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The Role of Supply Chain Management (SCM) in Maintaining Sino Competitive Advantage as a Global Exporter

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ABSTRACT

Objective – This study work explores how the integration of supply chain management (SCM) and the efficiency of logistics help in sustaining China as an export country due to increasing cost of production, geopolitical unpredictability, and increasing global competitiveness. It also explores the mediation effects of the relationships between SCM integration, logistics efficiency, and export competitiveness of Chinese exporters by cost reduction.
Methodology – The research design is a quantitative, explanatory research design using survey research data collected on 300 Chinese export firms in four major industries, namely electronics, textiles, machinery, and consumer goods. The collected data were collected using online and face-to-face surveys conducted with both mid- and senior-level managers of major export centers (Shanghai, Guangzhou, and Shenzhen). The direct and mediating relationships between SCM integration, the efficiency of logistics, the reduction of costs, and export competitiveness were tested using Partial Least Squares Structural Equation Modeling (PLS-SEM).
Findings – The findings indicate that SCM integration, as well as logistics efficiency, has a direct effect of great magnitude and positive significance on the export competitiveness. Integration of SCM and logistic efficiency also leads to a significant fall in the cost of the operation. Nonetheless, cost reduction is neither directly related to export competitiveness nor does it mediate the relationship between SCM integration and export competitiveness. Conversely, cost reduction has a much stronger mediating effect on the relationship between logistics efficiency and export competitiveness, and this means that cost savings through logistics efforts are still a significant transmission mechanism.
Novelty – The paper contributes to the SCM and global business literature by proving the structural change in competitiveness among the exports in China, i.e., shifting more to direct value-creation potentials entrenched in the SCM integration and performance of logistics. It offers empirical data of rare firm-level in China, which dispels the traditional belief that cost reduction is the central mediator between the SCM practices and the export success.
Keywords: *supply chain management (SCM), SCM integration, logistics efficiency, cost reduction, export competitiveness China*

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I. INTRODUCTION

China has enjoyed being the largest exporter for the last three decades due to its continuous economic growth throughout the world. The Sino exports volume has increased phenomenally by more than 14.7 percent, from $266 billion to $3.7 trillion in 2023 since its accession into the World Trade Organization (WTO) in 2001. Thus, it's making China the so-called world factory (Selvanathan et al., 2025; Hu et al., 2024). According to the research (Xue, 2023), such achievement is driven by an integration of various factors. These are the availability of a huge labor force, a strong manufacturing base, support of government policies to promote export-based businesses, and connectivity with global value chains (GVCs). In addition, China has had a competitive advantage in the past decades driven by low costs of production and economies of scale that helped it dominate the electronics, machinery, textile, and consumer goods markets to an extent (Song & Wang, 2017).

However, this conventional competitive model has complex challenges. They can be classified into global pressures and Sino oriented changes. Nowadays the world is facing value chains (GVCs) being disrupted by geopolitical instabilities such as trade wars and de-risking policies (Nima, 2025). At the same time, competitiveness is being redefined by increased demands of global clients and regulators on sustainability, resilience and ethical sourcing of the supply chain (Foerstl et al., 2010). Besides, at the domestic level, increasing labor prices in the manufacturing powerhouses have seriously undermined the classical cost benefit. As manufacturing wages have risen by 87 per cent since 2013-2023 (Huang et al., 2021). On the outside, new competitor countries such as Vietnam and Mexico are winning over low cost manufacturing investments. Consequently, these are increasing competition for Sino exporters (Anwar & Nguyen, 2010).

In this context, supply chain management (SCM) has come out as a significant driver to maintain Sino export competitiveness. Usually, SCM involves planning, coordination, and optimization of all operations (Li et al., 2021). These are concerned with sourcing, production, logistics, and distribution. Above all, it started with the procurement of raw materials and ended with the delivery to foreign markets. Literature adds that in other export economies (e.g., Germany, South Korea), modern SCM practices (e.g., digitalization, IoT-enabled tracking, and AI-driven demand forecasting) and green supply chain initiatives (e.g., renewable energy use and circular economy practices), as well as supply chain resilience (e.g., multi-sourcing and inventory optimization), have been shown to contribute to operational efficiency, cost reduction, risk reduction, and adaptation to the changing market demands (Moghaddam & Karimzadeh, 2025; Chauhan et al., 2023; Mahmud, 2025).

The Chinese government was able to identify the strategic value of SCM and inculcated it into national policies. These were included at the 14th five-year plan of logistics development (2021–2025) and the digital China program. Such policies focus on infrastructure improvement of supply chains, digital transformation, and development of green and resilient supply chains to facilitate high-quality exportation (Xiao, 2024; Wang et al., 2025). Nevertheless, SCM practices remain archaic and fragmented and are still used by a large portion of Chinese export enterprises. Especially small and medium-sized enterprises (SMEs), which have 60 percent of the exports in China Since 42 percent of Chinese exporting SMEs do not have real-time

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inventory tracking systems. While 35 percent have no formal risk management procedures against supply chain disruptions.

As China day by day moves on to become not only a low-cost supplier of goods but also a high-quality, high-value supplier globally (Martek & Chen, 2016). Besides, the role of its SCM in maintaining and improving its competitive advantage in the world market has taken on a more significant role. Therefore, knowing how certain SCM dimensions, like efficiency, resilience, sustainability, and digitalization, affect the export performance (Atieh Ali et al., 2024; Tukamuhabwa et al., 2021) In addition, how they interplay with contextual variables, including enterprise size and type of industry, has become an imperative academic and practical issue.

