Research Article

The Impact of International Logistics Policy on GSCM Performance and World-Class SME Capabilities: A Case Study on Indonesia

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Abstract

Globalization has encouraged Indonesian Small and Medium Enterprises (SMEs) to accelerate their business capabilities to be able to enter the global market and enhance Indonesia's creative economy. Logistics governance becomes crucial, because penetrating the international market requires a standardized logistics system and high environmental policy compliance. This study aims to analyze the sustainable supply chain capabilities of Indonesian SMEs, and how improvements can enhance Indonesia's SMEs towards a world-class standard. It focuses on four out of 13 dimensions: international logistics, traditional logistics, provision, and inventory. This study uses a survey-based quantitative approach through purposive sampling of SME owners in Indonesia. The data from 113 respondents who participated by filling out an online questionnaire were analyzed using Structural Equation Modelling-Partial Least Square (SEM-PLS). The results showed that traditional logistics significantly affected SME inventories and the internationalization of their logistics. Good inventory management affects the ability of SMEs to supply goods or services. International logistics has an impact on the efficiency of supply chain management, which has the potential to increase global market access. Green Supply Chain Management (GSCM) has been growing in importance, affecting the efficiency of sustainable supply chains and SMEs' capabilities to compete globally. GSCM efficiency can optimize resources, reduce environmental impact, and increase the competitiveness of SMEs in the global market. By implementing GSCM, SMEs can be innovative and strong in global competition.

Keywords: Traditional Logistics; International Logistics; Green Supply Chain Management; World-Class SME Capabilities

Introduction

Significant changes in the global market, such as the involvement of communications, transportation, and other opportunities in the value chain, has raised awareness on the importance of globalization in supporting corporate growth. In the past, the international market prioritized large companies. However, with more open trade and manufacturing, transportation, as well as the development of communication, opportunities are increasingly opening up to Small and Medium Enterprises (SMEs) at the global level. Involvement in international markets is believed to help SMEs thrive through exports, technology adoption, and international operations. Globalization of the world economy creates opportunities for developed and developing countries to prosper through global trade. SMEs can engage in global business through the globalization of production and marketplace, reducing trade barriers between countries.

Indonesia has great export potential through its natural resources, including oil and gas. In February 2023, Indonesia's export value had reached US$ 21.40 billion from the oil and gas sector (Harini et al., 2023). However, there is still an opportunity to increase exports to earn a higher income. SMEs in Indonesia play an important role in the economy, contributing 60.5% to the Gross Domestic Product (GDP) and absorbing 96.92% of the workforce. Unfortunately, the globalization of Indonesian SMEs' is still low due to limitations in export capabilities. Indonesian SMEs often face challenges in meeting international export standards due to limited technological incorporation, insufficient infrastructure, lack of access to finance for necessary upgrades, and inadequate understanding of global market demands, quality standards, and compliance requirements. In 2020, SME exports were only 14.37% of total non-oil and gas exports, increasing slightly to 15.69% in 2021. This figure is far below the average of Asia Pacific countries, which is around 35% (Handoyo et al., 2021).

The government has supported SMEs in exports through various policies such as export-oriented credit financing, exhibition facilities, design development, services to business actors, market information, technical support, and promotion (Ginting, 2015). Initiatives for Micro, Small, and Medium Enterprises (MSMEs) include the 'Gerakan Nasional Bangga Buatan Indonesia (The National Movement of Proud of Indonesian Products)' , aiming to drive digitalization for offline MSMEs and enhance national branding of flagship MSME products across various marketplaces. Additionally, the Omnibus Law on Job Creation includes policies to support and facilitate MSME product exports by providing customs incentives for export-oriented MSMEs, easing the import of raw materials and auxiliary materials, and ultimately facilitating their export. However, SMEs need further support from the government because of their smaller size, limited capabilities, and higher vulnerability compared to large companies. This is important for SMEs to understand the international market and play a role in it. In addition to export and networking aspects, the internationalization of SMEs involves extensive activities. In this process, supply chain management is the key to influencing the success and competitiveness of international businesses. A good supply chain strategy helps SMEs meet global challenges, increase efficiency, and operate in international markets sustainably (Cagri Gurbuz et al., 2023). However, the negative impact on the environment is very important in SME operations, especially on pollution and plastic waste. Pollution comes from production waste, gas emissions, and hazardous chemicals. If not managed properly, pollution from SMEs can harm the environment and public health. In Indonesia, waste statistics show that plastic waste ranks second in quantity (5.4 million tons per year or 14% of total waste), surpassing paper waste which now ranks third (3.6 million tons per year or 9%) (Karjoko et al., 2022). Indonesian SMEs must reduce waste that adversely affects the environment in their business operations.

Several studies have shown that supply chains have an important role in the success of global businesses (Amankwah-Amoah et al., 2022; Wajdi et al., 2020). Although the logistics design process for SMEs is not too complicated, when put in the context of internationalization, the complexity of raw material supply and product distribution becomes important (Fath et al., 2020). Therefore, SMEs' logistics performance must follow international standards to remain competitive. This prompted many researchers to propose models that analyzed key factors in the supply chain that illustrate the business's potential. Some models even consider technology, financial aspects, and local models according to the conditions of countries such as China, South Korea, and the United States (Brendzel-Skowera, 2021; Lopes de Sousa Jabbour et al., 2019; Ünal et al., 2019). However, there is also an interesting idea from Suchek et al. (2023), who propose the environmental aspects of logistics by integrating Green Supply Chain Management (GSCM). Additionally, there is a taxonomy of supply chain dimensions that covers various aspects such as traditional logistics, international logistics, raw material supply, inventory administration, manufacturing, manufacturing quality, collaboration, client relationship administration, information systems and technology, agile supply chain, decision making, organizational factors, and employee performance (Kumar & Kumar Singh, 2017; Wajdi et al., 2020).

