

Elevating Green Business and Product on Small Business: Impact of Green Entrepreneurship Motivation, Green Operation Management, and Green Marketing

Dewi Nusraningrum¹, Winda Widyanty², Ririn Wulandari³

Abstract

Small businesses with insights into the market potential for green products in the densely populated Capital region of Indonesia and its surroundings, encourage investment and innovation in developing new green products and understand the contribution of promoting environmental sustainability and strengthening a sustainable green economy in the region. Small entrepreneurs with limited investment have green entrepreneurship motivation and a green orientation to preserve the environment in populated cities, yet they must be exposed. Data were collected through online and in-person questionnaire distribution. The questions discuss green entrepreneurship motivation, green operations management, green business, green products, and green marketing in small businesses 358. The data was processed using SEM-PLS. The motivation of green entrepreneurs is proven to influence the management of green operations, businesses, products, and marketing. It has also been proven that green operations management, business, and marketing can mediate green Entrepreneurship motivation. Green Entrepreneurship motivation can increase the tied variables studied. Green businesses and products need to be nurtured by stakeholders so that small entrepreneurs care about sustainability. This research needs to be carried out on an ongoing basis throughout Indonesia to provide a complete research model.

Keywords: *Green Business, Green Product, Green Operation Management, Green Entrepreneurship Motivation, Green Marketing.*

Introduction

Small and Medium Enterprises (SMEs) play an important role in the creation of goods and services, as they account for more than 95% of all businesses, as well as about two-thirds of employment (Purwandani & Michaud, 2021). The impact of green entrepreneurship on green business, green products, and green marketing on small businesses in Jakarta, Bogor, Depok, Tangerang, Bekasi (Jabodetabek), Indonesia, by referring to environmental issues related to the growth of green businesses. So the discussion about market characteristics and consumer behavior in the Greater Jakarta area is a consideration for operating green businesses. Greater Jakarta faces serious environmental problems, including air pollution, waste problems, and other environmental damage. It pressures small businesses to find creative and innovative ways based on Sustainability Development Goals (Arabeche et al., 2022; Purwandani & Michaud, 2021). Environmental damage comes from food processing waste, fabric dyeing waste, fruit washing waste, meat washing waste, fish washing waste, and vegetable washing waste contribute to environmental damage through business waste produced in the form of liquid waste such as the use of chemicals in large quantities so that severe chemical contamination occurs, resulting in severe damage to human health. genetic structure and reproductive products as well as the environment, solid waste. waste gas.

Public awareness of the importance of environmental protection is increasing, and interest in green businesses and products (Gelderman et al., 2021; Kamalanon et al., 2022; Lindgren & Ek, 2023; Nuryakin & Maryati, 2020; Nusraningrum et al., 2022). The Government has encouraged the implementation of green economy green business practices through environmental regulations and policies, including incentives for

¹ Departamento de Pedagogía de los Idiomas Nacionales y Extranjeros, Facultad de Filosofía, Letras y Ciencias de la Educación, Universidad Técnica de Manabí, Portoviejo, Ecuador; monica.vaca@utm.edu.ec.

² Departamento de Sistemas Computacionales, Facultad de Ciencias Informáticas, Universidad Técnica de Manabí, Portoviejo, Ecuador; ermenson.ordonez@utm.edu.ec.

³ Departamento de Sistemas Computacionales, Facultad de Ciencias Informáticas, Universidad Técnica de Manabí, Portoviejo, Ecuador; leticia.vaca@utm.edu.ec.

companies that prioritize environmental sustainability. The large and dense population in the Greater Jakarta area creates a potential market for green businesses and products.

Consumers are increasingly choosing products and services that are sustainable and green (Tezer & Bodur, 2021). Previous research has found that green products, marketing, and operations are influenced by green entrepreneurship motivation in small businesses (Arabeche et al., 2022; Bhatti et al., 2022; Majali et al., 2022). It can be said that green business practices to produce green products are determined by small businesses' motivation to operate and market the products they produce.

Other findings reinforce those green products produced by a business, both small and medium, cannot stand alone without a series of previous processes ranging from the motivation of business actors, the process of processing environmentally friendly raw materials, to how to market the product according to green or ecologically friendly principles (Nusraningrum, Sugiyono, et al., 2023; Tezer & Bodur, 2021). Therefore, this study is needed to find out and analyze whether small businesses have played a role in the green economy by implementing green business principles (Hamidi et al., 2022; UNEP, 2010).

The purpose of this study is to prove the following problem formulation; Are the hypotheses about small business green products and small business green businesses influenced by green entrepreneurship motivation, green operations management, and green marketing? By investigating these variables, the findings will contribute to small businesses practicing green management on the business in Indonesia, especially in populated areas.

Literature Review

Green Entrepreneurship Motivation (GEM)

Green entrepreneurship is a behavior that arises due to motivation that comes from inside and outside business people when running their business (Majali et al., 2022; Sulastiningsih et al., 2023). So green business practices that produce green products in addition to having green economy-oriented economic goals must be supported by strong efforts or motivation from entrepreneurs for business goals based on environmental sustainability. Of course, the value values embraced by entrepreneurs must be in line with high environmental awareness and sensitivity to environmental issues with the demand of consumers who are also environmentally conscious. With the design, the green products produced have met the standards of consumer demand, and the green products will have high competitiveness in the sustainability of green business (Al Shammre et al., 2023; Nuryakin & Maryati, 2020).

Green Operations Management (GOM)

To support a green business, a small entrepreneur must run his business operations starting from the selection of raw materials and processing them in an environmentally friendly framework so that it can be said to carry out green operation management in his business ventures (Chawla et al., 2020; Gupta et al., 2022). Green operation management starts with business design, raw product selection, how to produce, how to market, and how to recycle production waste so that it is oriented toward green business and responsible for environmental sustainability (Nusraningrum et al., 2021; Nusraningrum, Mekar, et al., 2023). This understanding is in line with the green production process, where if planning is carried out carefully following green operation management standards even on a small business scale, operational costs can be reduced, green product excellence can be achieved, consumer needs can be met and of course contribute to environmental sustainability efforts.

