



Unlocking The Potential of Plastic Manufacturing Firms to Internationalize Their Operations Through Organizational Learning: The Effect of Sustainable Marketing Strategy as a Mediator.

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Abstract: The main purpose of this research is to examine the mediating role of a sustainable marketing strategy in the link between organisational learning and the internationalisation of firms in developing nations within sub-Saharan Africa. This research adopts a cross-sectional and explanatory approach. Data were gathered from 137 plastic manufacturing firms in Uganda. The Statistical Package for the Social Sciences (SPSS) and Medgraph were used to conduct descriptive, correlational, regression, and mediation analyses to determine the mediating influence of a sustainable marketing strategy. Findings indicate that organisational learning and sustainable marketing strategy are positively and significantly linked to the internationalisation of manufacturing firms. Moreover, the results reveal that sustainable marketing strategy plays a partial mediating role in the connection between organizational learning and firm internationalization in Uganda. Existing literature has not extensively explored the role of sustainable marketing strategies in internationalization. This is especially relevant as businesses face increasing pressure to align with sustainable development goals to enhance competitiveness both locally and globally." A sustainable marketing strategy provides firms with the opportunity to gain market acceptance and ultimately achieve competitiveness in international markets, where products, pricing, promotion, and distribution are expected to support environmental sustainability, uphold societal values, and foster economic growth and development.

Keywords: *Organizational Learning, Sustainable Marketing Strategy, Internationalization, Manufacturing Firms, Uganda*

1. Introduction

According to the Uganda National Planning Authority (2020), manufacturing firms in Uganda face substantial challenges in exporting their products and remaining competitive in international markets. Supporting this, Sendawula et al. (2020) noted that out of the 500 top global businesses operating in Africa in 2017, only three were from Uganda, none of which belonged to the manufacturing sector. This issue is further highlighted by the fact that plastic manufacturing firms exported only 1.2% of their products in 2018/19, 1% in 2019/20, and just 7.5% in 2020/21 (Uganda Bureau of Statistics, 2021). These statistics indicate that manufacturers in sub-Saharan Africa have limited capacity to sustain international operations. Yet, it is "widely acknowledged that expanding into international markets allows businesses to increase revenue, enhance value creation, stimulate growth, and gain access to knowledge and technologies that may not be readily available domestically" (Chandra et al., 2020). Furthermore, "companies entering foreign markets can take advantage of opportunities that foster their expansion and development" (Arasa & Mwaniki, 2015). On a larger scale, "the manufacturing sector plays a crucial role in the global economy, contributing around 52% of total production and accounting for more than 40% of GDP in many developing nations" (Ndiaye et al., 2018).

Given the importance of internationalization, "scholars have devised strategies to assist firms in sub-Saharan Africa in integrating into global markets" (Chandra et al., 2020). In response, "the Ugandan government has entered into various trade agreements to support local businesses in reaching international markets" (Nakaweesi, 2016). Notably, "Uganda is a member of regional economic organizations such as the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) and benefits from preferential trade arrangements like the African Growth and Opportunity Act (AGOA)" (Nakaweesi, 2016). Additionally, Ugandan government has introduced measures such as tax incentives, foreign exchange liberalization, exemptions on duties and VAT, market access support, duty drawbacks, and manufacturing under bond. These initiatives are designed to create a more competitive environment for Ugandan exports and enhance the contribution of manufacturing firms to the country's export value (Uganda Export Promotion Board, 2021).

From a research standpoint, "scholars have proposed various approaches to enhance internationalization," including "strategic market planning and marketing strategy implementation capabilities" (Kowalik et al., 2020; Theoharakis et al., 2019). Additionally, "business networking has been highlighted as a key factor" (Sendawula et al., 2020). Other critical elements include "firm resources and entrepreneurial orientation" (Ngoma et al., 2017), as well as "network competence and relationship intensity" (Ngoma & Ntale, 2014). Research also emphasizes "the role of institutional changes and networks" (Stoian et al., 2016), along with "entrepreneurship and network relationships" (Amal et al., 2010). Moreover, "internal capabilities, resources, and management practices" are recognized as essential for successful internationalization (Buckley & Casson, 2018; Dikova et al., 2017). Despite the expanding knowledge in the area of internationalization, there has been little emphasis on the importance of sustainable marketing strategies within this context. This is because, sustainability wasn't given much attention as a driver of business success till recent (Gazzola, et al., 2020). Studies such as those by Demessie and Shukla (2024) have examined sustainable marketing strategy but have mainly focused on its drivers and outcomes without exploring its link to internationalization. However, in today's era of sustainable development, successful firms must integrate sustainability into their product offerings, pricing, promotion, and distribution strategies as part of their internationalization efforts. Furthermore, the existing literature

appears to overlook the indirect impact of sustainable marketing strategies on internationalization.