However, problems arise because many supply chain performance measurement tools focus only on large-scale industries (Jia & Wang, 2019). Meanwhile the SME sector is considered as the backbone of Indonesia's economy and has the potential to expand to a global scale. Therefore, there is urgency in analyzing SMEs' capabilities to improve Indonesia's business performance to reach global standards through sustainable supply chains. This study aims to analyze the sustainable supply chain capabilities of Indonesian SMEs, and how its improvements can enhance Indonesia's SMEs towards a world-class standard. It focuses on four out

of 13 dimensions, that are: international logistics, traditional logistics, provision, and inventory. This research is the first model to evaluate the capabilities of SMEs in developing countries, especially Indonesia, in an effort to internationalize and contribute to achieving Sustainable Development Goals (SDGs) on a global scale through environmentally sound supply chains.

Literature Review

Indonesian SMEs in International Trade

SMEs play an important strategic role in boosting the country's foreign exchange through stable exports. SMEs contribute significantly to the export of non-oil and gas goods and have the potential to grow significantly in the future. Although the COVID-19 pandemic caused global economic instability in 2019-2021, Indonesia still encouraged SMEs to optimize their market potential. As a result, Indonesian SMEs contribute 15.7% to the country's exports. Data from the Coordinating Ministry for Economic Affairs of the Republic of Indonesia shows its continuous increase, making Indonesia the leader in ASEAN in this field (Handoyo et al., 2021).

In developing networks and communication between countries, there are various opportunities for SMEs to engage in international activities such as exports, foreign direct investment, and licensing. Export is becoming the top choice for SMEs, because their financial resources are limited (Lee et al., 2012). However, SMEs still face constraints in participating in international trade, such as the lack of relevant skills, lack of understanding of international markets, non-tariff hurdles, complexity of cross-border regulation, and limited access to finance. Foreign direct investment and licensing became alternatives with lower opportunities for SMEs as they focus more on labor-intensive activities (Wahyono et al., 2021). As some studies have suggested, although large companies are ones who usually conduct internationalization activities, SMEs now have opportunities to participate.

The World Trade Organization (WTO) seeks to assist SMEs in global trade through several initiatives. The government has also provided support through policies such as export-oriented credit financing, exhibition facilities, design development, business services, market information, technical support, and promotion (Ciszewska-Mlinarič, 2016). However, SMEs need further support due to their smaller scale, capabilities, and higher vulnerability. Policy interventions have only focused on exports and networking (I. Ali et al., 2020), however, internationalization can include broader activities.

Through collaborative efforts between the government, relevant institutions, and businesses, Indonesian SMEs have a great opportunity to continue to grow in international trade. Upskilling, understanding of global markets, reduction of non-tariff barriers, simplifying regulations, and better access to financial resources will contribute to the SMEs' ability to seize broader and more sustainable international trade opportunities. By facing these challenges with determination and innovation, Indonesian SMEs can play an increasingly important role in advancing the national economy and achieving success in international trade.

SME Supply Chain Management

The ASEAN Economic Community (AEC) expanded the market in capital, goods, services, and labor throughout the ASEAN region, fostering economic competition (Iqbal & Rahman, 2015). The main challenge is meeting consumer demands for quality, affordability, and easily-available products. Producers must be creative and efficient in production and distribution, involving parties such as suppliers, manufacturers, retailers, and distributors. The concept of Supply Chain Management emerged as an effort to create quality, cheap, and efficient products (Faridi & Malik, 2020).

Supply chain management in SMEs is influenced by information sharing, supplier trust, and long-term partnerships with suppliers (Thakkar et al., 2013). In the efforts to internationalize their business, supply chain management can connect SME products to international markets. Thus, an effective supply chain

management strategy is required to engage in international trade. The stages of the strategy include readiness assessment, market research to understand consumer and regulatory preferences, identification of trusted suppliers, cross-border logistics planning, efficient inventory management, technological adoption to streamline processes, risk management by identifying and minimizing risks, collaboration with local partners, and continuous improvement based on feedback and market changes (Cragg & McNamara, 2018; Hamdana et al., 2022). Following these stages, SMEs can succeed in international trade and remain competitive globally.

Hypothesis Development

Stock management of raw materials and finished products in SMEs can be influenced by conventional decisions implemented in the business practice. For example, in the study described by Hazen et al. (2015), a multi attribute-based model was introduced that aims to improve performance in the supply chain (SC) by linking stock regulation with procurement policy. Furthermore, in another study, Chandak et al. (2020) proposed a model with two objectives to analyze logistics policies and product stock management that are vulnerable to damage. This illustrates that mismanagement can impact the company's financial losses, and effective logistics policies affect the procurement and distribution of raw materials and finished products. Thus, proper organization can reduce inventory costs and improve operational efficiency.

Conversely, improper decisions can result in stock imbalances, financial losses, and shipping delays. Therefore, integrating good logistics policies is crucial in optimizing SME inventory management. Several articles discuss supply chain management, a broader concept that includes the importance of logistics and inventory management. For example, one article states that the integration of a company with its suppliers and consumers can create and coordinate supply chain processes through difficult means (Avelar-Sosa et al., 2015). Another article discusses the implementation of Kaizen, a tool to eliminate waste from the production process, which can improve inventory management (De Melo & Banzhaf, 2016). Therefore, although the search results do not directly answer the question, it can be assumed that traditional logistics is part of supply chain management and possibly affects SME inventory management.

The traditional logistics of SMEs play an important role in influencing their international logistics. Policies on procurement of raw materials and distribution of finished products domestically can form the basis for international operations. The efficiency and accuracy of stock management and shipments at the local level reflect the readiness to address international logistics challenges such as cross-border shipments and policy adjustments (Winter et al., 2022). Therefore, a solid foundation in traditional logistics can optimize the chances of success in SME international logistics. There are several studies that examine the influence of traditional logistics on international business expansion. Yang (2016) states that the traditional logistics of small companies is a basic point that can be accelerated with the international logistics system to expand the reach and compete in the global market (Yang, 2016). However, challenges such as high logistics costs and limited access to transportation infrastructure can hamper SMEs' ability to expand their business internationally. Managing logistics within distribution channels is critical to ensuring that products are delivered on time, in the right quantity, quality, location, and most efficiently (Yeo et al., 2020).