Most of the past research (Li et al., 2020; Zhang & Wang, 2021) conducted on the export competitiveness of China centers on the conventional aspects. These aspects are mainly regarding labor costs, the exchange rates, and policy facilitation. Although certain studies recognize the role of SCM, they tend to separate the individual elements, including logistics efficiency or green practices. As opposed to considering SCM as a multi-dimensional construct (efficiency, resilience, sustainability, digitalization) that has a collective impact on competitive advantage. This is too narrow to capture the synergistic impact of integrated SCM practices.

Furthermore, the current body of empirical studies on SCM and export performance is dominated by Western or Southeast Asian economies such as Thailand and Malaysia. Whereas supply chain structures and institutional settings vary considerably in comparison with that of China (Chen et al., 2022; Rajput et al., 2023). The peculiarities of China, which are a large domestic market and an industrial policy driven by the state. The integration into the GVCs as a manufacturer and consumer implies that the relationship between SCM and export competitiveness can work in a different way. But there are massive deficiencies of quantitative studies that can authenticate this relationship based on data of Chinese export enterprises.

Although Chinese export businesses are diversified into SMEs and large companies. Such diverse goes through different industries like as electronics, textiles, machinery, etc. They influence Chinese SCM abilities and the contribution of SCM to their competitiveness. To illustrate, large enterprises might be able to allocate more resources towards the digital SCM tools. Whereas SMEs can focus on cost-efficient SCM activities. Nevertheless, most of the research that has been done so far has not delved into these heterogeneous impacts in China.

Moreover, the global export markets are becoming more resilient regarding geopolitical and environmental shocks and sustainable for achieving carbon reduction and ethical standards. However, the majority of research on the SCM in China centers on the traditional indicators of efficiency (Aubard & Julien, 2024).

Therefore, considering the above literatures, this present study mainly intends to address the abovementioned holes and seek to find the answer to the question of whether Chinese SCM plays a role in keeping at a competitive edge as a global exporter. To investigate the influence of SCM integration and logistic efficiency on the export competitiveness of the Sino exporters is another aim of the study. Additionally, it will examine any mediation effect by cost reduction on the relationship between logistics efficiency, SCM integration, and export competitiveness.

This research work expands the existing body of scholarly literature by establishing a single framework integrating several dimensions of SCM efficiency, resilience, sustainability, and digitalization. That assists in describing export competitive advantage (Keskin et al., 2021). In addition, such research addresses the changing competitive environment of exporters as per developing global trends in trade. It offers a theoretical basis for how the future research should focus on how SCM can suit these trends, especially in the emerging economies. For export businesses, in particular, SMEs that cannot cope with cost challenges and risks in the market (Catanzaro & Teyssier, 2021) this research provides practical information on the

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dimensions of SCM that should be prioritized. To illustrate, when the results prove that digitalization and resilience have a good effect on export margins, SMEs can invest scarce resources in acquiring primitive digital monitoring devices or diversifying the supplier.

Meanwhile, large organizations might enjoy the opportunity to invest in green SCM to comply with the international sustainability requirements and be able to enter high-value markets. Although the Sino government ensured that SCM upgrading is a national priority, existing policies tend to be non-empirical in targeting particular enterprises or industries. The results of the study will assist policymakers in coming up with more beneficial policies, i.e., subsidies on the adoption of SME digital SCM, tax reduction on green supply chains.

II. LITERATURE REVIEW

SCM Integration and Logistics Efficiency: Foundational Actors of SC Performance

Supply chain management (SCM) has developed into a strategic source of competitive advantage for the export-oriented economy (Baddar et al., 2025). While SCM integration and logistics efficiency defined two dimensions of this economy (Christopher et al., 2016). SCM integration is a process of integrating the alignment of processes, information, and resources among supply chain partners. For example, suppliers, manufacturers, distributors, and foreign buyers, to remove bottlenecks and become responsive (Flynn et al., 2010). For global export contexts, integration transparency developed firms to coordinate production to the demand in other countries. It even diminishes lead-time variability and reduces the risk of cross-border transactions such as tariff changes, customs delays, etc. In the case of Chinese exporters involved in complex global value chains (GVC), the integration of SCM becomes critical. According to the research (Xu & Long, 2021, the companies with an integrated supply chain could use the advantage of scale when manufacturing in China and adjusting to various markets.

Efficiency in logistics, which refers to the efficiency of transportation, warehousing, inventory, and order fulfillment operations. In addition, SCM integration makes sure that the physical flow of objects is matched with coordinated planning. Efficient logistics will reduce the time in delivery, cause less damage to goods, and make optimal use of resources. Consequently, all of these have a direct impact on customer satisfaction in the international markets. The logistics infrastructure investments by China in high-speed rail, coastal ports, and cross-border e-commerce hubs. Although these are prepared based on the better logistics performance, still uneven distributions are available in both regions and the size of enterprises. Research identified that for Sino exporters' efficiency in logistics is a break-or-make issue for the competition with the low-cost competitors like India and Vietnam. Because fast and reliable logistics can balance the thin cost margins (Schmidt et al., 2023). The empirical results on the Southeast Asian exporters confirmed that the logistics efficiency is linked to the increased export volume and the market growth, which demonstrates the universal applicability to the export performance (Chen et al., 2022).

Although modern SCM includes such dimensions as resilience, sustainability, and digitalization. But the existing work centers on SCM integration and operational efficiency of logistics. As the required basic operational capabilities directly involved with costs and service performance of SCM. These regional dimensions of efficiency are the key actors in which the SCM practices have the quickest effect on the export competitiveness of the Sino enterprises. All these are still navigating towards abandoning pure cost leadership. The further contributions of such higher dimensions as sustainability will become an obligatory direction of future research when the Chinese exporters go up the value chain.