In light of these considerations, this study explores how sustainable marketing strategies mediate organizational learning and internationalization relationship. By doing so, it aims to provide valuable insights into the mechanisms that enable firms to expand beyond domestic markets. The study focuses on sub-Saharan Africa, with a particular emphasis on Uganda, where the participation of manufacturing firms in international trade remains limited. Given the scarcity of empirical research on effective internationalization strategies in this region, the findings will contribute to both academic knowledge and practical applications, offering a pathway for firms to compete globally.

2. Literature review

2.1 Internationalization

An analysis of prior research reveals that experts have employed various terms such as international trade, international investment, international portfolio, exporting, and foreign direct investment (FDI) to describe internationalization (Kim & Cavusgil, 2020; Ahimbisibwe et al., 2021; Ahimbisibwe et al., 2023). Consequently, international business scholars hold diverse perspectives on the concept of internationalization. Kirca (2015) defines it as the process or extent to which firms expand their participation in cross-border operations. Similarly, Welch and Luostarinen (1988), indicates that internationalization refers to the gradual expansion of participation in global business operations. Kim and Cavusgil (2020) further conceptualize it as the systematic deepening of a company's international business engagements. Considering these viewpoints, this research characterizes internationalization as a scalability strategy that manufacturing firms adopt to expand beyond their national borders to achieve sustainable competitive advantage. In line with this, Tuppura et al. (2008) assert that businesses consider international expansion a vital strategic option for enhancing their performance and competitiveness both locally and globally.

In this study, "internationalization" is evaluated through three primary dimensions: "internationalization speed," "foreign market share," and the "degree of geographic diversification." These indicators have been utilized to gauge the extent of firm internationalization (Ahimbisibwe et al., 2023; Hsieh et al., 2019; Ngoma & Ntale, 2014). "Internationalization speed" refers to the duration between a firm's establishment and its initial entry into international markets (Hsieh et al., 2019). "Foreign market share" signifies the proportion of a firm's business activities conducted outside its domestic market (Sullivan, 1994). Lastly, the "degree of geographic diversification" represents the firm's international presence or the breadth of its market reach across different regions (Bakunda, 2003).

2.2 Green Price, Green Place, and Green Promotion

In the context of this study, green price refers to a pricing strategy that incorporates environmental costs, emphasizing sustainability while maintaining competitive pricing (Sana, 2020). It accounts for the cost of eco-friendly raw materials, sustainable production processes, and recycling initiatives in plastic manufacturing firms. In internationalization, green pricing can enhance brand reputation and appeal to environmentally conscious consumers. Firms that adopt sustainable pricing strategies may achieve market differentiation and regulatory compliance in global markets (Duanmu, Bu, & Pittman, 2018). Therefore, green pricing plays a crucial role in balancing profitability with environmental responsibility.

On the other hand, green place refers to sustainable distribution and logistics strategies that minimize environmental impact while ensuring efficient product delivery (Kanyepe, Alfane, & Zizhou, 2023). This includes eco-friendly transportation, reduced carbon emissions, and sustainable warehousing practices in plastic manufacturing firms. International expansion benefits from green place strategies by enhancing supply chain resilience and ensuring compliance with global sustainability standards. Adopting green distribution channels aligns with corporate social responsibility (CSR) initiatives and regulatory expectations (Deshmukh & Tare, 2024). Thus, green place strategies facilitate sustainable international market entry and long-term competitiveness.

Furthermore, green promotion involves marketing communication strategies that highlight a firm's environmental commitment and sustainable practices (Chung, 2020). These strategies include eco-labeling, sustainability reports, and promotional campaigns emphasizing the environmental benefits of plastic products. In the context of internationalization, green promotion strengthens brand equity, attracts environmentally conscious customers, and differentiates firms in competitive global markets (Brunner & Norouzi, 2021). Effective green marketing communication fosters trust and ensures compliance with international environmental regulations (Brunner & Norouzi, 2021). Therefore, green promotion, green pricing, and green place collectively enhance a firm's ability to enter and sustain a presence in eco-sensitive international markets.

2.3 Organizational learning and Internationalization

According to Pérez López *et al.* (2005), Organisational learning is an ongoing and active process that involves the generation, acquisition, and incorporation of knowledge with the goal of enhancing the resources and capabilities of an organisation, ultimately leading to improved organisational performance. Sainam & Bahadir (2024) add that it is the process of learning that takes place within an organization. However, Lundberg (1995) look at organizational learning in terms of the mechanisms initiated and implemented by the organizations to enhance the skills and knowledge to realize defined goals and objectives. This study describes "organizational learning" as the mechanism by which manufacturing firms gain the "knowledge, skills, and experience" essential for executing activities that support their expansion into international markets. The assessment of "organizational learning" is based on "knowledge generation, acquisition, and interpretation" (López et al., 2005; Templeton et al., 2002).