The above study assumes that traditional logistics has an important relationship with SME inventory and capabilities to navigate international logistics. Therefore, this study proposes the following hypothesis:

H1: Traditional logistics policy has a significant positive effect on SME Inventory

H2: Traditional logistics policy has a significant positive effect on the international logistics of SMEs

Provisioning plays a major role in supply chain management. Efficient provisioning management can impact cash flow, product availability, and operational costs. Business units that do not implement effective and

efficient supply chains may be excluded from competition within The ASEAN Free Trade Area (AFTA) and other free trade areas (Jansson & Karvonen, 2014). Supply chain management aims for a timely delivery on products to satisfy consumers, reduce costs, and increase productivity by optimizing raw material quantities' time, location, and flow (Yang et al., 2021). Efficient supply chain management ensures smooth production and marketing processes to meet customer needs. Internal supply chains involve an organization's process to convert inputs from suppliers into outputs, that is from raw materials entering the company to products distributed outside the company (Kiatcharoenpol & Sirisawat, 2020). Efficient provisioning management can help business managers avoid stock shortages, especially during busy seasons, and prevent overstock that can lead to increased operational costs. Therefore, SMEs must manage their provision efficiently to ensure product availability, reduce operational costs, and increase competitiveness. Fantazy et al. (2012), studied the criteria that supports the cooperation of the Canadian manufacturing industry with a supply chain management approach, concluding that inventory management has contributed to effective collaboration between SMEs and supply chains. Meanwhile, Karia (2022), who analyzed the supply chain management strategy of the halal fast food industry, found a positive impact of supply chain management in optimizing the movement of ready-to-eat menus in food storefronts.

Globalization of logistics in all business sectors, especially SMEs, is likely to have an impact on SME supply because efficient and effective supply chain management can increase productivity, optimize time, location, and amount of raw material flow, as well as ensure product availability to meet customer needs (Filipe & Pimentel, 2023). The impact of ASEAN SME globalization on participation in supply chains also requires attention. There are two main components in supply chain management: the upstream supply chain and the internal supply chain. Upstream supply chains include the organization's first-level suppliers and suppliers with established relationships. In contrast, the internal supply chain includes all processes used by organizations to convert inputs into outputs (Chang et al., 2022). Suppose SMEs globalize their logistics through the integrated help of logistics companies. In such a case, they can expand supplier and customer networks, improve supply chain efficiency and effectiveness, and expand to global markets. Therefore, the globalization of SME logistics can positively impact SME supply. Specific research that investigates logistics internationalization's impact on supply is still quite limited. However, one research made by Avelar-Sosa et al. (2015) that examined the logistics performance of Mexican Maquiladoras (Mexican Export Processing Plants) showed the influence of logistics internationalization under global export policies on inventory management and raw material procurement with strict safety standards.

The theoretical study above builds the researcher's assumption that SME inventory management and upgrading SME logistics to global standards have implications to SME supply. Hence, the researcher proposes the following hypothesis:

H3: SME Inventory has a significant positive impact on SME Supply

H4: SME international logistics has a significant positive impact on SME Supply

Green Supply Chain Management Efficiency is a strategic approach that focuses on sustainable practices in every aspect of the supply chain (Yu et al., 2019). The aim is to reduce negative environmental impacts and promote more efficient use of resources. Green Supply Chain Management involves integrating sustainable practices in every stage of the supply chain, from product design, raw material purchasing, production, and distribution, to waste management. Green Supply Chain Management contributes to the operational efficiency of the company. By optimizing the use of resources, reducing waste, and increasing the efficiency of production and distribution processes, companies can achieve a competitive advantage and reduce operational costs (Sun & Sun, 2021).

Supplying industries, large and small, can affect Green Supply Chain Management in several ways, although specific research evidence is limited. The supplying stage in industries, both large and small, significantly impacts green supply chain management as it involves procuring raw materials, components, and finished products from multiple sources (Jia & Wang, 2019). A study by Hong et al. (2019) suggests that the supplying

stage is also beneficial for encouraging innovation in products and processes that are more efficient and environmentally friendly. Industries can collaborate with suppliers to develop products that are more durable, energy efficient, and produce less waste. Hu & Li (2021) considers supplying as involving the transportation of products from supplier to producer. Using efficient and sustainable transportation, such as environmentally-friendly vehicles or optimizing delivery routes, is an important part of green supply chain management (Garza-Reyes et al., 2018).

The explanation above encouraged the researchers to propose the next hypothesis, namely:

H5: SME Supply has a significant positive influence on green supply chain management efficiency

The Ministry of Cooperatives and SMEs of the Republic of Indonesia is trying to accelerate the SME advancement by encouraging SME business internationalization. A testament to this is the development of SME logistics standardization with the cooperation of logistics companies in Indonesia as mentors (Dzikriansyah et al., 2023). In this collaboration, the companies were asked to provide training and technological development. They also assist SMEs to solve logistics and supply chain problems through the Integrated Business Service Center (PLUT) program, which is now present in 74 locations throughout Indonesia. Husny et al. (2016) stated that family businesses must integrate their business operations with logistics companies in cross-border distribution of goods. Additionally, Tokman et al., (2013) stated that SMEs that want to conduct innovative practices to meet export and market needs to understand Digital Marketing, Financial Management, Export-Import Shipping, National Product Standardization for SMEs, and assistance in shipping SME products with internationally-standardized integrated logistics (Tokman et al., 2013). However, in global business practices, products that enter developed countries mostly require the importers to have an environmentally-friendly product legality. This is due to commitments made by the WTO General Agreement on Trade in Services (GATS), which insists trade agreements, including imports, must be free from illegal fishing, illegal logging, and wildlife trade, among other environmental concerns (Bianchi & Abu Saleh, 2020). This condition inevitably affects SME supply chain management, which is expected to be efficient and has minimal damage to the green ecosystem. Therefore, GSCM emerged to assist in the implementation of supply chain strategies. GSCM requires industrial activities to strike balance between marketing and environmental conservation, to give birth to new issues, such as energy saving and pollution reduction, to improve competitive strategies (Kim et al., 2021). SMEs that implement international logistics integration need to improve networks or supply chains for waste reduction and operational efficiency, including the delivery of products and services. This forms the basis for how standardized international logistics carried out by SMEs with logistics companies has the potential to affect GSCM efficiency from raw materials to finished products and the final disposal of these products entering the export market.