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Intermediate Position of Cost Reduction

Cost reduction is defined as the fundamental mechanism by which SCM practices can be turned into a competitive advantage. In the case of China, whose previous export success has been historically based on low costs of production and operation. For instance, SCM integration leads to cost reduction by removing unnecessary processes, enhancing the accuracy of demand forecasting, and utilizing economies of scale through joint sourcing (Flynn et al., 2010). For example, integrated SCM helps Chinese manufacturers to share inventory information with their suppliers. This enabled preventing overstock and related holding costs, and joint planning prevents production waste (Yu et al., 2021). Likewise, logistics efficiency directly reduces the costs by vehicle optimization, less fuel use, and warehouse optimization. This study demonstrates that the effectiveness of the logistics can reduce costs for Sino SMEs involved in exports by 15-20 percent.

Although the cost-leadership judgement is well-firmed. Based on this, recent studies indicate for more developed economies that are integrated fragment of complex GVCs. As a result, SCM benefits can also directly transform into competitiveness due to non-cost reasons. Integrated SCM has the potential to make firms more responsive to unstable global. It increases quality consistency through enhanced ability to communicate with suppliers, and establish competitive advantages (Efrat et al., 2017; Abdallah et al., 2021). This recommends of a possibility of a dichotomy wherein the route between SCM and competitiveness is possibly different in the case of relational integration and physical logistics efficiency.

Cost reduction mediation in SCM-performance relations is already well-documented in the global literature. Golicic and Smith (2013) stated that cost savings to ensure better supply chain practices release funds to invest in other areas of competition. For the Chinese exporters struggling with the increasing labor and raw material costs, cost reduction through the SCM integration and the efficiency of logistics is not just a competitive edge. But it is a matter of survival. (Zhang & Wang, 2021). Nevertheless, current literature has tended to consider the cost-cutting as an end product instead of an intermediate. This has overlooked the fact that cost sensitivity is an important global customer value. The role value-added aspects play in mediating the relationship between SCM practices and export competitiveness in the Chinese context is unique, as it is still highly important for global customers.

SCM Performance, Cost Reduction, and Export Competitiveness

Export competitiveness for Chinese exporters is denoted as the firm's ability to compete with its competitors in the world markets. This competition is in terms of cost, quality, or differentiation. Classical studies associate SCM with competitive advantage focused on cost leadership. Suppose cost reduction allows companies to achieve more competitive prices, gain market share, and sustain an adequate profit margin (Efrat et al., 2017; Arianpoor & Moghaddampoor, 2024).

Furthermore, direct cost implications, the SCM integration, and the logistics efficiency are strengthening the competitiveness of the exports. While indirectly, such reduction is due to the possibility of firms satisfying the requirements of the world market better. As an example, the savings on cost due to effective logistics may be reinvested in enhancing product quality or increasing distribution channels. It even integrated supply chains that may help respond more quickly to market trends to strengthen customer retention and brand image (Abdallah et al., 2021; Ding et al., 2023).

The empirical research of Chinese electronics exporters proves that SCM integration results in cost reduction. It consequently increases the profit margins of exports and increases the market share (Sakong et al., 2023). Nevertheless, there are still gaps in the comprehension of this mediated relationship in the context of the diverse Chinese sector of export. So the role of cost reduction in mediating an export relationship might be stronger in them than in large enterprises, which have the resources to invest in value-added competitive strategies (Zhang & Wang, 2021).

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Contextual Relevance to the Chinese Exporting Industry

The institutional and market environment in China is unique and increases the significance of the SCM-reduction-export competitiveness framework. Being one of the key participants in GVCs, Chinese exporters need to synchronize with other partners all over the world. Thus SCM integration is essential to correspond to the international norms and buyers' expectations (Chen et al., 2022). In the meantime, the geographical size of China, where manufacturing plants are located close to the coastline, and the global distribution of export markets are the main factors in the logistics efficiency. It defines the control of costs and the dependability of barges. Moreover, the increasing geopolitical tension and pressure to de-risk supply chains are increasing the pressure on effective resilient supply chains to remain competitive in exports (Rajput et al., 2023).

Despite the circumstances, the present literature mostly highlighted the tendency to extrapolate the results of the Western or Southeast Asian environment. Seldom explores the role of state-led industrial policy, huge internal market, and sectors of various exports in China (Yu et al., 2021). For instance, Chinese administration through its "14th Five-Year Plan for Logistics Development" emphasized SCM upgradation. Although there are still limited empirical studies to determine how the improvements in policy will lead to cost reduction and export performance in Chinese enterprises.

However, following the above review of the past literatures this study poses some relevant hypotheses:
Hypothesis 1: SCM integration significantly impacts on export competitiveness of the Chinese exporters;
Hypothesis 2: Logistics efficiency positively influence on the Chinese export competitiveness in terms of export;
Hypothesis 3: SCM integration has positive effect on cost reduction;
Hypothesis 4: Logistics efficiency has positive effect on the cost reduction;
Hypothesis 5: Cost reduction can positively influence to the export competitiveness;
Hypothesis 6: Cost reduction positively mediates the relationship between SCM integration and export competitiveness; and
Hypothesis 7: Cost reduction mediates the relationship of logistics efficiency and export competitiveness.