A review of existing literature highlights a connection between organizational learning and firm internationalization. For example, Sainam & Bahadir (2024) found a significant positive relationship between organizational learning and the internationalization of firms, based on evidence from Uganda's manufacturing sector. The authors urged that when workers of an entity understand how to handle customers in international markets while following the prescribed procedure, local manufacturing firms will be able to join and become successful in their international business arrangements. In the same view, Javernick-Will (2009) indicates that firms acquire knowledge through pioneering, engaging local consultants, external relationships and talking to clients. Consequently, firms gain insight into the specific requirements of various markets, the types of marketing and branding strategies, and the cultural values and norms of customers across diverse contexts. This is not only relevant for entering new international markets but also vital for sustaining business operations. Furthermore, Surdu & Narula (2021) reported that the ability of firms to unlearn past experience linked to their initial entry into international markets is associated with a higher chance of going back to international markets and further expansion. This suggests that firms that learn from their past internationalisation initiatives can bounce back and eventually become more successful as compared to those that fail to learn from their mistakes. Despite the

ongoing discussion, it is evident that the literature linking organisational learning to internationalisation is scarce, leading to calls for further studies (Surdu & Narula, 2021). As a result, we hypothesize that:

H1: *Organizational learning is significantly related with internationalization.*

2.4 Sustainable marketing strategy and internationalisation

A sustainable marketing strategy can be described as a business's approach to "designing, pricing, promoting, and distributing products" in a way that facilitates lasting exchanges to satisfy consumer demands while reducing environmental impact (Demessie & Shukla, 2024; Dangelico & Vocalelli, 2017; Davari & Strutton, 2014). From this perspective, the primary objective of a sustainable marketing strategy is to enhance a firm's financial performance while simultaneously contributing to environmental protection and social well-being. This is particularly relevant given the increasing global consumer awareness of the need for environmentally friendly products that do not negatively impact the natural ecosystem. "In this research, the concept of sustainable marketing strategy is evaluated through four essential dimensions: 'green products, green pricing, green promotion, and green distribution,' as highlighted by Harini et al. (2020)." When manufacturing firms adopt and implement these sustainable marketing practices, they produce environmentally friendly goods that are promoted and distributed through digital platforms, reducing reliance on materials that could otherwise harm the environment.

Given the growing importance of sustainability, marketing researchers have explored various aspects of sustainable marketing. For instance, Demessie and Shukla (2024) examined the upshots of sustainable marketing strategy in sub-Saharan Africa. Minton et al. (2012) analyzed sustainable marketing with a particular focus on social media, while Sheth and Parvatiyar (2021) differentiated between market-driving and market-driven approaches to sustainable marketing. "Furthermore, Qalati, Barbosa, and Deshwal (2024) explored 'consumer behavior' and the evolution of 'sustainable marketing practices.'"

Although research on sustainable marketing strategies continues to grow, there remains a gap in the literature concerning its impact on enabling firm internationalization. However, in today's sustainability-driven business environment, consumers increasingly expect companies to provide eco-friendly products that pose minimal health and environmental risks. This gap underscores the need for the present study, leading to the formulation of the following hypothesis: **H2:** *Sustainable marketing strategy is significantly associated with internationalization.*

2.5 Sustainable Marketing Strategy as a Mediator

This research examines the 'mediating role of sustainable marketing strategy' in the connection between "organizational learning and firm internationalization." A review of previous studies reveals that "limited research" has focused on the relationship between "organizational learning and internationalization" (Surdu & Narula, 2021). However, the contribution of sustainable marketing strategies remain largely unexplored. It is essential to recognize that when manufacturing companies develop and offer 'environmentally friendly products' that are 'priced, promoted, and distributed' using 'green practices,' they are more likely to gain acceptance and be consumed across various international markets. In the same vein, sustainable marketing indirectly explains the association between organisational learning and the internationalisation of firms. This is due to the fact that when manufacturing firms acquire, disseminate and interpret information about the international market, they can develop green products that are highly demanded in the international market, thus internationalising their

operations. The above arguments resonate well with conditions for testing for mediation (Baron and Kenny, 1986). Thus, we hypothesise that:

H3: "Sustainable marketing strategy" significantly mediates "organizational learning" and "internationalization" relationship.

3. Methodology

3.1 Study Design, target population and sampling

This research employed a 'cross-sectional and explanatory design' to collect and analyze data. Quantitative data related to the key study variables was gathered at a single point in time (Kesmodel, 2018). This approach was used given the time and resource constraints; However, a cross-sectional approach captures data at a single point in time, limiting the ability to track changes, infer causality, and understand dynamic internationalization processes. This approach may overlook long-term trends, strategic shifts, and external influences affecting firms' global expansion. Future studies should adopt a longitudinal approach to analyze internationalization over time, capturing evolving strategies, market adaptation, and causal relationships more effectively. The study focused on a population of "210 plastic manufacturing companies" located in "Uganda's central region" (Uganda Plastics Manufacturers and Recyclers Association, 2022). This region was selected due to its high concentration of plastic manufacturers with strong potential for growth and international expansion, which is crucial for strengthening Uganda's economy. To determine the appropriate sample size, the "Raosoft sample size calculator (<http://www.raosoft.com/samplesize.html>)" was utilized, leading to the selection of "137 firms" from the total 210 manufacturers. Out of the "137 questionnaires" distributed, "130 were correctly completed," yielding a "95% response rate," which was sufficient to support the study's research hypotheses.