Cherrafi et al (2017) explained that the GSCM concept is an integration of environmental perspectives into the supply chain management, including product design, selection of raw material sources, manufacturing processes, delivery of final products to consumers, and product management after its end-of-life (Cherrafi et al., 2017). The GSCM concept can encourage companies to improve their environmental performance and reduce spending, as well as increasing their competitiveness and international recognition (Roehrich et al., 2017). GSCM can help businesses improve their environmental performance, reduce costs, improve brand reputation, and meet international trade requirements, which can help them become more competitive and internationally recognized.

The results of the literature review encouraged the researchers to further investigate the internationalization of SMEs in international logistics and green supply chains with the following hypotheses:

H6: International logistics has a significant positive effect on green supply chain management efficiency

H7: Green supply chain management efficiency has a significant positive effect on world-class SME capabilities

Methods

This study uses a quantitative approach by testing the hypothesis built in Figure 1 according to the results of the empirical literature review. The research model considers six predictive latent variables that describe sustainable SME business operations to achieve world-class standard capabilities with standardized supply chains. The methodology of this study consists of three steps. Firstly, the distribution of a questionnaire to multisectoral Indonesian SMEs. Secondly, the data obtained from the questionnaire are compiled and verified. Finally, the model proposed in Figure 1 is evaluated using the Partial Least Square-Structural Equation Modeling method.

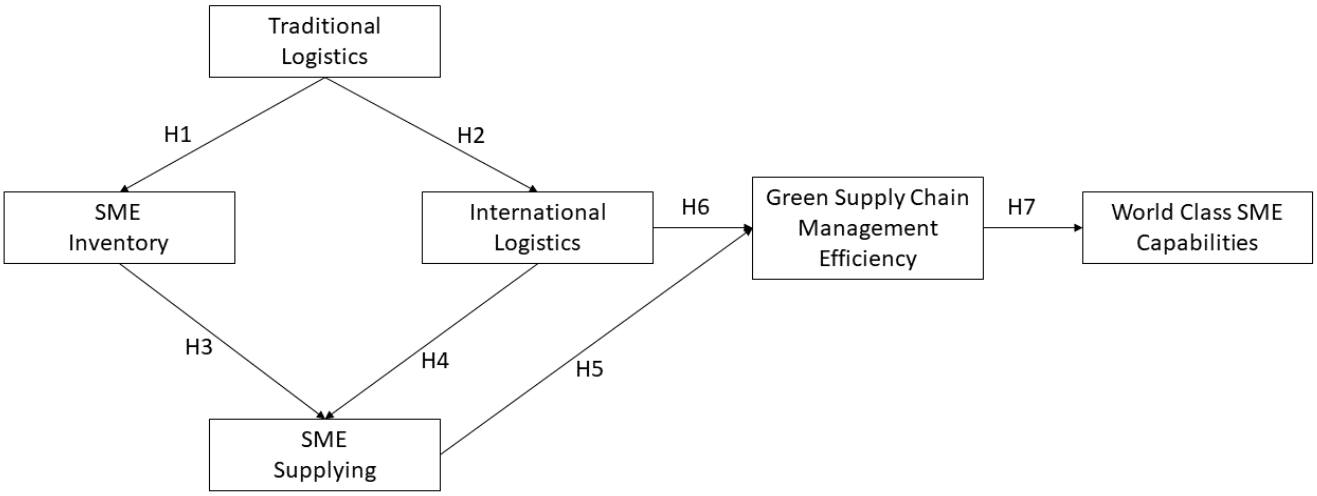

Figure 1. Research Model
Source: Authors Analysis

In the first stage of our research, we designed a questionnaire that was adapted from the results of the literature review. All of the items in the questionnaire were related to the supply chain operational processes contributing to the success of world-class SMEs. The questionnaire uses a five-point Likert Scale in measuring responses, ranging from 1: "Strongly Disagree" to 5: "Strongly Agree". Supply chain operational measurement variables are further illustrated in Table 1.

Table 1. Variable Operationalization

Variable	Indicator	Reference
Traditional Logistics	SMEs focus on maintaining supplier-customer logistics coordination	(Avelar-Sosa et al., 2015; García Márquez et al., 2015; Hussin & Mohamad Shah, 2021)
	SMEs focus on delivering products on time.	
	SMEs focus on supplying products and services at minimal cost.	
	Logistics activities span all operational aspects within SMEs	

	SMEs strive to maintain customer satisfaction based on product delivery.	
	SMEs strive to be efficient in managing the stock of goods.	
	SMEs minimize the percentage of shipping errors, such as damaged products or delivery to the wrong address.	
SME Inventory	SMEs have inventory management and management that covers all aspects of good operations.	(Dametew et al., 2020; Gebisa, 2023; Panigrahi et al., 2022; Sebayang et al., 2021)
	SMEs apply Just-In-Time (JIT) principles to optimize delivery times and avoid excessive stockpiling.	
	SMEs have an effective inventory management strategy to minimize the risk of shortage or overstock at every production stage.	
	SMEs seek to reduce inventory derivative costs to improve operational efficiency.	
	SMEs have regional distribution areas with the cooperation of logistics companies based on product types to improve efficiency in the distribution and delivery process.	
	SMEs have an effective management system in place within the warehouse to better monitor, manage, and optimize inventory.	
	SMEs often update inventory by monitoring quality regularly to avoid damaged products.	
International Logistics	SMEs have measures to reduce the negative impact or obstacles on the customs process in the country of origin.	(Avelar-Sosa et al., 2015; Chang et al., 2022; Yang et al., 2021)
	SMEs develop effective contingency plans to address possible delays during customs processes in destination countries.	
	SMEs have complied with applicable international import and export regulations so that logistics operations remain under regulations.	

