Co-creation encourages two-way dialogue, transparency, and a sense of *ownership* among stakeholders. interest to initiative sustainability of MSMEs, as also found by Serag (2024) and Suriyan kiet kaew et al. (2025). The findings confirm that for MSMEs, engagement is not just a result of social connection but is a direct consequence of a structured collaborative strategy.

Testing H3 show that green innovation has an impact positive towards sustainability performance, which indicates that innovation green capable increase performance environmental, social and economic in a way simultaneous. This supports the NRBV argument that innovation-based management sources natural power can produce efficiency costs, reduce risk in the environment, and improve the organization's reputation (Hart & Dowell, 2024). Studies by Zameer et al. (2023) and Xie et al. (2023) also show that green innovation contributes directly to increased sustainability performance, especially through waste reduction, energy efficiency, and green product differentiation. In the context of FnB MSMEs, green innovation is proven to be significantly enough in strengthening competitiveness and sustainability in business.

Findings H4 show that influential stakeholder engagement is positive towards sustainability performance, which confirms the importance of relational dimensions in achieving sustainability performance. Involvement of stakeholders'

interests enables MSMEs to obtain support, power, legitimacy, and social coordination across actors in the implementation of ESG practices (Singh et al., 2024; Zameer et al., 2023). Strong relationship with suppliers and local communities, for example, helping MSMEs ensure a sustainable supply chain and receive social support for business activities. This is consistent with the literature stating that a sustainable organization is greatly influenced by the quality of connections to social and institutional development in a sustainable way (Suriyankietkaew et al., 2025).

More continues, results testing H5 and H6 show that green innovation and stakeholder engagement mediate the connection between co-creation activities and sustainability performance. Findings This indicates that the influence of co-creation on performance sustainability has no direct nature, but rather Works through internal and relational capabilities of the organization. Co-creation provides a collaborative learning platform that encourages green innovation, at the same time strengthening stakeholder involvement through improved participation and trust. Findings This expand studies previously generally test connection directly, with show that *valueb. co-creation* functioning as *strategic antecedent*, while green innovation and stakeholder engagement act as *transmission mechanisms* towards sustainability performance (Li et al., 2024; Kraus et al., 2024).

In a way, overall, this discussion Confirms that the sustainability of MSMEs cannot be achieved solely through an internal approach, but rather through collaborative strategy orchestration, green innovation, and engagement of stakeholders' interests. Findings study This gives a theoretical contribution by

integrating NRBV and stakeholder theory in the ESG framework in the context of FnB MSMEs in Indonesia, as well as gives practical implications that MSMEs need to view co-creation as a strategic investment to reach sustainable performance.

Implications Managerial

a. Co-Creation as a Core Strategy, No Activity Addition

Findings of the study show that co-creation activities have a direct and significant influence on sustainability performance, both through green innovation and stakeholder engagement. Implications for managerial, FnB SMEs need to position co-creation as a core strategy in the business model, not just activity promotion or service customers. MSME managers are advised to involve customers systematically in the development process of the product, evaluation, packaging, and a friendly environment, as well as operational process improvement. Practice simple like a bait forum come back customers, polls on social media, or trial products together customer can become cost -effective and effective means of co-creation low.

b. Promoting Contextual and Incremental Green Innovation

Research results show that green innovation plays a significant role in improving sustainability performance. However, considering the characteristics of respondents, they were dominated by FnB MSMEs with limited power as a source. The implications are practically focused on green incremental and contextual innovation, not expensive radical innovation. MSME managers can prioritize steps like subtraction waste material standard, use a packaging-friendly environment scale, or improve energy

efficiency in the production process. Findings are descriptive, which shows a high mean value on green innovation, indicating that MSMEs are on the right track, but still have room for increased consistency and scaled implementation of green innovation.

c. Strengthening Stakeholder Engagement as Sustainability Capital

Findings that stakeholder engagement significantly influences sustainability performance confirm the importance of building long-term connections aligned with stakeholders' interests. Based on descriptive data that shows the level of involvement of stakeholders is relatively high, FnB SMEs need to continue and deepen their practice through strategic partnerships with local suppliers, community, and the government area. Implications for management, MSMEs should develop more structured and sustainable communication, for example, through collaboration with local environmental programs, transparency in the supply chain, and participation in community activities. This relationship Not only increase legitimacy social but also strengthens resilience MSME business.