3.2 Sample selection

The study employed a simple random sampling technique to select plastic manufacturing firms, ensuring that each manufacturer had an equal opportunity to participate (Noor, Tajik, & Golzar, 2022). In particular, we applied the lottery method to pick the firms that finally participated in the study. We assigned each firm a number, which we then wrote on small pieces of paper, folded them, and placed them in a tin. The pieces were randomly selected one by one from a box until a total of 137 plastic firms were obtained. The respondents, on the other hand, were business owners or managers who were purposefully selected (Rai & Thapa, 2015). This is because they possess a more comprehensive understanding of their businesses' learning processes, sustainable marketing strategies, and internationalization efforts.

3.3 Measurement and Operationalization

To generate results, data was gathered using a self-administered questionnaire targeting business owners or managers. The questionnaire comprised seven sections covering respondent characteristics, firm characteristics, organizational learning, sustainable marketing strategy, and internationalization. To reduce common method bias associated with using uniform scales throughout the instrument, a combination of 6-point and 5-point Likert scales was employed (Podsakoff et al., 2003).

Internationalization was evaluated through three key aspects: the speed of international expansion, the extent of geographic diversification, and the proportion of foreign market share. As stated by Ahimbisibwe et al. (2021) and Hsieh et al. (2019), these dimensions provide a comprehensive measure of internationalization. Additionally, organizational learning was examined based on four factors: "knowledge acquisition, distribution, interpretation, and organizational memory" (Pérez López et al., 2005). Furthermore, the sustainable marketing strategy was assessed using four elements: "green product, green price, green promotion, and green place" (Demessie & Shukla, 2024; Harini et al., 2020).

3.4 Data processing and analysis

The process of data handling and analysis was conducted using the Statistical Package for the Social Sciences (SPSS) along with Medgraph (Excel Version). Specifically, "SPSS was employed to produce descriptive statistics," offering valuable insights into the characteristics of both the respondents and the firms. In addition, "correlation and regression analyses were carried out" to explore the study results. To assess the mediating effect of the sustainable marketing strategy, "Medgraph (Excel Version) was utilized" to establish whether it serves as a full or partial mediator in this research.

3.5 Ethical considerations

This study ensured respondent confidentiality by informing participants beforehand that their information would be used exclusively for academic purposes and that any personal data would be handled with the highest level of confidentiality. This commitment was strictly upheld. Prior to data collection, an introduction letter was obtained, and all respondents were contacted to seek their consent before participating in the study.

4. Results

4.1 Respondents' characteristics

Study findings revealed that most respondents were male (57%), while females accounted for 43%. This suggests that both genders engage in the internationalisation activities of plastic manufacturing firms in Uganda, though managerial roles are predominantly occupied by men. Additionally, a significant portion of respondents fall within 31–35 age range (58%), followed by those aged 25–30 years (52%). The smallest groups are individuals below 25 years and those between 36–40 years (10%). This highlights that most participants in the internationalisation of manufacturing firms in Uganda are within the prime working-age group, possessing the potential to develop innovative, sustainable marketing strategies and learning activities that facilitate business expansion into international markets.

Moreover, the results show that most respondents had attained a degree (75%), (13%) master's degree, while the smallest proportion held diplomas (12%). This suggests that business owners and managers overseeing plastic manufacturing firms are well-educated, making their responses to the study questions reliable for formulating practical recommendations to accelerate firm internationalisation in Uganda. Regarding work experience, the majority had between 5–10 years of experience (65%), while only 5% had more than 15 years of experience. These findings indicate that most respondents had spent a considerable amount of time working in plastic manufacturing firms, positioning them well to provide insights into strategic market planning, marketing strategy execution, and the internationalisation of plastic manufacturing firms in Uganda.

Table 1: Participants Demographics

No	Item	Description	Frequency	Percentage
1	Gender	Male	74	57
		Female	56	43
		Total	130	
2	Age bracket	Less than 25 years	10	8
		25 - 30 years	52	40
		31 - 35 years	58	45
		36 - 40 years	10	8
		Total	130	
3	Level of education	Diploma	15	12
		Bachelor	97	75
		Master	18	13
		Total	130	
4	Business experience	Less than 5 years	25	19
		5 - 10 years	84	65
		11 -15 years	15	12
		Above 15 years	6	5
		n=130	Total	130

Source: Primary Data

4.3 Firms characteristics

Our results in Table 2 indicate that most plastic manufacturing firms are owned by indigenous entrepreneurs (85%) as compared to their foreign counterparts (15%). This suggests that local entrepreneurs may have plans to internationalize their businesses as a way of scaling them up to become more competitive both locally and internationally. For the size of the investigated firms, most of them employ 50 or more workers (52%), and the least employ less than 5 workers (8%). This shows that most plastic manufacturing firms in Uganda are medium enterprises as per the business categorization in Uganda (Ministry of Trade Industries and Cooperatives, 2015). Finally, most firms have been in operation for a period of 11–20 years (40), indicating that most plastic-making firms have survived the startup stages and are currently consolidating their operations with plans of internationalising their operations as a growth strategy.