	SMEs choose the appropriate Incoterms conditions for each international transaction to avoid vagueness in the distribution of responsibilities and costs.	
	SMEs build strong partnership networks with international partners such as shipping agencies and local logistics companies.	
	SMEs strive to overcome the risk of foreign currency fluctuations affecting import and export costs.	
	SMEs meet international certification requirements for exported products and services (Halal Environmental Certification, etc.)	
	SMEs leverage tracking technology to monitor international shipping journeys and provide consumers with real-time information.	
SME Supply	Products produced by SMEs are always available to meet customer demand.	(Kumar & Kumar Singh, 2017; Riantani et al., 2019; Tokman et al., 2013)
	SMEs have accurate inventory information to help avoid shortages or overstock.	
	SMEs are efficient in managing the inventory of raw materials needed for production, minimizing excess or deficiency	
	SMEs can adjust production or supply according to rapidly changing customer demands.	
Green Supply Chain Management Efficiency	SMEs use raw materials that have a lower environmental impact on their production.	(Y. Ali et al., 2020; Roehrich et al., 2017; Sugandini et al., 2020; Sun & Sun, 2021)
	SMEs work to reduce production waste and create product residue recovery strategies to reduce environmental impact.	
	SMEs prepare to reduce carbon emissions throughout their supply chains, including transportation and production.	
	SMEs always use environmentally friendly and recyclable packaging.	

	SMEs collaborate with business partners to build more efficient green supply chains.	
	SMEs periodically measure and report on the environmental impact of their operations.	
World-Class SME Capabilities	SMEs can produce innovative products or services that follow global market developments.	(Chen, 2019; Cragg & McNamara, 2018; Sharfaei et al., 2023)
	SMEs always strive for SME products or services to achieve international quality standards.	
	Exported SME products have succeeded in bringing profitable profits to SMEs	
	SMEs have successfully adopted advanced technology and automation in SME production or operational processes.	
	SMEs always maintain strategic partnerships with other companies (including logistics companies) or parties supporting global growth.	

Since the items above are adaptations from previous studies, reliability validity testing is integrated directly after data collection. The respondents of this study are SME owners from all sectors identified using purposive sampling techniques. The criteria of the respondents that can be sampled are businesses that have been operating for at least two years, have a minimum income of Rp. 3,000,000 per month, and have/are selling products internationally, with the closest export destination requirement being Indonesia's neighboring countries. The data collection process is conducted online using Google Forms and disseminated through social media and the researchers' relations. The data collection process was conducted from June to July 2023.

The statistical analysis used the Structural Equation Model-Partial Least Squares (SEM-PLS) to explore the relationship between variables with the SmartPLS tool Version 3.2.7. The hypothesis testing underwent two stages: the outer model testing and the inner model testing. The outer model testing aimed to determine the correlation value of latent variables, cross-loadings, construct validity and reliability, and R Square (R^2). The inner model testing aimed to determine the value of the path coefficient and inner model T-statistic, which shows the degree of variation in changes in the independent variable to the dependent variable (Becker et al., 2023). For this study, the researchers chose the PLS-SEM analysis technique due to several advantages, including its ability to overcome the problem of hidden variables, explaining the relationship between variables, overcoming the problem of multicollinearity, and analyzing data that does not meet the assumption of normal distribution (Hair Jr. et al., 2017).

Result and Analysis

This study received 113 research respondents who are SME owners in Indonesia. The data in Table 2 illustrates the respondents' demographic profiles and business characteristics. Most respondents were women (65%), while men comprised 35% of the sample. The largest age range is 20-40 years (68%), with the majority concentrated in the 20-30 years (37%) and 31-40 years (31%) groups. Regionally, the majority of

respondents live in Java (37%), followed by Sumatra (18%), Bali-Nusa Tenggara (17%), and Kalimantan (13%). Most respondents have completed a bachelor's/diploma-level education (42%), followed by a master's/doctoral-level education (19%). Most businesses are 1-2 years old (56%), while those older than 5 years make up 24% of the total sample. Sorted by the business sector, the majority of SMEs were from the culinary sector (41%), followed by agribusiness (27%) and manufacturing (17%). The majority of respondents earn a monthly profit of between Rp. 3,000,000 - Rp. 6,000,000 (46%), while 33% earn more than Rp. 10,000,000 per month. This data set provides valuable insights into the respondents' demographics and business profiles.

Table 2. Characteristics of Respondents

	Total	**Percentage**
Gender		
Man	39	35%
Woman	74	65%
Age		
20-30 Years	42	37%
31-40 Years	35	31%
41-50 Years	17	15%
51-60 Years	11	10%
>60 Years	8	7%
Location		
Java	42	37%
Kalimantan	15	13%
Sumatera	20	18%
Bali-Nusa Tenggara	19	17%
Sulawesi	11	10%
Maluku-Papua	6	5%
Latest Education		
Junior High School	9	8%
Senior High School	35	31%
Bachelor/Diploma	48	42%
Master/PhD	21	19%
Monthly Business Profit		
Rp. 3,000,000 – Rp. 6,000,000	52	46%
Rp. 7,000,000 – Rp. 10,000,000	24	21%
>Rp. 10,000,000	37	33%

Years in Operation		
1-2 Years	63	56%
3-4 Years	23	20%
≥ 5 Years	27	24%
Business Sector		
Manufacturing	19	17%
Culinary	46	41%
Agribusiness	31	27%
Fashion	17	15%

Source: Author Analysis

In the PLS method, validity is measured using reflective indicators that are assessed based on the correlation relationship between item score or component score and construct score, known as load factor. The indicators that measure such constructs with values above 0.7 are considered to have partial significance, or in other words, acceptable items. In addition, validity can also be measured using the AVE (Average Variance Extracted) value. If the AVE value is > 0.5, the results are considered acceptable. AVE represents the average percentage variance of the score extracted from the latent variable estimated through the load factor of the indicator set in the literacy algorithm process in PLS (Becker et al., 2023). The outer load factor results in Table 3 show that all outer load factor values are above 0.7, which means they are valid for use in further research or have met the criteria. In addition to the outer model, it is important to evaluate the Average Variance Extracted (AVE) value for each construct to ensure convergent validity.