Green Business (GBs)

Environmentally friendly has become an important issue for business operations of various business scales, and green business for small business actors has also become a trend in today's business strategy (Masocha, 2018; Purwandani & Michaud, 2021). Products that have environmentally friendly value can be ensured to come from the production of a business that is carried out in an environmentally friendly manner as

well. Green businesses have strong roots in environmental sustainability from the processing of raw materials to the packaging used to offer their products to their intended customers (Lindgren & Ek, 2023; Nusraningrum et al., 2021; Purwandani & Michaud, 2021; Rademaker & Royme, 2018). So that. The green business of small entrepreneurs has a clear distinction compared to its competitors to preserve the environment.

Green Products (GPr)

Green products in small businesses refer to goods or services that are designed and produced with minimal environmental impact in mind and meet sustainability standards emphasizing the importance of the entire product life cycle—from raw material selection, production process, use, to disposal—to ensure that the product is environmentally friendly. The use of renewable energy or energy efficiency as much as possible, reprocessing waste to become green products, minimizing hazardous materials, and innovating in the use of environmentally friendly materials can be done by small businesses (Kamalanon et al., 2022; Moslehpour et al., 2023; Nuryakin & Maryati, 2020; Nusraningrum, Sugiyono, et al., 2023; Tezer & Bodur, 2021). The green products produced have of course been adjusted to market demand so that small businesses continue their business and even green products can have added value attached to the hearts of consumers so that they can improve the brand image of the product and be sustainable (Chang, 2019; Chen et al., 2022; Majali et al., 2022).

Green Marketing (GMk)

A small business that runs its business green and produces green products, the small business will carry out green marketing by using environmentally friendly labels, environmentally friendly packaging, and promotions according to the principles of environmental sustainability (Gelderman et al., 2021; Rademaker & Royme, 2018; Saleem et al., 2021; Sugandini et al., 2020; Vilkaite-Vaitone et al., 2022). Green marketing is carried out by communicating the entire production process of green products to customers starting from business planning, and production to the distribution pattern of green products produced for their loyal customers to enjoy. In addition, it is also conveyed to customers how this green business manages its production waste so that consumers are confident that they have chosen green products that suit their interests. Through this strategy, small businesses not only support sustainability but can also achieve sustainable growth in the long term (Fernando et al., 2019).

Hypothesis development

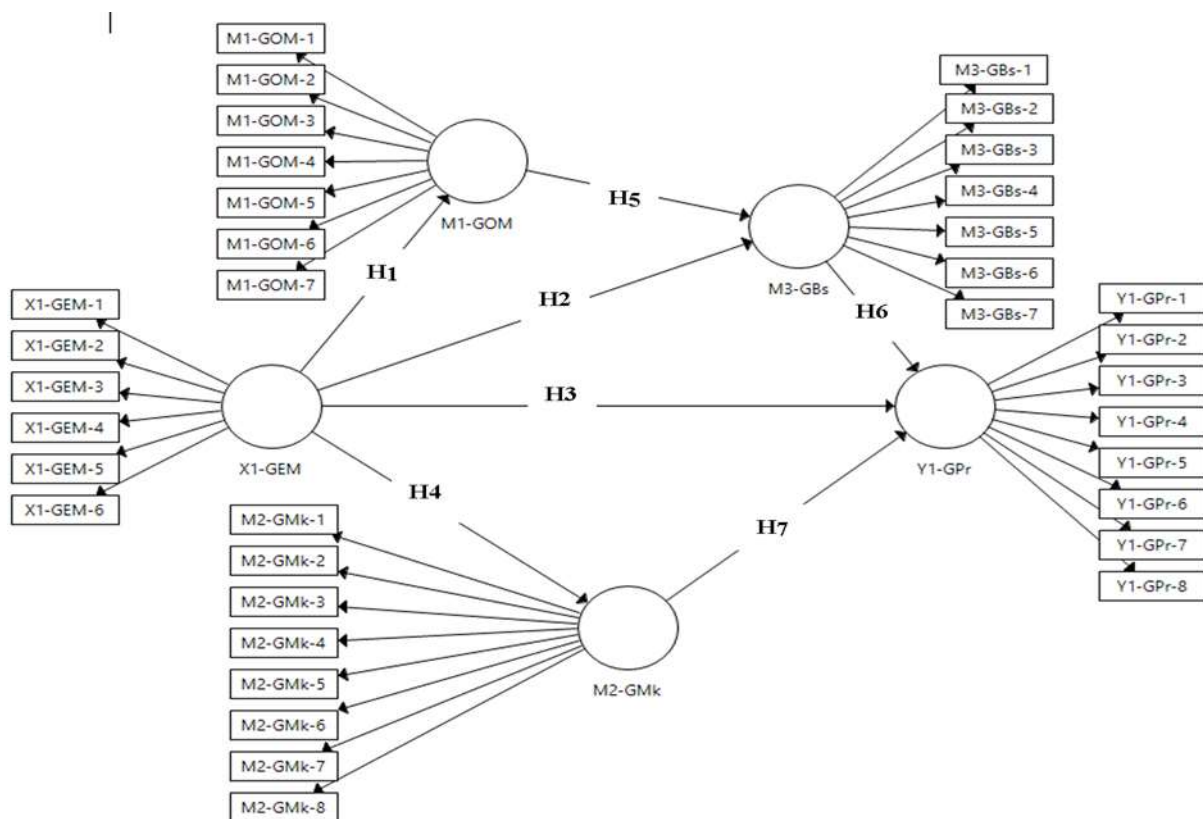
Research on green entrepreneurship motivation, and green operations management in small businesses in densely populated areas has never been done before. In contrast, green entrepreneurship motivation has been widely used to explain operations, business, product, and marketing management practices in medium and large-scale companies. The formulation of the hypotheses is as follows:

- H1. GEM affects GOM.
- H2. GEM affects GBs.
- H3. GEM affects GPr.
- H4. GEM affects GMk.
- H5. GOM effect GBs.
- H6. GBs affect GPr.
- H7. GMk affects GPr.
- H8. GOM can mediate GEM and GBs.