Table 2: Firm characteristics

No	Item	Description	Frequency	Percentage
1	Firm ownership	Local	111	85
		Foreign	19	15
		Total	130	
2	Firm size	less than 5	10	8
		5-49	52	40
		50 and above	68	52
		Total	130	
3	Firm age	1-10	27	21
		11-20	52	40
		21-30	25	19
		31-40	15	12
		41 and above	11	8
	n=130	Total	130	

Source: Primary Data

4.4 Correlations

To explore the associations between the independent variables (organizational learning and sustainable marketing strategy) and the dependent variable (internationalization), a Pearson correlation coefficient analysis was performed. "A bivariate correlation analysis" was performed to generate "Pearson correlation coefficients" to assess both the strength and direction of relationships among the study variables, following the guidelines provided by Field (2009). The findings presented in Table 3 demonstrate a "significant positive correlation" between organizational learning and the internalization of plastic manufacturing firms ($r = .627^{**}$, $p = .01$). This indicates that as organizational learning improves, the internalization process of firms also strengthens. Moreover, the key elements of organizational learning, such as "knowledge acquisition, distribution, and interpretation," show a positive and significant association with internalization, thereby providing initial support for H1.

Likewise, the results highlight a "significant positive correlation" between sustainable marketing strategy and the internalization of plastic manufacturing firms ($r = .370^{**}$, $p < .01$). This suggests that advancements in sustainable marketing strategies lead to improvements in internalization. Furthermore, all aspects of sustainable marketing strategy "green product, green pricing, green promotion, and green place" are positively and significantly associated with internalization, offering preliminary support for H2.

Table 3: Correlational analysis

Study variables	1	2	3	4	5	6	7	8	9	10	11	12	13
Organizational Learning (1)	1												
Knowledge Acquisition (2)	.702**	1											
Knowledge Distribution (3)	.871**	.430**	1										
Knowledge Interpretation (4)	.760**	.369**	.466**	1									
Green Product (5)	.133	-.006	.229*	.021	1								
Green Price (6)	.055	.316**	-.045	-.058	.098	1							
Green Promotion (7)	.162	.100	.213*	.031	.175	.072	1						
Green Place (8)	.210*	.235*	.163	.115	.077	.408**	.113	1					
Sustainable Marketing Strategy (9)	.666**	.161	.226*	.023	.878**	.510**	.308**	.405**	1				
Internationalization Speed (10)	.342**	.249*	.348**	.180	.161	.085	.032	.136	.189	1			
Geographical Diversification (11)	.556**	.228*	.562**	.447**	.307**	-.049	.097	.192	.279**	.094	1		
Foreign Market Share (12)	.497**	.249*	.594**	.228*	.321**	.124	.105	.214*	.355**	.133	.737**	1	
Firm Internationalization (13)	.627**	.318**	.677**	.390**	.357**	.065**	.107**	.243*	.370**	.477**	.863**	.871**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data

4.5 Regression Results

In this study, 'hierarchical regression analysis' was conducted to examine the 'predictive capability' of the independent variables on the dependent variable. The regression model was used to determine "the extent to which organizational learning and sustainable marketing strategy" affect "the internationalization of plastic manufacturing firms," as presented in Table 4.

Table 4: Hierarchal regression results

Item	Model I	Model II	Model III	Tolerance	VIF
Constant	4.506	2.035	1.021	NA	NA
Control Variables					
Firm ownership	-.128	-.147	-.125	.917	1.090
Firm age	-.032	.054	.021	.721	1.387
Firm size	-.015	-.112	-.091	.678	1.476
Independent Variables					
Organizational learning		.639**	.588**	.942	1.062
Sustainable marketing Strategy			.252**	.947	1.056
Model summary					
R	.129	.645	.691		
R Square	.017	.417	.477		
Adjusted R Square	-.014	.392	.449		
R Square change	.017	.400	.060		
Model F	.535	16.785	16.958		
Durbin Watson			2.120		

Internationalization of firms

Source: Primary Data

"A multicollinearity analysis" was performed to confirm that collinearity would not affect "the multiple regression analysis" used to evaluate the study hypotheses. As presented in Table 4, the "Variance Inflation Factor (VIF) and tolerance values" for "organizational learning" are "1.090 and .942," respectively, while those for "sustainable marketing strategy" are "1.056 and .947." Furthermore, the "average VIF" for all predictor variables is "1.059," which is close to 1. These results demonstrate "the absence of collinearity concerns," ensuring that "the study variables are not highly correlated."