Reliability tests measure the extent to which measurements using the same object will produce similar data. This is done to ensure that the measurement process does not fail. The researchers repeat the measurement process on the same measurement object (without any changes) and ensure that the results are consistent or stable, without significant differences. Cronbach's Alpha (CA) and Composite Reliability (CR), also known as Dillon-Goldstein's, are two methods used to measure the reliability of a construct using reflective indicators. Cronbach's Alpha measures the lower limit of a construct's reliability value, while Composite Reliability measures the construct's actual reliability value. Therefore, it is more advisable to use Composite Reliability in research. Generally, Alpha or composite reliability values should be greater than 0.7, although 0.6 values are still acceptable (Rigdon et al., 2017).

The values of Cronbach's Alpha and Composite Reliability in Table 3 show that all constructs have values of Cronbach's Alpha > 0.6 and Composite Reliability > 0.7. Thus, it can be concluded that the data has no reliability problems and can be considered as reliable.

Table 3. Validity-Reliability Test Results

Variable	Outer Loadings	AVE	CR	CA
Indicator				
Traditional Logistics				
TL1	0.758	0.551	0.895	0.863
TL2	0.790			

TL3	0.755			
TL4	0.768			
TL5	0.799			
TL6	0.763			
TL7	0.846			
SME Inventory				
SI1	0.850	0.550	0.894	0.863
SI2	0.822			
SI3	0.736			
SI4	0.776			
SI5	0.730			
SI6	0.719			
SI7	0.732			
International Logistics				
IL1	0.794	0.538	0.903	0.876
IL2	0.768			
IL3	0.764			
IL4	0.804			
IL5	0.733			
IL6	0.796			
IL7	0.775			
IL8	0.823			
SME Supply				
SS1	0.909	0.729	0.914	0.873
SS2	0.906			
SS3	0.886			
SS4	0.897			
Green Supply Chain Management Efficiency				
GSCM1	0.764	0.584	0.893	0.856
GSCM2	0.765			
GSCM3	0.776			
GSCM4	0.728			
GSCM5	0.786			
GSCM6	0.851			

World-Class SME Capabilities				
WCC1	0.857	0.606	0.884	0.837
WCC2	0.849			
WCC3	0.733			
WCC4	0.710			
WCC5	0.732			

Source: SmartPLS 3 Analysis

After the validity and reliability are tested, it can proceed to the next stage, that is testing the relationship or strength of estimation between latent variables (structural model) or constructs based on substantive theory. The structural model testing procedure is carried out through bootstrapping tools with the output of the structural model pattern in Figure 2 below.

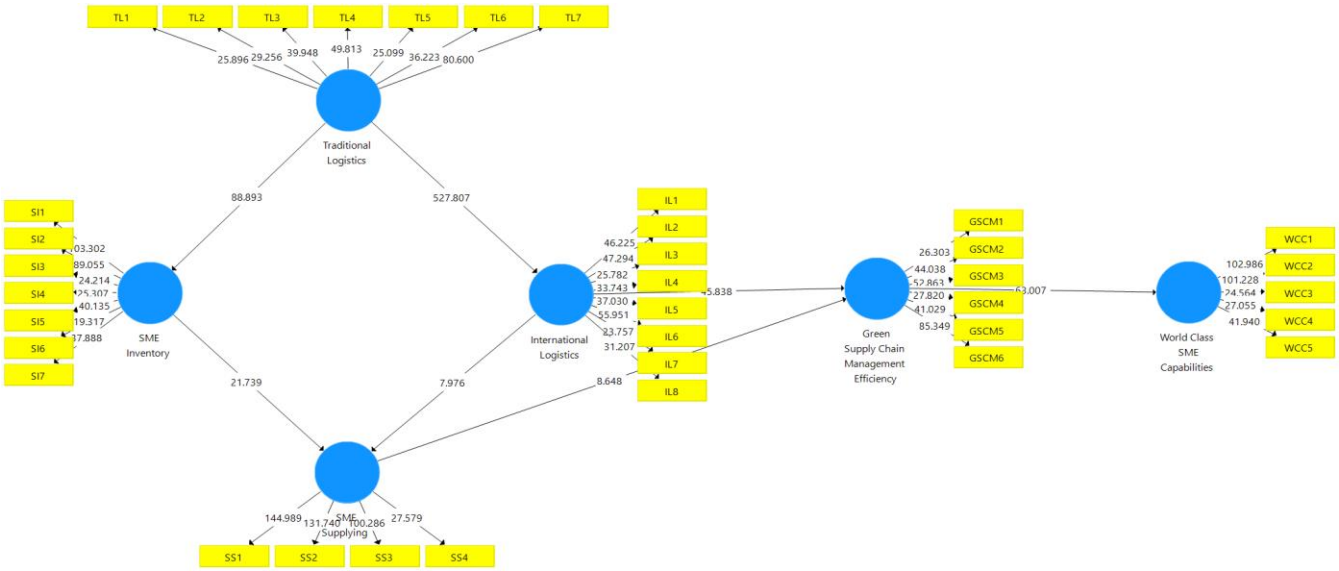

Figure 2 Inner Structural Model
Source: SmartPLS 3 Analysis

The first test in the inner structural model measures the change of the dependent variable to the independent variable, which can be seen as the value of R square. Tests on R2 have a rating category that ranges from 0 to 1, which means that the higher the weight, a higher level of prediction accuracy is shown. Sarstedt et al. (2022) stated that there is an R-Square categorization where values of 0.75, 0.50, and 0.25 can be interpreted that each construct is expressed as substantial, moderate, and weak. In Table 4, it is found that the variable SME Inventory is in the substantial category, International Logistics is in the substantial category, SME Supply is in the substantial category, Green Supply Chain Management Efficiency is in the strong category, and World-Class SME Capabilities is in the strong category.