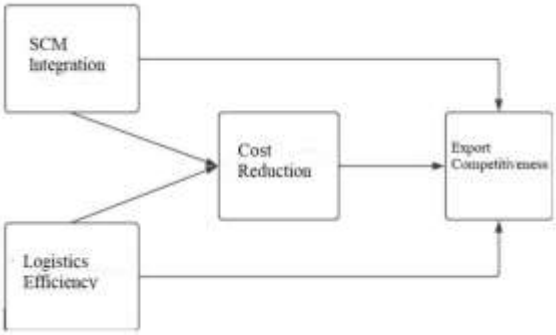

Figure 1 Study Model (Adopted from the Relevant Content Analysis)

III. METHODOLOGY

Measurement Items and Data Collection

Each constructs are operationalized with validated scales based on the literature and adjusted to the China-based export setting and also pre-tested. All items are measured on a 5-point Likert scale (1 = "Strongly Disagree" to 5 = "Strongly Agree") and measured continuous or ratio scale where required. For

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instance, the four items used to assess the SCM integration (SCMI), the four indicators employed to measure logistics efficiency (LE), the impact of cost reduction (CR) is analyzed using four separate items and the measurement of the export competitiveness (EC) relied on a set of five items documented in articles by Flynn et al. (2010), Yu et al. (2020), Rajput et al. (2023), Ding et al. (2023), Zhang and Wang (2021), and Sakong et al. (2023). Table 1 exhibited key measurement items of the study.

Table 1 Key Measurement Items Determination

Variable Type	Variable	Measurement Items	Measurement Scale
Independent	SCM Integration	Firms' plans strategically with key suppliers	Likert Scale
	Logistics Efficiency	Loading/unloading times maximized shipment	Ratio Scale
Control	Cost Reduction	Overall logistic expenses reduced past two years	Ratio Scale
Dependent	Export Effectiveness	Firms have a better rate of export growth than key competitors	Likert Scale

The data collection has been completed for this study from four key sectors of China including electronics, textiles, machinery and consumer goods industries. Because these export enterprises that have an annual export turnover of 5 million RMB in these Chinese economy (Sheng et al., 2023). Reasons behind to choose such industries as they comprise the heart of the export economy of China and have SCM problems. Among these the electronics industry has to deal with fluctuating demand and brief product life cycle in China. Hence, this requires very responsive and integrated supply chains. Further, textiles are subjected to sustainable sourcing and quick replenishment. Additionally, Sino has been exporting machinery with heavy transportation, parts of after sales services, and so forth. Moreover, the competition between consumer goods is based on price, speed-to-market, and differentiation. Therefore, the SCM in these different sectors offers a clear picture of how it has helped Sino to remain competitive in exports (Li et al., 2020; Berger & Martin, 2013; Gu et al., 2016). Even above industries cover 78 percent of the total export in China.

A stratified purposive sampling technique was used to select the firms. The data gathered from June to September 2025, involving distribution of 450 structured questionnaires through online and on-site surveys. Among these some 300 were validated which accepted rate is 66.67 percent. The online survey administered via various industry associations particularly China Chamber of International Commerce, and China National Textile and Apparel Council. To make sure that the data is secure and accessible, the surveys served in Wenjuanxing (a reliable Chinese survey platform).

In contrast, on-site structured questionnaire survey conducted at three important export hubs including Shanghai, Guangzhou, and Shenzhen of China to SMEs. These hubs are contributed above sixty percent exports of the country. The targeted participants were mid-senior managers who have direct experience about SCM practices, logistics processes, and the export performance of their respective firms. Before the survey a pre-test is done involving twenty managers (at least five persons of each industry) in order to pre-pilot wording, remove ambiguity and scale clarity.

Statistical Method and Structural Model

Researchers used Partial Least Squares Structural Equation Modelling (PLS-SEM version 4.1.0.0) in this study, which is the leading statistical technique to inspect the latent variable model. Major advantage of using PLS-SEM is its capability to perform structural and confirmatory inspection at the similar period (Hair et al., 2019). Likewise, Davari and Rezazadeh (2013) suggested that this method is suitable for predicting a group of equations simultaneously for the proposed research model and develops the relationship between variables. This study uses PLS-SEM as a verified reporting approach to conduct robust analysis in the management sciences domain. SEM is a second-generation multifaceted data

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investigation method that examines theoretically developed linear and additive casual relationships. It allows researchers to examine the relationships between constructs.

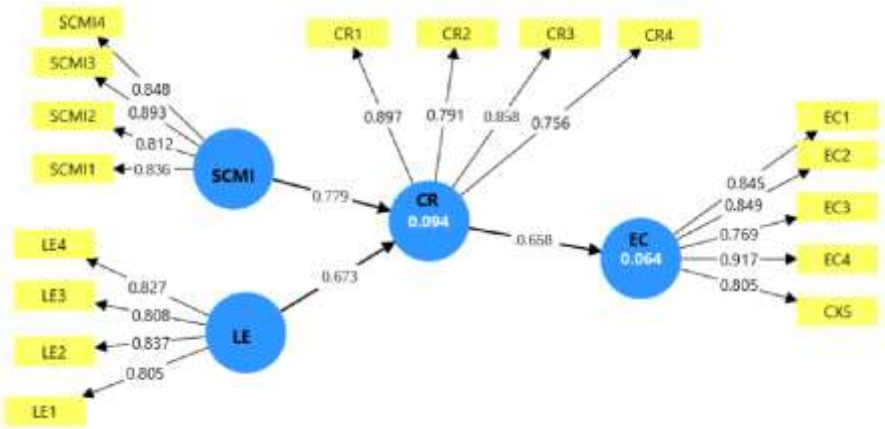

Figure 2 Statistical Measurement Model

Table 2 Reliability Validity

Construct	Items	Loadings	CA	CR	AVE
SCM Integration	SCMI1	0.836	0.931	0.942	0.624
	SCMI2	0.812			
	SCMI3	0.893			
	SCMI4	0.848			
Logistics Efficiency	LE1	0.805	0.860	0.899	0.642
	LE2	0.837			
	LE3	0.808			
	LE4	0.827			
Cost Reduction	CR1	0.897	0.881	0.914	0.680
	CR2	0.791			
	CR3	0.858			
	CR4	0.756			
Export Competitiveness	EC1	0.845	0.930	0.942	0.670
	EC2	0.849			
	EC3	0.769			
	EC4	0.917			
	EC5	0.805			

This study analyzed the measurement model approach to assess the reliability. To measure the reliability, we have used Cronbach alpha (CA), composite reliability (CR) and convergent validity through Average Variance Extract (AVE) values. The results for CA, CR and AVE are presented in Table 2.