In Model I, the control variables were "regressed against the internationalization" of firms. The findings in Table 4 indicate that "firm ownership, firm age, and firm size" ($\beta = -.128$, $P \leq 0.05$), ($\beta = -.032$, $P \leq 0.05$), and ($\beta = -.015$, $P \leq 0.05$), respectively, have an "insignificant impact" on explaining the internationalization of plastic manufacturing firms in Uganda. This model explains "1.7% of the variance" in the internationalization of plastic manufacturing firms.

Model II incorporated "organizational learning" into the analysis. The results in Table 4 demonstrate that organizational learning accounts for "40% of firm internationalization," indicating that any variations in organizational learning have a direct impact on the internationalization process. As a result, organizational learning is identified as a "significant

predictor" of internationalization ($\beta = 0.639$, $P \leq 0.01$), thereby confirming H1, which proposes a positive association between organizational learning and firm internationalization.

This implies that firms with "knowledge of international markets" can efficiently process product orders, facilitate overseas shipments, handle product returns when required, maintain delivery commitments to foreign customers, and expedite the introduction of new export initiatives. These discoveries are in agreement with "Sainam & Bahadir (2024)," who advanced a "positive and significant relationship" between organizational learning and firm internationalization. Additionally, "Surdu and Narula (2021)" emphasize that firms utilizing their previous international market experiences achieve greater success in entering diverse global markets.

In Model III, "sustainable marketing strategy" was incorporated into the analysis. The findings in Table 4 reveal that sustainable marketing strategy accounts for "6% of the variance" in firm internationalization. Specifically, for each unit increase in sustainable marketing strategy, internationalization improves by ".252 units." These results confirm that sustainable marketing strategy serves as a "significant driver" of the internationalization of plastic manufacturing firms in Uganda ($\beta = 0.252$, $P \leq 0.01$), Thus reinforcing H2, which posits a significant link between sustainable marketing strategy and firm internationalization.

This implies that firms providing "environmentally friendly products" have a greater tendency to receive client endorsements, resulting in more customer referrals with sustainable consumption behaviors. As a consequence, the firm's market presence expands, as reflected in "increased customer orders," a surge in partnership inquiries, and entry into multiple foreign markets. While prior research has largely neglected the influence of sustainable marketing strategies on firm internationalization, this study offers "novel empirical evidence" on this connection, drawing insights from Uganda's plastic manufacturing sector, an industry with minimal prior empirical investigation.

4.6 Mediation test

Baron and Kenny (1986), describe mediation as a "conceptual framework" that explains the mechanisms and reasoning behind "cause-and-effect relationships." Consequently, analyzing the mediation effect aids in identifying the intervening process through which the independent variable "influences the dependent variable" (Wu and Zumbo, 2008). Within this framework, the independent variable is assumed to "affect the mediator," which in turn affects the outcome variable.

In this study, a "mediation analysis" was conducted to investigate the mediating role of "sustainable marketing strategy" in the relationship between "organizational learning and firm internationalization." This analysis utilized a "path model developed by Dr. Jose (2013)" to demonstrate how sustainable marketing strategy serves as a mediator among the study variables, as depicted in "Table 5 and Figure 1."

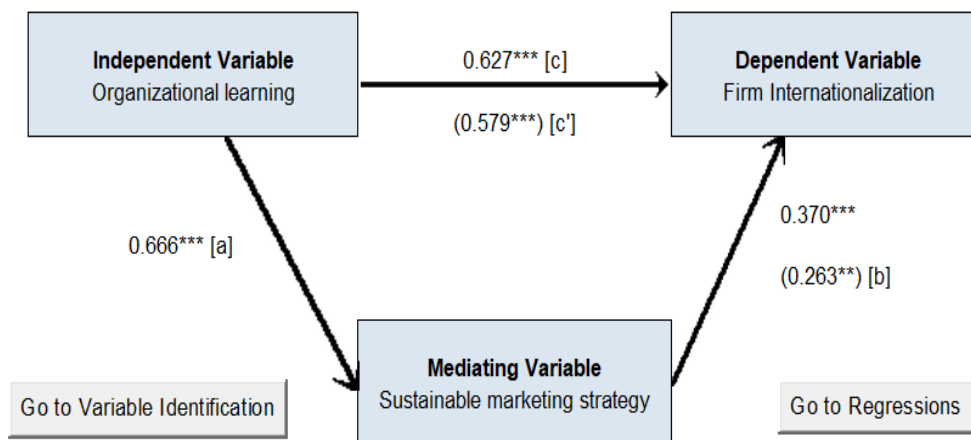
Table 5: The mediation effect of sustainable marketing strategy

Type of mediation	Significant	
Sobel z-value	2.026706	$p = 0.042692$
95% Symmetrical Confidence interval		
	Lower	0.00756
	Higher	0.45179
Unstandardized indirect effect		
	a*b	0.22967
	se	0.11332
Effective Size measures		
Standardised Coefficients	R² Measures (Variance)	
Total:	0.627	0.568
Direct:	0.579	0.322
Indirect:	0.175	0.246
Indirect to Total ratio	0.279	0.432

Source: Primary Data

According to the Sobel z-value presented in Table 5, it is evident that the mediation is significant ($p < .01$). Specifically, the Sobel z-value of 2.026706 and the presence of both direct and indirect effect values that are 0.579 and 0.175, respectively, indicate that sustainable marketing strategy mediates the relationship between organisational learning and firm internationalisation.