- H9. Gmk can mediate GEM and GPr.
- H10. GBs can mediate GOM and GPr.
- H11. GOM and GBs can mediate GEM and GPr.
- H12. GBs can mediate GEM and GPr.

Figure 1, indicates the positive effect of GEM, GOM, GMk, and GBs on GPr. GOM as mediator 1, GMk as mediator 2, and GBs as mediator 3.

Figure 1. Research Model



Research Methodology

Our research method is quantitative using a deductive method uses convenience sampling, a type of non-probability sampling that is commonly used (Hair et al., 2021). The sample for the study amounted to 358 small entrepreneurs who are engaged in various fields of small business activities. The survey was directly used to collect responses from these small businesses to ensure that no data was lost and that all questions had been answered using a questionnaire, it has gone through wording proof from 30 people before being distributed to respondents.

The measurement method uses a Likert scale used to measure variable indicators. The data analysis run by SEM-PLS software version 4, starts from reflective indicators that are tested by looking at the cross-loading value between the indicator and its construction, and composite reliability testing. Then Inner Model Evaluation uses R-square for dependent constructs, the Stone-Geisser Q-square test for predictive relevance, and a t-test for the significance of structural path parameter coefficients. Inner model analysis/model structural analysis is carried out to ensure that the structural model built is robust and accurate. The evaluation of the structural model was analyzed by the significance of the relationships

between constructs indicated by the t-statistic and bootstrapping (Hair et al., 2021).

Result and Discussion

This study uses a quantitative approach to examine the influence of GEM, GOM, and GMk on GBs and GPr. Data was collected through questionnaires distributed directly to Small Businesses in Greater Jakarta, Indonesia. The analysis was conducted using Smart PLS to explore the direct and mediated effects of GOM, GMk, and GBs on GPr (Hair et al., 2021). By utilizing PLS-SEM, this study seeks to provide valuable insights into how small business sustainability practices are. This approach allows for a comprehensive assessment of the complex relationships between variables and contributes to an understanding of how green practices are in small businesses (Miroshnychenko et al., 2017)

Data Analysis and Results

Table 1 depicts the distribution of various business sectors by gender highlighting the diversity and representation of different types of enterprises.

Table 1. Business Demographic

No.	Type of Business	F	M	Total
1.	Agriculture	4	2	6
2.	Animal Trade		1	1
3.	Automotive	1	3	4
4.	Beauty	5		5
5.	Business	13	1	14
6.	Crafts	13	3	16
7.	Education	1		1
8.	F&B	144	57	201
9.	Fashion	23	4	27
10.	Furniture	1	1	2
11.	Manufacturing		2	2
12.	Mining		1	1
13.	N/A	1	2	3
14.	Online Business	6	7	13
15.	Property	5	2	7
16.	Recycling		1	1
17.	Retail	15	11	26
18.	Services	12	8	20
19.	Students	1	2	3
20.	Trade	2	3	5
	Total	247	111	358

Table 2. Monthly Income

Monthly Income (Million IDR)	F	M	Total
<1	47	24	71
>5	43	33	76
1 to 2	54	19	73
2 to 3	51	16	67
4 to 5	52	19	71
Total	247	111	358

Table 2 indicates the largest group of business owners falls into an income of more than 5 million IDR per month, with 76 individuals. The income with less than 1 million IDR per month contains the smallest group, with 71 businesses. This trend of female dominance indicates that women are not only active but also successful across various income levels. Interestingly, the 4 to 5 million IDR income also shows a balanced distribution, with 71 businesses (52 females and 19 males). Female business owners dominate in the 1 to 2 million IDR and 2 to 3 million IDR. Female entrepreneurs are well-represented across all income levels, often outnumbering their male counterparts. that entrepreneurship is accessible and viable across a wide range of financial outcomes.

Table 3. Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
GOM	0.925	0.926	0.940	0.690
GMk	0.946	0.947	0.955	0.727
GBs	0.917	0.918	0.934	0.669
GEM	0.873	0.875	0.905	0.612
GPr	0.898	0.900	0.918	0.585

Table 3 shows that all constructs have good reliability, with Cronbach's Alpha values ranging from 0.873 to 0.946 and Composite Reliability between 0.905 to 0.955, both above the 0.7 threshold. The Average Variance Extracted (AVE) value is also quite good. However, GP has the lowest AVE value (0.585), which is still close to the 0.5 threshold, indicating that the model has a strong internal consistency.

Table 4. Cross Loading

	M1-GOM	M2-GMk	M3-GBs	X1-GEM	Y1-GPr
M1-GOM-1	0.815	0.562	0.587	0.426	0.497
M1-GOM-2	0.821	0.589	0.611	0.406	0.520
M1-GOM-3	0.816	0.562	0.609	0.394	0.489
M1-GOM-4	0.829	0.548	0.601	0.435	0.522
M1-GOM-5	0.831	0.615	0.636	0.454	0.521
M1-GOM-6	0.866	0.576	0.650	0.405	0.501
M1-GOM-7	0.837	0.608	0.682	0.439	0.560
M2-GMk-1	0.641	0.866	0.659	0.509	0.610
M2-GMk-2	0.573	0.863	0.601	0.502	0.547
M2-GMk-3	0.578	0.848	0.652	0.502	0.610
M2-GMk-4	0.604	0.862	0.641	0.485	0.574
M2-GMk-5	0.627	0.828	0.642	0.502	0.565
M2-GMk-6	0.596	0.857	0.629	0.510	0.587
M2-GMk-7	0.578	0.847	0.622	0.458	0.544
M2-GMk-8	0.565	0.848	0.635	0.495	0.608
M3-GBs-1	0.579	0.596	0.805	0.472	0.589
M3-GBs-2	0.576	0.547	0.802	0.430	0.589
M3-GBs-3	0.624	0.625	0.795	0.541	0.595
M3-GBs-4	0.580	0.630	0.821	0.498	0.629
M3-GBs-5	0.660	0.624	0.808	0.412	0.546
M3-GBs-6	0.652	0.619	0.854	0.447	0.609