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According to Hair and Ringle (2011), CA and CR values should be higher than 0.70, and AVE values should be greater than 0.50 (Henseler & Hubona, 2016).

According to the Fornell Larcker criterion triangle (bold values on the diagonal) demonstrates the square root of the Average Variance Extracted (AVE) of each construct. In order to meet the requirement, these values are larger than the correlations between the construct and any other construct within the same row and column of Table 3. The findings verify that there is discriminant validity because the square root of AVE of each construct is higher than its correlation with others. In addition, the Heterotrait-Monotrait (HTMT) ratio of correlations are shown in the upper triangle. While a value smaller than 0.90 in HTMT depicts that there is enough discriminant validity (Henseler et al., 2015). The values of all the HTMT in our model are lower than this mentioned threshold which again supports the fact that the constructs are different.

Table 3 Discriminant validity (Fornell-Larcker Criterion and HTMT Ratio (*)

	SCMI	**LE**	**CR**	**EC**
SCMI	0.789	0.777*	0.755*	0.722*
LE	0.782	0.801	0.739*	0.746*
CR	0.681	0.744	0.825	0.775*
EC	0.671	0.670	0.803	0.818

The values of R^2 and Adjusted R^2 in the table 4 indicate the strength of explanatory ability by the model, and the Export Competitiveness (EC) construct has great explanatory strength ($R^2 = 0.674$). The Variance Inflation Factor (VIF) values are below the general cutoff of 5 which implies that there is serious multicollinearity absent. Moreover, our calculated model become good fit according to the suggested value. While the both effect size ($f^2 = 0.043$) and the value of Standardized Root Mean Square Residual (SRMR = 0.077) below the recommended value 0.08.

Table 4 Saturated Model Results

Construct	**R^2**	**Adj. R^2**	**VIF**	**f^2**	**SRMR**
SCMI	0.612	0.610	2.730	0.043	0.077
LE	0.464	0.462	2.377		
EC	0.674	0.671	2.279		

The structural model intends to clarify the influences between latent variables. These effects, while recognized, may or may not be significant. To assess these connections, this study assessed the coefficients using bootstrapping sub-sampler technique. Here generated 4600 subsamples through PLS-SEM and present the results which exhibited in Table 5. The outcomes from the structural model statistical assessment provide insightful findings on the relations between several organizational variables.

Table 5 details the outcomes of several hypotheses, each examining distinct aspects of organizational dynamics. Starting with the direct relationships, Hypothesis 1 investigates the impact of SCM Integration (SCMI) on Export Competitiveness. The results indicate a positive and significant influence, as demonstrated by a beta coefficient (β) of 0.219. This is further substantiated by a robust t-statistic of 3.662 and leading to the statistically acceptance of this hypothesis. For hypothesis 2, which examines the relationship between Logistics Efficiency and Export Competitiveness, the findings are quite compelling. A high β of 0.673 and an impressive t-statistic of 20.418 strongly affirm the significant positive effect of SCMI on EC, reinforcing the acceptance of this hypothesis. Similarly, hypothesis 3, exploring the effect of

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SCMI Cost Reduction (CR), shows a β of 0.765. However, the higher t-statistic of 34.648 suggest that this relationship is statistically significant, resulting in the accepted of the hypothesis.

Table 5 Structural Model Results

Hypothesis	Relationship	Beta	Mean	S.D.	T-Value	p-Value	Decision
Direct Effect							
H1	SCMI→EC	0.219	0.214	0.053	3.662	0.000	Significant
H2	LE→EC	0.673	0.683	0.034	20.418	0.000	Significant
H3	SCMI→CR	0.765	0.783	0.023	34.646	0.000	Significant
H4	LE→CR	0.625	0.635	0.060	10.637	0.000	Significant
H5	CR→EC	0.027	0.031	0.073	0.408	0.344	Insignificant
Mediating Effect							
H6	SCMI→CR→EC	0.025	0.024	0.057	0.403	0.345	Insignificant
H7	LE→CR→EC	0.457	0.433	0.045	9.573	0.000	Significant

Moving to hypothesis 4, which focuses on the influence of LE on CR, the table presents a β of 0.625, a t-statistic of 10.637. These figures collectively indicate a strong and significant positive effect, leading to the acceptance of the hypothesis. In contrast, hypothesis 5, assessing the impact of CR on EC, is rejected based on an insignificant β value of 0.027, with lowest t-statistic of 0.408. The analysis also includes mediating relationships, where hypothesis 6 demonstrates the mediating effect of CR in the relationship between SCMI and EC, with a substantial β of 0.025, a t-statistic of 0.403, rejecting the hypothesis. On the other hand, hypothesis 7 explores the indirect effect of LE on EC, mediated by CR. This relationship is accepted, evidenced by a β of 0.457, a t-statistic of 9.573. This suggests a significant mediating role of CR. However, above these results from the structural model highlight the significant roles of KMP in influencing firm performance, either directly or indirectly through mediation. The robust statistical evidence, characterized by substantial beta coefficients, strong t-statistics, and supportive confidence intervals, underscores the importance of these organizational factors in the studied context.