Furthermore, hypothesis testing can be calculated from the positive Path Coefficient, a t-test value of >1.96, with a significance level at the p-value of < 0.05 (Memon et al., 2021). Table 4 shows that this study accepted the seven hypotheses proposed, with H2 being the strongest hypothesis influence based on T-Test scores. Therefore, it can be concluded that local logistics capabilities have a strong influence on the efforts of SMEs to accelerate and achieve international standard product delivery.

Table 4. Results of Hypothesis Testing and R-Square

Hypothesis	Path Coefficient	T-Test	P-Value	Decision	R-Square
Traditional Logistics → SME Inventory	0.866	88,893	0.000	Accepted	0.750
Traditional Logistics → International Logistics	0.977	527,807	0.000	Accepted	0.954
SME Inventory → SME Supply	0.673	21,739	0.000	Accepted	0.827
International Logistics → SME Supply	0.261	7,976	0.000	Accepted	0.827
SME Supply → Green Supply Chain Management Efficiency	0.170	8,648	0.000	Accepted	0.932
International Logistics → Green Supply Chain Management Efficiency	0.817	45,838	0.000	Accepted	0.932
Green Supply Chain Management Efficiency → World-Class SME Capabilities	0.827	63,007	0.000	Accepted	0.884

Source: SmartPLS 3 Analysis

The results of hypothesis testing in Table 4 showed the acceptance of H1, which means traditional logistics significantly affects SME Inventory. This is related to the SMEs' supply chain management capabilities, including delivery, inventory management, or coordination with suppliers and business partners. SMEs need to integrate the supply chain more optimally to prevent disruption of the flow of goods from suppliers to consumers and damage the overall performance of the supply chain. In addition, these results support the inventory management theory, which suggests that logistics efficiency can affect inventory levels. SMEs using traditional logistics may have higher inventory levels due to constraints in ordering, shipping, or storing goods. The process also includes managing the flow of goods from consumers to producers or distributors. This study also accepted H2, which means that traditional logistics significantly affects the internationalization of SME logistics. These findings support the internationalization theory, which states that SMEs tend to shift to international markets when they have better access to resources and markets. While efficient traditional logistics can improve SMEs' ability to access international markets, international logistics requires good coordination with suppliers and other business partners. Therefore, if local logistics systems struggle with coordination with suppliers and business partners or are not running effectively, their ability to compete in the international market will be hindered. In that case, SMEs may find it difficult to compete with lower prices in international markets and meet customer demands on a global scale. Indonesian SME's culinary products are vital products that require the acceleration of a standardized logistics system due to concerns that food products, especially semi-wet types such as rendang, chili sauce, shredded meat or fish, etc. will reach foreign consumers in a damaged state. Thus, SMEs must synergize with various parties in understanding the importance of logistics optimization in the internationalization process and prepare themselves to overcome logistical challenges that may arise in international expansion, including resource integration, manufacturing flexibility, and IT infrastructure capacity.

Furthermore, this study accepted H3 based on testing the inner model of Table 4 with a significance value of 21,739. This indicates a relationship between inventory management and the ability of SMEs to supply goods or services. A well-managed inventory can affect an SME's ability to supply goods or services to consumers. Sufficient inventory can enable SMEs to meet customer demand well. In addition, the effectiveness of SME

inventory management can affect the flow of goods from suppliers to end consumers. Inventory that is too low or too high can cause bottlenecks in the supply chain. Risk management is also an important approach in optimizing supply networks, which plays a critical role in mitigating disruptions, enhancing resilience, and ensuring continuity. Addressing uncertainties such as market volatility, supplier issues, and global events becomes pivotal to enable proactive strategies and foster the adaptability of SMEs in navigating complex and dynamic global markets.

An SME is able to be more flexible in responding to fluctuating customer demand by having adequate inventory. This allows businesses to avoid stockouts and meet changing customer demands. A well-managed inventory allows SMEs to plan production better, allowing them to produce larger quantities and optimize production costs due to having sufficient amount of raw materials to fulfill more orders simultaneously. In addition, this study also accepted H4, which means that international logistics affects SME Supply significantly. Logistics processes on a global scale plays a key role in maintaining the smooth flow of goods from producers to international consumers. For SMEs involved in international trade, efficient logistics and compliance with international standards enable them to seize global market opportunities. This includes compliance with environmental rules in the export of foreign products. Efficient shipping processes to different countries can significantly expand SMEs' market share. International logistics connects the global supply chain stages, including suppliers, manufacturers, distributors, and end consumers. The more effectively SMEs manage their products in accordance to global standards, the more integrated their business networks will become, which in turn will improve the flow of product supply and customer affordability.

This study also accepted H5, meaning SME Supply significantly affects Green Supply Chain Management efficiency. GSCM is important in promoting environmental sustainability in business practices. GSCM refers to integrating environmental concepts into every stage of the supply chain to reduce negative environmental impacts. SMEs that act as suppliers have the potential to contribute to GSCM efficiency. By adopting eco-friendly practices, such as waste reduction, sustainable use of raw materials, and energy efficiency, SMEs can help reduce their carbon footprints and other environmental impacts. This positively affects the company's reputation for being more sustainable and meeting the demands of increasingly environmentally-conscious consumers. SMEs' involvement in GSCM could also encourage large companies in the supply chain to focus more on environmentally-friendly practices. The collaboration between large companies and SMEs can create a domino effect across the supply chain, stimulating the adoption of sustainable practices by all parties involved. In addition, the sustainable supply process can indirectly increase the contribution of SMEs in sustainable business, that can boost their world-class business reputation. This approach can improve brand image and appeal to consumers increasingly concerned with environmental issues. The study also found that international businesses significantly influence Green Supply Chain Management efficiency (H6). SMEs play a critical role in international logistics that affects the efficiency of GSCM. Developed countries' standards offer predictability and reliability in supply chains, instilling confidence in international buyers, enhancing product competitiveness, and enabling better compliance with global trade regulations. Adopting these standards can widen access to global markets and increase the likelihood of export success for Indonesian SMEs. The results of the inner model analysis in Table 4 accepted the last hypothesis, which means that Green Supply Chain Management efficiency affects world-class SME capabilities. GSCM represents a sustainable approach that integrates environmental principles into all stages of the supply chain, generating positive environmental benefits and impacting SMEs' competitive ability in the global market. Through efficient implementation of GSCM, SMEs can optimize the use of resources such as energy, raw materials, and water. This helps reduce environmental impact and results in higher operational efficiency.