	M1-GOM	M2-GMk	M3-GBs	X1-GEM	Y1-GPr
M3-GBs-7	0.639	0.621	0.837	0.439	0.625
X1-GEM-1	0.384	0.441	0.461	0.754	0.403
X1-GEM-2	0.350	0.358	0.400	0.769	0.438
X1-GEM-3	0.391	0.498	0.454	0.825	0.451
X1-GEM-4	0.395	0.434	0.405	0.790	0.455
X1-GEM-5	0.434	0.532	0.477	0.787	0.463
X1-GEM-6	0.428	0.450	0.455	0.768	0.433
Y1-GPr-1	0.469	0.501	0.534	0.372	0.739
Y1-GPr-2	0.482	0.541	0.569	0.430	0.774
Y1-GPr-3	0.488	0.527	0.565	0.482	0.781
Y1-GPr-4	0.498	0.527	0.593	0.430	0.786
Y1-GPr-5	0.410	0.489	0.477	0.401	0.712
Y1-GPr-6	0.464	0.536	0.577	0.479	0.780
Y1-GPr-7	0.462	0.535	0.560	0.389	0.762
Y1-GPr-8	0.522	0.515	0.589	0.455	0.780

Table 4 shows that each indicator has the highest correlation with its construct compared to the others, which shows the validity of sufficient discrimination between variables.

Table 5. Fornell-Larcker Criterion

	M1-GOM	M2-GMk	M3-GBs	X1-GEM	Y1-GPr
M1-GOM	0.831				
M2-GMk	0.699	0.852			
M3-GBs	0.753	0.745	0.818		
X1-GEM	0.509	0.582	0.566	0.783	
Y1-GPr	0.621	0.682	0.731	0.563	0.765

Table 5 shows that each construct has a higher correlation with its indicators compared to other constructs, indicating a good validity of discrimination among variables.

Table 6. Heterotrait-Monotrait Ratio

	M1-GOM	M2-GMk	M3-GBs	X1-GEM	Y1-GPr
M1-GOM					
M2-GMk	0.746				
M3-GBs	0.816	0.799			
X1-GEM	0.564	0.635	0.631		
Y1-GPr	0.680	0.739	0.804	0.634	

Table 6 shows that all values are below the 0.9 threshold, indicating that there is sufficient discriminatory validity among all the constructs tested.

Table 7. R²

	R Square	R Square Adjusted
M1-GOM	0.259	0.257
M2-GMk	0.338	0.336
M3-GBs	0.613	0.611
Y1-GPr	0.593	0.589

Table 7 shows that the model has varying predictive power, with the M3-GBs and Y1-GPr constructs having the highest R² values, of 0.613 and 0.593, respectively, indicating that the free variables in the model can account for about 61.3% and 59.3% of the variance in the construct.

Table 8. f²

	M1-GOM	M2-GMk	M3-GBs	X1-GEM	Y1-GPr
M1-GOM			0.754		
M2-GMk					0.063
M3-GBs					0.211
X1-GEM	0.350	0.511	0.117		0.039
Y1-GPr					

Table 8 shows that M1-GOM has the strongest effect on M3-GBs, while M2-GMk and M3-GBs have a smaller but significant effect on Y1-GPr, with X1-GEM showing a moderate effect.

Table 9. Q²

	SSO	SSE	Q ² (=1-SSE/SSO)
M1-GOM	2506.000	1042.641	0.584
M2-GMk	2864.000	1029.402	0.641
M3-GBs	2506.000	1123.234	0.552
X1-GEM	2148.000	1172.880	0.454
Y1-GPr	2864.000	1557.577	0.456

Table 9 shows the strongest predictive ability M2-GMk at 0.641, followed by M1-GOM at 0.584, and M3-GBs at 0.552.

Table 10. Model Fit

	Saturated Model	Estimated Model
SRMR	0.046	0.135
d_ULS	1.415	12.063
d_G	0.782	0.928
Chi-Square	1543.857	1705.792
NFI	0.848	0.832

Table 10 shows that the Saturated Model has a better fit compared to the Estimated Model, which is indicated by lower SRMR, d_ULS, and d_G values and higher NFI values.

Table 11. Direct Effect

Hypothesis	(O)	(M)	(STDEV)	T Stat	P Values
X1-GEM → M1-GOM	0.509	0.515	0.047	10.860	0.000
X1-GEM → M3-GBs	0.247	0.251	0.052	4.756	0.000
X1-GEM → Y1-GPr	0.160	0.160	0.063	2.544	0.011
X1-GEM → M2-GMk	0.582	0.586	0.037	15.532	0.000
M1-GOM → M3-GBs	0.628	0.626	0.046	13.631	0.000
M3-GBs → Y1-GPr	0.453	0.452	0.072	6.337	0.000
M2-GMk → Y1-GPr	0.251	0.253	0.069	3.653	0.000

Table 11 shows that hypotheses 1 to 7 are proven to have a positive and significant influence.