IV. RESULTS AND DISCUSSION

The results of this paper strongly support empirical evidence that the Supply Chain Management (SCM) practices are key pillars of maintaining the export competitiveness of China in a new era that is characterized by increased costs, geopolitical fragmentation, and market demand. The considerable good associations achieved with SCM Integration (H1) and Logistics Efficiency (H2) with the Export Competitiveness highlight an idea shift in the origins of Sino competitive advantage which results supported by Rajput et al. (2023) and Christopher et al. (2016). This shifts the paradigm of historically passive dependency on fixed factors such as cheap labor into active and strategic development of dynamic capabilities that lie within the supply chain. The unusually high value of the path coefficient of logistics efficiency (β = 0.673) shows that within the framework of the large geography of China and the multifaceted integration into global value chains (GVCs), the physical organization of goods flow cannot be considered a supporting role but rather a major competitive weapon. It balances the shrinking cost margins by ensuring reliability and speed, which are gaining more importance among buyers in the world as compared to low prices.

Journal of Business, Management, and Social Studies
Vol. 5, No. 3, August 2025, pp. 123-137
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Furthermore, the largely greater impact of Logistics Efficiency (β = 0.673) than of SCM Integration (β = 0.219) is a very important observation. It emphasizes the fact that in the current landscape transporting products safely and promptly throughout the China as well as world markets. This must be a short term visible effect of the performance of the logistics on the delivery reliability and lead times, which are most important to the export customers.

The mediation hypothesis outcomes, however, are an indication of a more interesting and revealing narrative regarding the changing face of the export competitiveness. Although both SCM Integration and Logistics Efficiency exhibited significant direct impacts on Cost Reduction (H3, H4). However, a two-way linkage between Cost Reduction and Export Competitiveness (H5) found insignificant statistically. While the past study by Flynn et al. (2010) argued with our outcomes.

In addition, the mediating position of cost reduction between SCM integration and competitiveness (H6) was also found insignificant. This is a pivotal finding. It implies that to modern Chinese exporters, cost reduction, though a valuable product of excellent SCM, no longer plays the role of a sufficient mediator of competitive advantage in the global markets. Although, Li et al. (2020) claimed that integration of SCM and export effectiveness through cost reduction enabled Chinese exporters averting overstock and avoids manufacturing waste. Previously the SCM improvement had been a direct source of low-cost leadership strategy. Today competitive advantages seem more direct and value-driven: integrated SCM and effective logistics do create more competitiveness by increasing quality consistency, responsiveness to fluctuating demand faster, adherence to sustainability standards, and development of buyer trust through reliability, all of which enable firms to compete on value propositions beyond the price.

On the other hand, the high degree of complete mediation of cost reduction between logistics efficiency and export competitiveness (H7) has a critical contingency. This implies that the savings in cost that logistics efficiency creates are important transmission channels to ensure that it becomes translated into high-performance export. The dichotomy is explainable alongside the asset specificity and visibility. Investments in logistics (in ports, tracking technology, and fleet management) are extremely concrete, and their efficiency benefits could be easily seen in direct and measurable cost. However, SCM integration incorporates process alignment and information sharing as well as relational investments with partners. Its advantages are less concrete, such as increased flexibility, reduction of risks, and innovation, which are translated into competitiveness via channels less directly associated with basic cost accounting.

These relationships are also contextualized in the present study against the Chinese institutional environment that is unique. The good performance confirms that the macro-level competitive demands are in line with state-led initiatives such as the Digital China program and the 14th Five-Year Plan of logistics. The high impact of the SCM integration is an indication of the effectiveness of the policies that foster greater integration into GVCs, where assembly is replaced by more value-added coordination functions.

V. CONCLUSION

This study has a number of contributions to the theory of supply chain and international business. First, it challenges and refines the assumed centrality of cost mediation in the SCM-competitiveness relationship that is helpful in emerging economies. It offers the empirical data that with maturation of the economy and the change in location in the GVCs. The routes to competitive advantage developed out of the SCM into less indirect and more direct, value-creation pathways. This leads to revision of theoretical models which majorly analyze SCM as a cost-based approach. Secondly, it reinforces the contingency view by confirming that the mechanism of SCM effect may be different even across the various levels of SCM itself (integration vs. logistical efficiency). Thirdly, the research contributes greatly to the empirical environment, by

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experimenting and confirming already known theories on SCM within the under-studied, yet highly important, environment of China.

Moreover, the results provide a good strategic road map to the Sino exporters specially SMEs. Usually, exporters ought to use integration to make their demands more sensitive. For that need to design products in collaboration with buyers and to report on their sustainable activities in a transparent way. In that case our findings will help them (exporters) achieve the premium positioning and win loyalty among buyers in the major markets such as the EU and North American markets. This research also justifies the Sino national strategy of both SCM and logistics policies. It also directly addresses the gap of fragmentation that is found in the introduction.

The cross-sectional research design used in the current research work. Consequently, future research should employ longitudinal panel data methods to establish robust causal inferences and examine how advancements in SCM drive transformations in export competitiveness over time. Although this analysis was on integration and efficiency. Therefore, the effects of contemporary dimensions of SCM mentioned in the introduction on resilience and sustainability issues of multi-sourcing and inventory buffering should be formally incorporated and compared in future frameworks. In addition, whether exposure to geopolitical risks with major trading partners leads to higher or lower integration needs to be investigated as a potential moderator.

This study aimed at exploring how supply chain management can be used to ensure that China continues to enjoy competitive advantage as a global exporter despite the dynamic nature of the trade environment. The results provide an evidence-based and clear conclusion: SCM has actually transformed into a back office operation issue into a frontline strategic necessity of the Chinese export competitiveness. Nevertheless, its contribution has radically changed in nature. The research verifies that high SCM Integration and Logistics Efficiency are direct, potent forces of export competitiveness.