Figure 1: Mediation effect of sustainable marketing strategy.



Note: The numerical values in parentheses are beta weights taken from the second regression and the other values are zero order correlations.

Source: Primary Data

As depicted in "Figure 1," incorporating "sustainable marketing strategy" into the relationship between "organizational learning and firm internationalization" resulted in a decrease in the standardized beta (β) coefficient from "0.627 to 0.579." This indicates that sustainable marketing strategy functions as a "mediator" in this relationship. Although the reduction did not reach zero, it confirms the presence of a "partial mediation effect."

A "ratio index," calculated by dividing the indirect effect by the overall effect "(0.175/0.627 * 100)," yielded "28%" (Table 5). This proposes that "28% of the impact" of organizational learning on firm internationalization is channelled through sustainable marketing strategy, while the remaining "72%" represents a "direct effect." Therefore, these findings provide support for "H3," which asserts that sustainable marketing strategy "significantly mediates" these relationships.

These verdicts validate that both "organizational learning" and "sustainable marketing strategies" independently contribute to "firm internationalization." However, it is clear that "organizational learning" can be enhanced through "sustainable marketing strategy" to boost the international expansion potential of manufacturing firms. This indicates that the "predictive power of organizational learning" is greater when mediated by "sustainable marketing strategy" than when considered in isolation.

Therefore, this study makes a "novel contribution" to the existing body of research on internationalization by "empirically demonstrating the mediating role" of sustainable marketing strategy, an area largely overlooked in previous studies. These findings are consistent with the "mediation framework" proposed by "Baron and Kenny (1986)," as all the conditions for testing mediation among the "independent and dependent variables," the "mediating and dependent variables," and the "independent and mediating variables" were satisfied in this study.

5. Discussion

The results from Model I indicate that the control variables firm ownership, firm age, and firm size were not significant predictors of internationalization among plastic manufacturing firms in Uganda. Despite being included in the regression analysis, their respective beta coefficients suggest an insignificant impact on firms' international expansion. The low R^2 value further implies that these variables contribute minimally to explaining the variance in internationalization. This suggests that other factors beyond ownership structure, age, and size play a more influential role in shaping firms' internationalization strategies. The insignificance of these control variables provides more confidence in the results of this study predicting the potential of plastic manufacturing firm's internationalisation as a function of organizational learning and the mediation effect of sustainable marketing strategy

The discoveries of this study indicate a "significant positive relationship" between "organizational learning" and "internationalization," consistent with previous research (Sainam & Bahadir, 2024). "Organizational learning," which encompasses "knowledge generation, acquisition, and interpretation," plays an essential role in providing firms with the "skills and experience" required to expand into international markets. This process enables firms to adapt to foreign market dynamics, manage customer relationships, and navigate international trade complexities. In

Uganda's plastic manufacturing sector, companies such as Nice House of Plastics and Pipeline Design and Foam Industries Ltd have leveraged organizational learning to enhance their international market presence. These firms continuously acquire market intelligence, collaborate with international business partners, and refine their production techniques to meet global standards. Their ability to adapt to foreign consumer preferences and regulatory requirements has contributed to their expansion into regional markets such as Kenya, Rwanda, and the Democratic Republic of Congo.

The findings support Sainam & Bahadir (2024), who emphasize that firms with employees skilled in handling international customers and adhering to structured procedures have a higher likelihood of succeeding in foreign markets. Similarly, Javernick-Will (2009) emphasises the importance of learning through pioneering, engaging consultants, and fostering external relationships. Ugandan plastic manufacturers that actively seek guidance from international trade experts and participate in global trade fairs gain critical insights into branding, product differentiation, and cultural considerations, thereby strengthening their global competitiveness.

Additionally, Surdu & Narula (2021) suggest that firms capable of "unlearning" ineffective past strategies and adapting new ones increase their chances of re-entering and thriving in international markets. This is particularly relevant for Ugandan manufacturers that previously struggled with exports but, through learning and strategic adjustments, have successfully regained international market share. Overall, these findings add to the sparse literature on the role of organizational learning in internationalization, reinforcing its importance in enabling firms to perform effectively.

The results also reveal a positive and significant relationship between sustainable marketing strategies and internationalisation. A sustainable marketing strategy emphasising green product design, pricing, promotion, and distribution (Harini et al., 2020) not only boosts a firm's environmental and social contributions (Demessie & Shukla, 2024; Dangelico & Vocalelli, 2017) but also enhances global market competitiveness (Davari & Strutton, 2014).