Figure 2. Bootstrapping Model

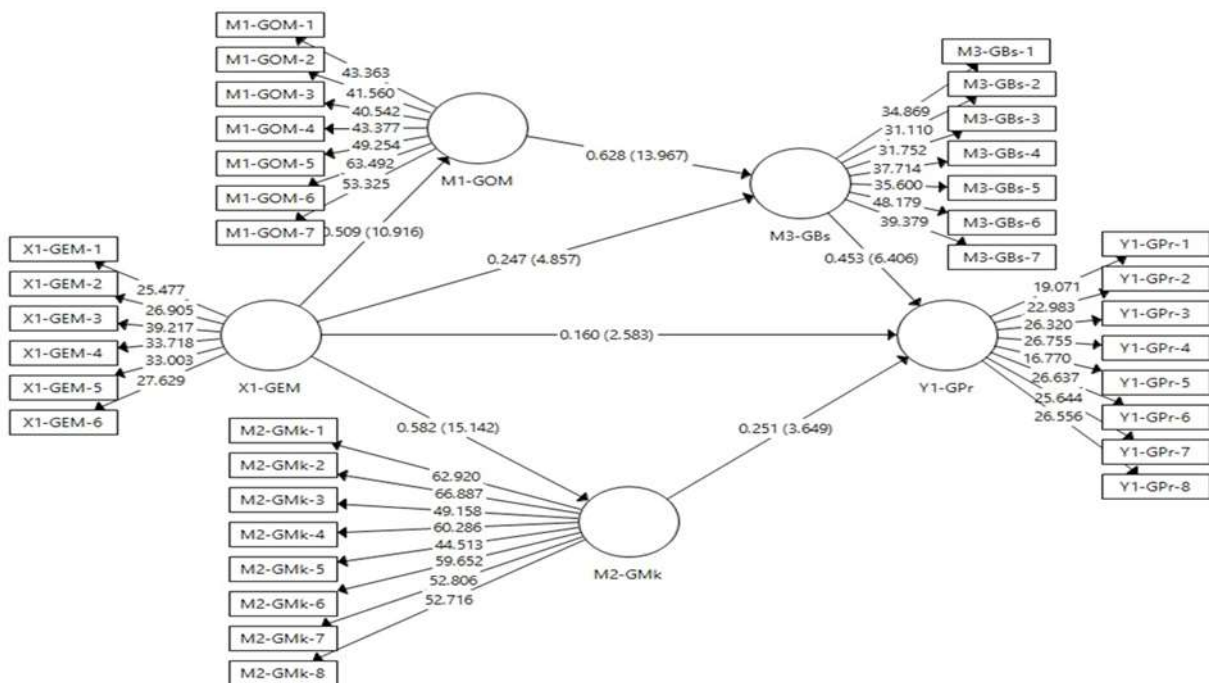


Figure 2 shows that X1-GEM affects M1-GOM, M2-GMk, and M3-GBs, and affects Y1-GPr. Mediation is also seen on several pathways, such as from X1-GEM through M1-GOM to M3-GBs, indicating that mediator variables play an important role in explaining the relationships between these variables.

Table 12. Indirect Effect

Hypothesis	(O)	(M)	(STDEV)	T Stat	P Values
X1-GEM → M1-GOM → M3-GBs	0.320	0.322	0.034	9.456	0.000
X1-GEM → M2-GMk → Y1-GPr	0.146	0.149	0.044	3.335	0.001
M1-GOM → M3-GBs → Y1-GPr	0.285	0.283	0.046	6.186	0.000
X1-GEM → M1-GOM → M3-GBs → Y1-GPr	0.145	0.145	0.027	5.390	0.000
X1-GEM → M3-GBs → Y1-GPr	0.112	0.114	0.031	3.617	0.000

Table 12 describes those hypotheses 8 to 12 variables GOM, GBs, and GMk can be mediating variables.

GEM toward GOM shows that GEM significantly affects GOM indicating that green entrepreneurship motivation directly contributes to green operation management. The implementation of green entrepreneurship is starting to significantly impact their operational management (Heizer, Jay ; Render, 2015). The motivation to adopt green practices has encouraged business actors to focus more on energy efficiency, waste reduction, and the sustainable use of raw materials. Small businesses that integrate green entrepreneurship motivation into their operational strategies tend not only to improve efficiency and reduce production costs but also to increase competitiveness through added value generated from environmentally responsible business practices (Al Shammre et al., 2023; Nuryakin & Maryati, 2020; Nusraningrum, 2022).

GEM toward GBs proves that green entrepreneurship motivation also affects green business. This can be interpreted as small businesses in the region being quicker to integrate green principles into their daily operations and marketing strategies than they are in the development of an overall green business model (Gelderman et al., 2021; Lindgren & Ek, 2023). Nonetheless, the motivational impact of green entrepreneurship remains important in driving the transition to a more sustainable business, although there may still be challenges in its broader application to overall business aspects. To maximize this potential, small businesses need to strengthen their commitment to green business innovation that not only focuses on operations and marketing but also more holistic and sustainable business development strategies (Fernando et al., 2019; Huang et al., 2022).

GEM toward GPr shows that green entrepreneurship motivation impact on green products. The finding that green entrepreneurship motivation has a limited direct impact on green products in various small businesses in Greater Jakarta with an average income of 1 to 5 million rupiah per month reflects the challenges faced by small businesses in green product innovation. Limited income often directs business priorities to basic operational and marketing needs, so that the space to invest in green product development is limited (Kamalanon et al., 2022; Moslehpour et al., 2023; Nuryakin & Maryati, 2020; Nusraningrum, Sugiyono, et al., 2023; Tezer & Bodur, 2021). Although the motivation for green entrepreneurship exists, limited resources make the impact on green product innovation not as strong as in operational or marketing aspects. Therefore, external support, such as training or access to financing, is needed so that small businesses can focus more on developing sustainable green products so that they can compete in a market that is increasingly environmentally conscious.