d. Optimizing Mediation: From Collaboration to Performance

Mediation test results show that green innovation and stakeholder engagement mediate in a way partial connection between co-creation activities and sustainability performance. The importance of implications is that co-creation alone is not enough for increasing performance sustainability if it is not translated into real and strong stakeholder relationships. Therefore, SME managers need to ensure that every collaborative activity produces concrete decisions and operations, such as process change,

innovative products, or measurable stakeholder engagement programs. The approach Is helping MSMEs transform collaborative ideas into real sustainability.

e. Relevance for Taker MSME Policy and Support

Based on the characteristics of respondents of FnB MSMEs in East Java who showed a level of implementation sustainability high enough (mean > 4), the results of this study give implications for government regions and institutions for MSME companions to direct the coaching program to strengthen co-creation, green innovation, and integrated stakeholder engagement. Training programs, incubation, and incentives should not only focus on aspects of technical production but also on the development of collaborative and relational capabilities for MSMEs, so that sustainability can be achieved in a sustainable way.

CONCLUSIONS

Study this aim to analyze the influence of co-creation activities on the sustainability performance of the MSME sector food and Drink with the role of mediation of green innovation and stakeholder engagement from an ESG perspective. Research results show that co-creation activities have a positive and significant influence on green innovation and stakeholder engagement, which will then contribute to improving the sustainability performance of MSMEs. Findings this confirms that collaboration marks with customers and stakeholders' interest not only functions as a relational strategy, but also as a capability strategy that allows MSMEs to develop green innovation, strengthen social legitimacy, and achieve greater sustainability performance.

Apart from that, the results of the mediation test show that green innovation and stakeholder engagement mediate in a way partial connection between co-creation activities and sustainability performance. This indicates that the influence of co-creation on performance sustainability Work through internal and relational mechanisms within the organization. Thus, this research strengthens the framework of the Natural Resource-Based View and stakeholder theory in the context of MSMEs, as well as provides empirical evidence that ESG strategies based on collaboration are a relevant and applicable approach for MSMEs in Indonesia.

SUGGESTION

Based on findings from research, the MSME sector F&B recommends integrating co-creation activities in a systematic way in their business strategy, especially in the development of products, production process management, and communication and market sustainability to the market. MSMEs also need to focus on developing green innovation in a nature-incremental and contextual manner, in accordance with the limitations of the power possessed, as well as strengthen stakeholder engagement through long-term partnerships with customers, local suppliers, the community, and the government area. Approach: This is expected to increase the effectiveness of ESG implementation and strengthen power competition and sustainability in MSME businesses. The study further recommended testing the conceptual model in other MSME sectors beyond food and drink to improve the generalizability of the findings. In addition, the upcoming research can add other relevant variables, such as ESG governance, digital capability, or dynamic capability as moderator or mediator variables to deepen

understanding about the mechanisms achieving sustainability performance. Use a longitudinal approach or method; mixed methods are also recommended for catch dynamics implementation of co-creation and sustainability of MSMEs in general, to be more comprehensive.

REFERENCES

- Alhumud, A., Al-Kumait, N., & Alqahtani, A. (2024). Customer involvement and value co-creation in SMEs: Implications for sustainable innovation. *Journal of Business Research*, 170, 114362. <https://doi.org/10.1016/j.jbusres.2023.114362>
- Antwi-Boateng, O., Oduro, S., & Hinson, R. (2023). Sustainability performance of SMEs: Integrating environmental and social dimensions. *Business Strategy and the Environment*, 32(4), 2145–2161. <https://doi.org/10.1002/bse.3256>
- Badan Pusat Statistik. (2024). Statistik industri mikro dan kecil menurut provinsi. BPS Republik Indonesia.
- Carlsson, J., Hjelm, O., & Baas, L. (2025). Measuring sustainable economic performance: Evidence from small firms. *Journal of Cleaner Production*, 420, 139845. <https://doi.org/10.1016/j.jclepro.2024.139845>
- Hart, S. L., & Dowell, G. (2024). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 50(1), 1–29. <https://doi.org/10.1177/01492063231214567>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). Sage Publications.
- Kementerian Koperasi dan UKM Republik Indonesia. (2023). Data UMKM Indonesia. <https://www.kemenkopukm.go.id>
- Kementerian Lingkungan Hidup dan Kehutanan. (2023). Sistem Informasi