In Uganda's plastic manufacturing sector, local companies are embracing these principles by adopting eco-friendly production methods. For instance, several Ugandan plastic manufacturers have shifted towards using recycled materials and sustainable packaging, while leveraging digital platforms for green promotion. These initiatives not only reduce environmental impacts but also expand market reach internationally (Minton et al., 2012). Such practices align with the market-driven sustainable approach outlined by Sheth and Parvatiyar (2021) and are corroborated by insights on consumer behaviour evolution in sustainability (Qalati, Barbosa, and Deshwal, 2024). Collectively, these efforts explain how sustainable marketing strategies serve as a critical lever for successful internationalisation, bridging environmental stewardship with competitive global expansion.

The results also revealed that sustainable marketing strategies partially mediates the link between organizational learning and internationalisation. This partial mediation implies that there are other factors that could compliment sustainable marketing strategy in this relationship, further studies may explore these factors. Therefore, by effectively acquiring and applying market insights, firms can develop and promote eco-friendly products that resonate globally. In Uganda's plastic manufacturing sector, companies like Gentex enterprises have embraced this approach by integrating recycled materials, eco-friendly packaging, and digital promotion techniques. Such initiatives not only reduce environmental impact but also enhance global competitiveness. This supports prior findings that limited research has examined the direct and indirect effects of

sustainable marketing in this context (Surdu & Narula, 2021). Ultimately, by leveraging organizational learning to implement green pricing, promotion, and distribution, Ugandan manufacturers are better positioned to meet international market demands, demonstrating the significant mediating role of sustainable marketing strategies in driving successful internationalisation.

6. Recommendations and conclusion

The major purpose of this paper is to explore how a sustainable marketing strategy mediates the link between organizational learning and the internationalization of plastic manufacturing companies in developing nations across sub-Saharan Africa. To achieve this, a cross-sectional and explanatory research approach was used, using a self-administered questionnaire to gather data from 130 plastic manufacturing firms in Uganda. The results demonstrate that both organizational learning and sustainable marketing strategy have a positive and significant impact on the internationalization of manufacturing firms. Furthermore, the findings suggest that sustainable marketing strategy serves as a partial mediator in the relationship between organizational learning and firm internationalization in Uganda.

This study offers significant contributions to academia, policy, and the business sector, as highlighted in the findings and discussion. Specifically, the paper advances existing knowledge on internationalization by demonstrating how sustainable marketing strategy facilitates organizational learning for global expansion, using evidence from a developing region where empirical studies are scarce. Moreover, it establishes that both organizational learning and sustainable marketing strategy are crucial and significant predictors of firm internationalization. Consequently, manufacturers in developing economies, including Uganda, should foster organizational learning through various strategies such as participation in local and international conferences, mentorship, coaching among others. These initiatives will enable employees to acquire and disseminate new and improved knowledge on international business operations, equipping them with the necessary competencies to conduct international market research, enhance product quality, and obtain certification critical factors in achieving successful internationalization.

Furthermore, manufacturers should integrate sustainable marketing strategies into their business operations to enhance their ability to penetrate international markets. This is particularly relevant given the global emphasis on sustainability, where firms are expected to adopt product development, pricing, promotion, and distribution strategies that not only drive economic growth but also promote environmental conservation and uphold societal values. By embracing sustainable marketing strategies as a fundamental principle of sustainable development, plastic manufacturing firms from developing economies like Uganda will enhance their market acceptance and competitiveness in the global marketplace.

Policymakers, particularly the Uganda Export Promotion Board, should play a critical role in equipping manufacturers with skills in sustainable marketing strategy. This can be achieved through organizing training workshops and capacity-building programs focused on sustainable marketing, a rapidly emerging concept with the potential to enhance firms' ability to expand internationally. Additionally, the board should engage in international benchmarking to identify best practices in sustainable marketing, which can then be adapted and promoted among local manufacturers as a strategic pathway for successful internationalization. Given the increasing

global demand for sustainability-driven approaches in product development, pricing, promotion, and distribution, aligning with these standards will ensure that manufacturers remain competitive while simultaneously supporting environmental conservation and societal well-being members.

This study has some challenges that future researchers may explore. One key limitation is the application of a cross-sectional research, which restricts the ability to observe changes over time. Given that internationalization is a continuous process rather than a one-time occurrence, future studies should consider employing a longitudinal approach to gain deeper insights into its development. Secondly, this study relied on a quantitative methodology, using closed-ended survey questions, which restricted respondents from providing in-depth insights into the research phenomenon. Future studies could benefit from employing a qualitative or mixed-methods approach to obtain richer and more detailed perspectives.

Additionally, the study accounted for 44.9% of the variance in firm internationalization, suggesting that other antecedents may influence the process. Future research should explore additional factors that contribute to firm internationalization. There may be the need to study more other variables like digital transformation and government policies that might influence the internationalization process. Also, given that that study provided a partial mediation, further studies should investigate this relationship. Lastly, the findings are based on a sample of 130 plastic manufacturing firms in Uganda. To enhance generalizability, further studies should be conducted in different contexts beyond Uganda to validate and extend these findings.

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