GOM toward GBs indicates that green operation management strongly influences the green business strategy, confirming that well-managed green operations are the basis for an effective strategy of green business (Lindgren & Ek, 2023; Nusraningrum et al., 2021; Purwandani & Michaud, 2021). This shows that when small businesses successfully implement green operation management, they are better able to develop business strategies that support sustainability and competitive advantage in the market. Green business can be said to be the result of green operation management that uses environmentally friendly raw materials, produces raw materials through environmentally friendly processing processes by minimizing waste and producing environmentally friendly products.

GEM affects GMk It is evident that green marketing is influenced by green entrepreneurial motivation. It can be said that the motivation of small entrepreneurs to run a green business will encourage the entrepreneur to do marketing that is also oriented towards environmentally friendly marketing (Gelderman et al., 2021; Rademaker & Royne, 2018; Saleem et al., 2021; Sugandini et al., 2020; Vilkaite-Vaitone et al., 2022). Environmentally friendly behavior, which is the identity of small business actors, has increased their commitment to carrying out their business activities in line with the demands of environmentally friendly issues. It can even be said that these small entrepreneurs have become agents of environmentally friendly behavior change that can infect consumers who have not wholeheartedly consumed green products. This means that the green behavior of small entrepreneurs will make consumers more aware in choosing the products they consume.

GBs on GPr prove that green products are influenced by green business, where when a business venture has run its business in an environmentally friendly manner, it is expected that the products produced are environmentally friendly products or green products. This is because a green business is a business identity that has been planned by applying green patterns and strategies in its business practices.

Therefore, green businesses with green value standards can meet markets that have green value standards and meet environmental sustainability values. Green products enjoyed by consumers will have competitive value in meeting customer needs for environmentally friendly products (Kamalanon et al., 2022; Moslehpour et al., 2023; Nuryakin & Maryati, 2020; Nusraningrum, Sugiyono, et al., 2023; Tezer & Bodur, 2021).

GMk on GPr, it is proven that green products are influenced by green marketing, where when a business offers green products, then logically the marketing function of the business will lead to green marketing. Green or environmentally friendly marketing in small businesses has usually been carried out without realizing it, for example, traditional food sellers who are small businesses usually wrap their traditional food products with banana leaves. Environmentally friendly banana leaves are also packaging that can attract Indonesian customers higher, because of their traditional color and appearance so that customers will be interested in buying. In addition, this local wisdom is a green marketing function that has unwittingly fulfilled the responsibility of environmental sustainability (Gelderman et al., 2021; Hengboriboon et al., 2022; Rademaker & Royne, 2018; Sugandini et al., 2020; Vilkaite-Vaitone et al., 2022).

GEM on GBs through GOMi It is proven that GOM can mediate GEM and GBs. The results of previous research also corroborate that environmental production process activities or green operational management are a process that is preceded by input in the form of green entrepreneurial motivation which will ultimately result in a green business concept. So that inputs (green entrepreneurial motivation), processes (green management operations), and outputs (green business) can be formulated (Heizer, Jay ; Render, 2015; Nusraningrum et al., 2021).

GEM on GPr via the GMk variable. The green marketing variable is proven to be an intermediate variable. This green Entrepreneurship motivation and green product, where the values contained in green entrepreneurship motivation cannot be seen or heard by consumers if they are not marketed properly so that consumers can buy the green products they produce. For this reason, green marketing using the right media is needed so that small entrepreneurs can reach their consumers, consumers can enjoy the green products they produce. motivation with a strong operational strategy, in addition to relying on marketing (Gelderman et al., 2021; Sugandini et al., 2020).

GBs on GPr mediated by GOM variables. Green operation management is the heart of any company's activities, including small-scale businesses. Therefore, a small business oriented to an environmentally friendly business will automatically manage its operations using environmentally friendly standards to produce green products or environmentally friendly products. Green business is an identity while green management operations are an activity, and green products are the output. These three variables are interrelated to each other to be said to be a green business practice (Huang et al., 2022; Naruetharadhol et al., 2021; Purwandani & Michaud, 2021).

GEM on GPr is mediated by two variables, namely GOM and GBs. It is proven that green operation management and green business together can be a variable between green entrepreneurial motivation and green products because partially GOM and GBs have been proven to be mediating variables. These results reinforce that green entrepreneurial motivation must be realized in the management of green operations and green businesses to be able to deliver green products (Al Shammre et al., 2023; Nuryakin & Maryati, 2020; Sulastiningsih et al., 2023).

GEM on GPr, which is mediated by the GBs variable, proves that green businesses can mediate green entrepreneurship motivation with green products. Of course, this is because the motivation for green entrepreneurship must be made in a clear concept as a green business that can produce green products (Lindgren & Ek, 2023; Majali et al., 2022; Pudak & Bokan, 2020; Sulastiningsih et al., 2023; Wajdi et al., 2023). So that this green business will be the estuary of the products that will be produced, namely green products. Green business strategy plays a more supportive function, assisting the organization in long-term planning and ensuring that green product innovation aligns with the company's overall sustainability vision. However, to maximize the performance of green products, small firms must develop not only their entrepreneurial motivation and business strategy but also other more influential

channels such as green operational management, which may have a more immediate and substantial impact.

Conclusion

Green entrepreneurship motivation has a strong and considerable influence on intermediate factors such as green operation management, green marketing, and green business, all of which contribute significantly to the overall performance of green products. The association discovered a strong and continuous path of influence, with green entrepreneurial motivation as the primary variable influencing performance via numerous mediators. This research model is proven to be carried out in small businesses, where small businesses also contribute to green businesses that produce green products with the motivation of green entrepreneurship, green operations management, and green marketing. Several mediation routes reveal that these variables not only have a direct influence but also moderate each other's influences, demonstrating complexity and interconnectedness in the production of optimal green products. Green entrepreneurship motivation has been shown to enhance sustainability. Further research can be directed at identifying additional elements that may influence the motivational variables of green entrepreneurship, as well as how these aspects might be exploited to improve the performance of green products.