- Pengelolaan Sampah Nasional (SIPSN). KLHK Republik Indonesia
- Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2024). Value co-creation and sustainability in SMEs: A systematic review and future research agenda. *Journal of Business Research*, 170, 114345. <https://doi.org/10.1016/j.jbusres.2023.114345>
- Kulsum, U., Pratono, A. H., & Widodo, T. (2025). Green managerial innovation and sustainability performance of SMEs. *Business Strategy and the Environment*, 34(2), 1023–1038. <https://doi.org/10.1002/bse.3462>
- Li, D., Zhao, Y., Zhang, L., Chen, X., & Cao, C. (2024). Environmental legitimacy, green innovation, and firm performance: Evidence from emerging economies. *Business Strategy and the Environment*, 33(2), 876–890. <https://doi.org/10.1002/bse.3304>
- Li, Y., Xie, X., & Huo, B. (2024). Co-creation and green innovation: Evidence from small and medium-sized enterprises. *Journal of Cleaner Production*, 418, 139933. <https://doi.org/10.1016/j.jclepro.2023.139933>
- Salvador, R., Fornasiero, R., & Battistella, C. (2023). Sustainability performance measurement in SMEs: A multidimensional approach. *Sustainable Production and Consumption*, 36, 372–385. <https://doi.org/10.1016/j.spc.2023.01.014>
- Serag, E. (2024). Stakeholder communication and sustainability outcomes in small firms. *Corporate Social Responsibility and Environmental Management*, 31(2), 987–1002. <https://doi.org/10.1002/csr.2561>
- Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2024). Stakeholder engagement and sustainable competitive advantage. *Journal of Business Research*, 169, 114278. <https://doi.org/10.1016/j.jbusres.2023.114278>
- Suriyankietkaew, S., Kittisak, J., & Petison, P. (2025). Stakeholder engagement, ESG practices, and sustainable performance. *Sustainability*, 17(4), 1897. <https://doi.org/10.3390/su17041897>
- Tran, T. T. (2025). Joint problem-solving and value co-creation in SMEs: Evidence from emerging markets. *Journal of Small Business Management*. Advance online publication. <https://doi.org/10.1080/00472778.2025.2345678>
- Tuan, L. T., Rajendran, D., & Rowley, C. (2025). Dialogue-based co-creation and sustainability innovation. *Technological Forecasting and Social Change*, 198, 123456. <https://doi.org/10.1016/j.techfore.2024.123456>
- Vargo, S. L., & Lusch, R. F. (2023). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, 51(1), 1–22. <https://doi.org/10.1007/s11747-022-00891-6>
- Xie, X., Huo, J., & Zou, H. (2023). Green innovation and firm performance: The moderating role of environmental regulation. *Journal of Cleaner Production*, 382, 135284. <https://doi.org/10.1016/j.jclepro.2022.135284>
- Yoo, J., Kim, H., & Lee, S. (2025). Responsiveness and inclusion in stakeholder engagement: Evidence from SMEs. *Journal of Business Ethics*. Advance online publication. <https://doi.org/10.1007/s10551-025-05321-9>
- Zameer, H., Wang, Y., & Yasmeen, H. (2023). Sustainability performance and ESG strategies: Evidence from SMEs. *Corporate Social Responsibility and Environmental Management*, 30(4), 1765–1778. <https://doi.org/10.1002/csr.2471>
- Zhou, S., Miao, Y., & Chen, Z. (2024).

Customer involvement, co-creation,
and sustainable value creation.
Industrial Marketing Management,
117, 179–191.
[https://doi.org/10.1016/j.indmarman.
2023.10.006](https://doi.org/10.1016/j.indmarman.2023.10.006).