It is, however, very essential to note that the old process, of SCM encouraging competitiveness by increasing costs, is no longer the main channel of action in the aggregate. SMC Integration instead seems to develop competitiveness due to an increased level of responsiveness, quality, and alignment to the market. Logistics Efficiency, though developing direct competitive advantage as well, heavily depends on whether it can translate into export success due to the cost reduction abilities. The consequences are far-reaching. To overcome the pressures of increasing domestic costs, geopolitical de-risking, and requirements of sustainable trade, China needs to unstoppably be committed to developing world-class, digital-enabled, and resilient supply chains.

Above all the results imply interventions to be applied by policymakers. Public investments in intermodal connectivity and digital port infrastructure are important to maximize the direct competitive advantage of logistics. The government can initiate subsidies or tax cuts on the use of cloud-based SCM platforms to support integration with international partners to ensure the value-creation advantages of SCM integration, particularly among SMEs. Moreover, the incentives offered by the certification of green logistics may be used to serve sustainability needs and enhance the efficiency of operations at the same time, building a two-fold competitive advantage.

REFERENCES

Abdallah, A.B., Rawadiah, O.M., Al-Byati, W. & Alhyari, S. (2021). Supply chain integration and export performance: The mediating role of supply chain performance. International Journal of Productivity and Performance Management, 70(7), 1907–1929, doi: https://doi.org/10.1108/IJPPM-02-2021-0076

Anwar, S., & Nguyen, L. P. (2010). Foreign direct investment and economic growth in Vietnam. Asia Pacific Business Review, 16(1–2), 183–202. https://doi.org/10.1080/10438590802511031

Journal of Business, Management, and Social Studies
Vol. 5, No. 3, August 2025, pp. 123-137
e-ISSN 2798-6209
DOI: https://doi.org/10.53748/jbms.v5i3.146
Available online at www.jbms.site

Arianpoor, A., & Moghaddampoor, B. (2024). The impact of cost leadership strategy and differentiation strategy on supply chain management efficiency. Journal of General Management, 0(0). https://doi.org/10.1177/03063070241285145

Atieh Ali, A. A., Sharabati, A.-A. A., Allahham, M., & Nasereddin, A. Y. (2024). The Relationship between Supply Chain Resilience and Digital Supply Chain and the Impact on Sustainability: Supply Chain Dynamism as a Moderator. Sustainability, 16(7), 3082. https://doi.org/10.3390/su16073082

Aubard, A., & Julien, G. (2024). Article: Redefining Global Trade: The interplay of geopolitics, economic resilience, and sustainability? Global Trade and Customs Journal, 19(11/12), 676–688. https://doi.org/10.54648/gtcj2024077

Baddar, Y., Yosef, F. A., & Jum'a, L. (2025). Incorporating Supply Chain Strategies into Organizational Excellence: The Moderating Role of Supply Chain Dynamism in an Export Sector of an Emerging Economy. Administrative Sciences, 15(4), 132. https://doi.org/10.3390/admsci15040132

Berger, B., & Martin, R. F. (2013). The Chinese Export Boom: An examination of the detailed trade data. China & World Economy, 21(1), 64–90. https://doi.org/10.1111/j.1749-124x.2013.12009.x

Catanzaro, A. & Teyssier, C. (2021). Export promotion programs, export capabilities, and risk management practices of internationalized SMEs. Small Business Economics, 57, 1479–1503. https://doi.org/10.1007/s11187-020-00358-4

Chauhan, S., Singh, R., Gehlot, A., Akram, S. V., Twala, B., & Priyadarshi, N. (2023). Digitalization of Supply Chain Management with Industry 4.0 Enabling Technologies: A Sustainable Perspective. Processes, 11(1), 96. https://doi.org/10.3390/pr11010096

Christopher, M., Harrison, A., & Van Hoek, R. (2016). Creating the agile Supply Chain: Issues and challenges. In Palgrave Macmillan UK eBooks (pp. 61–68). https://doi.org/10.1057/9781137541253_6

Chen, L., Lee, H. L., & Tang, C. S. (2022). Supply chain fairness. Production and Operations Management, 31(12), 4304–4318. https://doi.org/10.1111/poms.13849

Ding, T., Zhu, W., & Zhao, M. (2023). Does cross-border logistics performance contribute to export competitiveness? Evidence from China based on the iceberg transport cost model. Sustainability, 15(1), 490. https://doi.org/10.3390/su15010490

Efrat, K., Hughes, P., Nemkova, E., Souchon, A. L., & Sy-Changco, J. (2017). Leveraging of Dynamic export capabilities for competitive advantage and performance consequences: Evidence from China. Journal of Business Research, 84, 114–124. https://doi.org/10.1016/j.jbusres.2017.11.018

Flynn, B.B., Huo, B. and Zhao, X. (2010) The Impact of Supply Chain Integration on Performance: A Contingency and Configuration Approach. Journal of Operations Management, 28, 58-71. http://dx.doi.org/10.1016/j.jom.2009.06.001

Foerstl, K., Reuter, C., Hartmann, E., & Blome, C. (2010). Managing supplier sustainability risks in a dynamically changing environment—Sustainable supplier management in the chemical industry. Journal of Purchasing and Supply Management, 16(2), 118–130. https://doi.org/10.1016/j.pursup.2010.03.011

Journal of Business, Management, and Social Studies
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DOI: https://doi.org/10.53748/jbms.v5i3.146
Available online at www.jbms.site

Gu, Y., Wu, Y., Xu, M., Mu, X., & Zuo, T. (2016). Waste electrical and electronic equipment (WEEE) recycling for a sustainable resource supply in the electronics industry in China. Journal of Cleaner Production, 127, 331–338. https://doi.org/10.1016/j.jclepro.2016.04.041

Hu, G., Zhang, X., & Zhu, T. (2024). A Catalyst for China's High-Tech Export Competitiveness: Perspective of Technological Innovation. Sustainability, 16(5), 2169. https://doi.org/10.3390/su16052169