Contribution

Practical

Contribution

The practical implications of the research findings for small businesses that produce green products require green entrepreneurial motivation to be able to manage their business operations in a green manner, conduct green marketing, and also conduct their business practices in a green manner. All variables studied have a positive and significant influence, so it can be said that the increase in green products starts from the motivation of green entrepreneurship for small businesses. Small entrepreneurs can integrate these green practices in running their businesses to improve business processes to produce products that support environmental sustainability.

Theoretical Contribution

The results of this study also contribute to the existing theory, where the influence of green entrepreneurial motivation on green operations management, green marketing, and green business to produce green products is not dominated by large enterprises with large investments. These findings reinforce the theory that the practice of green can be done by anyone, anytime and anywhere. It was even found that green operations management, green marketing, and green business can mediate the variables of green entrepreneurship motivation with green products, meaning that green small business practices start from the motivation of small entrepreneurs to carry out their business activities in a green or environmentally friendly manner that supports the sustainability of the earth.

Limitations and Future Studies

The research has several limitations, including respondents who are small businesses that when filling out questionnaires are likely to provide socially desirable responses rather than the real depictions experienced by respondents when running their small businesses, thus affecting the reliability of the findings, and the responses given are biased as a result of which the survey results can affect the validity (Sugiyono, 2019).

Green businesses and products need to be nurtured by stakeholders so that small entrepreneurs care about sustainability. This research needs to be carried out on an ongoing basis throughout Indonesia to provide a complete picture of green businesses and products for future research.

Acknowledgment

The author would like to thank Kemendikbudristek for providing a grant with number 0459/E5/PG.02.00/2024 and LPPM of Universitas Mercu Buana with number 808/LL3/AL.04/2024.

References

- Al Shammre, A. S., Alshebami, A. S., Ali Seraj, A. H., Elshaer, I. A., & Al Marri, S. H. (2023). Unleashing environmental performance: The impact of green entrepreneurial motivation on small enterprises. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.1176804>
- Arabeche, Z., Soudani, A., Brahmi, M., Aldieri, L., Vinci, C. P., & Abdelli, M. E. A. (2022). Entrepreneurial Orientation, Organizational Culture and Business Performance in SMEs: Evidence from Emerging Economy. *Sustainability (Switzerland)*, 14(9). <https://doi.org/10.3390/su14095160>
- Bhatti, M. A., Alyahya, M., Alshiha, A. A., Aldossary, M., Juhari, A. S., & Saat, S. A. M. (2022). SME's Sustainability and Success Performance: The Role of Green Management Practices, Technology Innovation, Human Capital and Value Proposition. *International Journal of EBusiness and EGovernment Studies*, 14(2). <https://doi.org/10.34109/ijeveg.202214127>
- Chang, C. H. (2019). Do green motives influence green product innovation? The mediating role of green value co-creation. *Corporate Social Responsibility and Environmental Management*, 26(2). <https://doi.org/10.1002/csr.1685>
- Chawla, V. K., Chhabra, D., Gupta, P., Ankita, Naaz, S., & Karande, V. S. (2020). Evaluation of green operations management by fuzzy analytical hierarchy process. *Materials Today: Proceedings*, 38. <https://doi.org/10.1016/j.matpr.2020.07.200>
- Chen, X., Rahman, M. K., Rana, M. S., Gazi, M. A. I., Rahaman, M. A., & Nawi, N. C. (2022). Predicting Consumer Green Product Purchase Attitudes and Behavioral Intention During COVID-19 Pandemic. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.760051>
- Fernando, Y., Chiappetta Jabbour, C. J., & Wah, W. X. (2019). Pursuing green growth in technology firms through the connections between environmental innovation and sustainable business performance: Does service capability matter? *Resources, Conservation and Recycling*, 141. <https://doi.org/10.1016/j.resconrec.2018.09.031>
- Gelderman, C. J., Schijns, J., Lambrechts, W., & Vijgen, S. (2021). Green marketing as an environmental practice: The impact on green satisfaction and green loyalty in a business-to-business context. *Business Strategy and the Environment*, 30(4). <https://doi.org/10.1002/bse.2732>
- Gupta, P., Chawla, V. K., Jain, V., & Angra, S. (2022). Green operations management for sustainable development: An explicit analysis by using fuzzy best-worst method. *Decision Science Letters*, 11(3). <https://doi.org/10.5267/j.dsl.2022.1.003>
- Hair, J. F. Jr., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R (Vol. 3rd)*. <http://www>.
- Hamidi, M. P., Muhammad Anas Fadli, & Yonathan Wirayajaya Wilion. (2022). Tinjauan Green Economy dalam Hukum Persaingan Usaha di Indonesia. *Jurnal Persaingan Usaha*, 2(1). <https://doi.org/10.55869/kppu.v3i-48>
- Heizer, Jay B. (2015). *Operations Management (Manajemen Operasi)* (11th ed.). Salemba 4.
- Hengboriboon, L., Naruetharadol, P., Ketkeaw, C., & Gebombut, N. (2022). The impact of product image, CSR and green marketing in organic food purchase intention: Mediation roles of corporate reputation. *Cogent Business and Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2140744>
- Huang, W., Chau, K. Y., Kit, I. Y., Nureen, N., Irfan, M., & Dilanchiev, A. (2022). Relating Sustainable Business Development Practices and Information Management in Promoting Digital Green Innovation: Evidence From China. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.930138>
- Kamalanon, P., Chen, J. S., & Le, T. T. Y. (2022). "Why do We Buy Green Products?" An Extended Theory of the Planned Behavior Model for Green Product Purchase Behavior. *Sustainability (Switzerland)*, 14(2). <https://doi.org/10.3390/su14020689>
- Lindgren, P., & Ek, E. (2023). Green Business Model Innovation in Symbiosis Business Value Networks: Bridging Green Business Model Innovation to Different Green Symbiosis Business Value Networks with Future Wireless Technologies. *Journal of Mobile Multimedia*, 19(1). <https://doi.org/10.13052/jmm1550-4646.1918>
- Majali, T., Alkaraki, M., Asad, M., Aladwan, N., & Aldeinat, M. (2022). Green Transformational Leadership, Green Entrepreneurial Orientation and Performance of SMEs: The Mediating Role of Green Product Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(4). <https://doi.org/10.3390/joitmc8040191>
- Masocha, R. (2018). Does environmental sustainability impact innovation, ecological and social measures of firm performance of SMEs? Evidence from South Africa. *Sustainability (Switzerland)*, 10(11). <https://doi.org/10.3390/su10113855>
- Miroshnychenko, I., Barontini, R., & Testa, F. (2017). Green practices and financial performance: A global outlook. *Journal of Cleaner Production*, 147. <https://doi.org/10.1016/j.jclepro.2017.01.058>
- Moslehpour, M., Chau, K. Y., Du, L., Qiu, R., Lin, C. Y., & Batbayar, B. (2023). Predictors of green purchase intention toward eco-innovation and green products: Evidence from Taiwan. *Economic Research-Ekonomika Istrazivanja*, 36(2). <https://doi.org/10.1080/1331677X.2022.2121934>
- Naruetharadol, P., Srisathan, W. A., Gebombut, N., & Ketkeaw, C. (2021). Towards the open eco-innovation mode: A model of open innovation and green management practices. *Cogent Business and Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1945425>