SMEs adopting GSCM practices can reduce production costs and waste, ultimately increasing their productivity and competitiveness in international markets. In addition, GSCM also affects the quality of products and services that SMEs offer. By adopting sustainable practices, SMEs can create more environmentally-friendly products and meet the demands of consumers who are increasingly concerned about environmental issues. This can enable SMEs to enter a larger market and build a positive brand image.

Furthermore, the implementation of GSCM encourages SMEs to innovate. The challenges of creating sustainable supply chains encourage SMEs to seek creative solutions, such as developing more environmentally-friendly products, utilizing new technologies, and designing more efficient production processes. This drives the growth of SMEs and allows them to gain world-class capabilities that set them apart from competitors. In the era of globalization, SMEs with global business capabilities have a greater opportunity to participate in global supply chains and compete effectively. Therefore, implementing GSCM efficiency will allow SMEs to be environmentally sustainable and build a strong foundation to develop as world-class players. By taking advantage of the opportunities offered by GSCM, SMEs can build their reputation on the global stage, positively impact the environment, and strengthen their competitive capabilities in international markets.

Conclusion

The study concludes a significant relationship between several variables involved in supply chains and SME business efficiency. In this context, the study's findings highlight the important role of traditional logistics and its influence on inventory and internationalization. The study also shows that effective inventory management influences SMEs' ability to supply goods or services to consumers. In addition, the importance of international logistics in expanding market share and maintaining the flow of goods supply is also emphasized. The study also shows the positive contribution of GSCM in positively impacting the environmental and business capabilities of SMEs globally. Implementing GSCM will allow SMEs to reduce environmental impact, which can affect operational efficiency, brand reputation, and innovation ability. By implementing sustainable practices, SMEs can create more environmentally-friendly products, meet the demands of increasingly environmentally-conscious consumers, and build a strong foundation to compete in international markets.

The study shows that optimizing traditional logistics and implementing GSCM has significant implications for SMEs' ability to grow and compete on a global scale. In the era of globalization with increasing awareness on environmental issues, adopting efficient and sustainable practices in supply chains are becoming a key factor in building a strong and sustainable business reputation and competitive ability in international markets.

To improve operational efficiency, SMEs should consider using modern technology in their logistics systems. Implementing an advanced inventory management system, real-time shipment tracking, and automation of the ordering process will help improve operational skills and minimize human error. By maximizing logistics efficiency, SMEs can reduce shipping costs, improve delivery accuracy, and streamline inventory management processes. Investments made for efficient logistics processes will bring great benefits to SMEs. By designing and managing supply chains more effectively, SMEs can reduce shipping costs, avoid unnecessary inventory buildup, and speed up the flow of goods from suppliers to consumers. Additionally, improved logistics can enhance the customer service experience. A faster, more accurate, and more reliable delivery system will help SMEs meet customer expectations, increase satisfaction, and build long-term relationships.

SMEs should pay attention to the logistics infrastructure in destination countries in order to effectively expand their reach using efficient and reliable logistics. Choosing a location with good infrastructure in place will help overcome logistical barriers and ensure a smooth flow of goods to overseas consumers. Improving inventory management is key to maintaining a balance between supply and demand. SMEs must analyze demand trends and patterns to predict inventory needs accurately. This will help avoid excessive storage costs or stock shortages that disrupt production and delivery flows.

Integrating sustainable principles throughout the supply chain is important in building an environmentally-friendly and sustainable business image. SMEs should consider implementing GSCM, that include aspects of sustainable usage of raw materials, waste reduction, and energy efficiency. This will help reduce environmental impact and create a competitive advantage in an increasingly environmentally-conscious

market. SMEs that want to engage in international trade must strengthen their capabilities in managing international logistics, which include understanding international regulation, risk management, and global logistics supporting technologies. Collaboration with international logistics service providers can help overcome the complexities and barriers associated with cross-border trade.

To encourage SMEs to compete at the global level and integrate sustainability in their practices, the role of governments and the World Trade Organization has a significant impact. Governments can play a central role in creating an environment that supports innovation and sustainability for SMEs in logistics and supply chains in several ways. First, the government can provide fiscal incentives to encourage SMEs to adopt more sustainable logistics practices. Subsidies or tax deductions for sustainable technologies, such as efficient inventory management systems or eco-friendly packaging, can encourage SMEs to make worthwhile investments. Second, supporting a strong logistics infrastructure is key. The government can allocate resources to develop a modern and integrated logistics infrastructure, including storage facilities and efficient transportation lines. Adequate infrastructure will help reduce logistical barriers and improve the performance of SMEs in global supply chains. Additionally, the government can organize special mentoring and training programs for SMEs related to international logistics and sustainable practices. This can help SMEs understand cross-border trading procedures, risk management, and the effective integration of sustainable practices into their daily operations. It is also important for the government to monitor and evaluate the implementation of sustainable practices in SMEs. This monitoring can be done through environmental audits and compliance with international trade regulations. Through these efforts, the government can ensure that SMEs remain compliant with sustainable standards.

The World Trade Organization (WTO) also has a crucial role in providing SMEs with access to necessary information regarding trade and environmental regulations in different countries. This information can help SMEs understand the requirements and barriers associated with cross-border trade. Additionally, the WTO can be a policy mediator between SMEs and experienced international logistics service providers. This collaboration can help SMEs overcome the complexities of international logistics and improve the overall efficiency of supply chains.

A close cooperation between governments and the World Trade Organization can support SMEs to succeed in the global market. This support benefits SMEs in terms of business growth, creating a positive impact for the environment, and encouraging sustainable practices in their business operations.

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