Huang, Y., Sheng, L., & Wang, G. (2021). How did rising labor costs erode China's global advantage? Journal of Economic Behavior & Organization, 183, 632–653. https://doi.org/10.1016/j.jebo.2021.01.019

Keskin, H., Ayar-Şentürk, H., Tatoglu, E., Gölgeci, I., Kalaycioglu, O. & Etlioglu, H.T. (2021). The simultaneous effect of firm capabilities and competitive strategies on export performance: the role of competitive advantages and competitive intensity. International Marketing Review, 38(6), 1242–1266, doi: https://doi.org/10.1108/IMR-09-2019-0227

Li, X., Wang, L., & Ding, X. (2020). Textile supply chain waste management in China. Journal of Cleaner Production, 289, 125147. https://doi.org/10.1016/j.jclepro.2020.125147

Li, Q., Yan, R., Zhang, L., & Yan, B. (2021). Empirical study on improving international dry port competitiveness based on logistics supply chain integration: evidence from China. The International Journal of Logistics Management, 33(3), 1040–1068. https://doi.org/10.1108/ijlm-06-2020-0256

Li, E., Ma, Y., Wang, Y., Chen, Y., & Niu, B. (2022). Competition among cities for export trade brings diversification: The experience of China's urban export trade development. PLoS ONE, 17(9), e0271239.

Mahmud, D. (2025). An Iot-Enabled Decision Support System for Circular Economy Business Models: A Review of Economic Efficiency and Sustainability Outcomes. American Journal of Scholarly Research and Innovation, 4(01), 250-286.

Martek, I. & Chen, C. (2016). Value chain supply procurement strategies in international construction: Cases of foreign constructors in China. Management Decision, 54(2): 501–521, doi: https://doi.org/10.1108/MD-01-2015-0018

Moghaddam, G.K. & Karimzadeh, M. (2025). AI-Driven Digital Transformation and Sustainable Logistics: Innovations in Global Supply Chain Management, PREPRINT (Version1) [https://doi.org/10.21203/rs.3.rs-6086101/v1]

Nima, T.H. (2025). Geopolitical Turmoil, Supply-Chain Realignment, and Inflation: Commodity Shocks, Trade Fragmentation, and Policy Responses. Available at SSRN: https://ssrn.com/abstract=5448354 or http://dx.doi.org/10.2139/ssrn.5448354

Rajput, S. D., Jadhav, A., Gadge, J., Tilani, D., & Dalgade, V. (2023). Agricultural food supply chain traceability using blockchain. In Proceedings of the 4th International Conference on Innovative Trends in Information Technology (ICITIIT), Kottayam, India, 11–12 February 2023 (pp. 1–6). IEEE. https://doi.org/10.1109/ICITIIT57246.2023.10068564

Sakong, M., Kim, D., Kim, J. D., & Han, J. M. (2023). A study of supply chains of Korean firms in China based on business survey data (2022). SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4375297

Journal of Business, Management, and Social Studies
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DOI: https://doi.org/10.53748/jbms.v5i3.146
Available online at www.jbms.site

Selvanathan, S., Jayasinghe, M., & Selvanathan, E. A. (2025). Trade and economic integration. In M. Hossain, E. A. Selvanathan, M. Jayasinghe, & R. Kathuria (Eds.), South Asian economic development in the era of global turbulence (3rd ed.)

Sheng, X., Chen, L., Yuan, X., Tang, Y., Yuan, Q., Chen, R., Wang, Q., Ma, Q., Zuo, J., & Liu, H. (2023). Green supply chain management for a more sustainable manufacturing industry in China: a critical review. Environment, Development and Sustainability, 25(2), 1151–1183. https://doi.org/10.1007/s10668-022-02109-9.

Song, M., & Wang, S. (2017). Market competition, green technology progress and comparative advantages in China. Management Decision, 56(1), 188–203. https://doi.org/10.1108/md-04-2017-0375

Tukamuhabwa, B., Mutebi, H., & Kyomuhendo, R. (2021). Competitive advantage in SMEs: effect of supply chain management practices, logistics capabilities and logistics integration in a developing country. Journal of Business and Socio-economic Development, 3(4), 353–371. https://doi.org/10.1108/jbsed-04-2021-0051.

Wang, L., Liu, R., Jin, S., & Li, C. (2025). Measurement and temporal and spatial evolution of green behavior of Chinese enterprises. International Journal of Environmental Research, 19(3). https://doi.org/10.1007/s41742-025-00761-3

Xiao, J. (2024). With a Safe and Stable Industrial and Supply Chain, New Initiatives and Trends in China's Logistics Development. In: Li, X., Wu, X., Liu, B., Wang, L., Liu, J. (eds) Contemporary Logistics in China. Current Chinese Economic Report Series. Springer, Singapore. https://doi.org/10.1007/978-981-99-6248-8_9

Xue, Y. (2023). Exploring the factors influencing China's foreign exports. Highlights in Business Economics and Management, 18, 167–184. https://doi.org/10.54097/hbem.v18i.12553

Xu, D., & Long, Y. (2021). The role of supply chain integration in the transformation of food manufacturers: a case study from China. International Journal of Logistics Research and Applications, 24(2), 198–212. https://doi.org/10.1080/13675567.2020.1729707

Yu, Y., Huo, B., & Zhang, Z. (2021). Impact of information technology on supply chain integration and company performance: evidence from cross-border e-commerce companies in China. Journal of Enterprise Information Management, 34(1), 460–489.

Zhang, Y., & Wang, L. (2021). Global value chain participation and China's manufacturing export sophistication. Economic Modelling, 40(1), 174-184.