- Nuryakin, & Maryati, T. (2020). Green product competitiveness and green product success. Why and how does mediating affect green innovation performance? *Entrepreneurship and Sustainability Issues*, 7(4), 3061–3077. [https://doi.org/10.9770/jesi.2020.7.4\(33\)](https://doi.org/10.9770/jesi.2020.7.4(33))
- Nusraningrum, D. (2022). The Sustainability of Competitive Strategy in the Tourism Services Industry. *European Journal of Business and Management Research*, 7(4), 60–65. <https://doi.org/10.24018/ejbmr.2022.7.4.1475>
- Nusraningrum, D., Mekar, T. M., Endri, E., & Ahmad, F. S. (2023). Does implementing green operation management affect the Sustainability of port operations in Labuan Bajo? *Uncertain Supply Chain Management*, 11(4), 1417–1426. <https://doi.org/10.5267/j.uscm.2023.8.005>
- Nusraningrum, D., Mekar, T. M., & Meilina, P. (2022). The Analysis of Green Management and Green Business on Green Marketing of Maritime Tourism. In *SENTIMAS: Seminar Nasional Penelitian dan Pengabdian Masyarakat*. <https://journal.irpi.or.id/index.php/sentimas>
- Nusraningrum, D., Santoso, S., Gunawijaya, J., & Gading, D. K. (2021). Green Operations Management with Green Business and Green Marketing Perspective. *Psychology and Education*, 58(2), 4526–4535. www.psychologyandeducation.net
- Nusraningrum, D., Sugiyono, S., & Koe, W.-L. (2023). Green Product In Micro Small Medium Enterprises (MSME). *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, 7(4), 1161–1167. <https://doi.org/10.31849/dinamisia.v7i4.11148>
- Puđak, J., & Bokan, N. (2020). Who wants what and why? ‘Farmers’ and ‘engineers’ as green entrepreneurs. *Traditiones*, 49(1). <https://doi.org/10.3986/Traditio2020490103>
- Purwandani, J. A., & Michaud, G. (2021). What are the drivers and barriers for green business practice adoption for SMEs? *Environment Systems and Decisions*, 41(4), 577–593. <https://doi.org/10.1007/s10669-021-09821-3>
- Rademaker, C. A., & Royne, M. B. (2018). Thinking green: How marketing managers select media for consumer acceptance. *Journal of Business Strategy*, 39(2), 30–38. <https://doi.org/10.1108/JBS-05-2017-0070>
- Saleem, F., Khattak, A., Ur Rehman, S., & Ashiq, M. (2021). Bibliometric analysis of green marketing research from 1977 to 2020. *Publications*, 9(1). <https://doi.org/10.3390/publications9010001>
- Sugandini, D., Muafi, M., Susilowati, C., Siswanti, Y., & Syafri, W. (2020). Green supply chain management and green marketing strategy on green purchase intention: SMEs cases. *Journal of Industrial Engineering and Management*, 13(1). <https://doi.org/10.3926/jiem.2795>
- Sugiyono. (2019). *Metodologi Penelitian Kuantitatif dan Kualitatif Dan R&D*. Alfabeta.
- Sulastiningsih, Wikaningtyas, S. U., & Novitasari, D. (2023). Green Entrepreneurship Motivation Model. *Academic Journal of Interdisciplinary Studies*, 12(2). <https://doi.org/10.36941/ajis-2023-0047>
- Tezer, A., & Bodur, H. O. (2021). The green consumption effect: How using green products improves consumption experience. *Journal of Consumer Research*, 47(1). <https://doi.org/10.1093/JCR/UCZ045>
- UNEP. (2010). *Green economy: developing countries success stories*. United Nations Environment Program.
- Vilkaite-Vaitone, N., Skackauskiene, I., & Díaz-Meneses, G. (2022). Measuring Green Marketing: Scale Development and Validation. *Energies*, 15(3). <https://doi.org/10.3390/en15030718>
- Wajdi, M. F., Putra, F. I. F. S., Haziroh, A. L., & Purusa, N. A. (2023). The Integrated Green HRM Model to Improve Business Performance. *International Journal of Professional Business Review*, 8(4). <https://doi.org/10.26668/businessreview/2023.v8i4.771>