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The influence of tax and customs policies on the success of supply chains: Evidence from Jordan

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ABSTRACT

This study examines the impact of tax and customs policies on the success of supply chains in Jordan within the context of international trade. Data were collected through standardized questionnaires from 286 employees in customs clearance and logistics firms and analyzed using SEM-PLS4. The results show that taxation and customs policies positively influence supply chain success and also encourage sustainable practices, which mediate their effects on supply chain performance. The findings highlight the importance of a coordinated approach to taxation, customs regulations, and sustainability to improve supply chain efficiency, foster economic growth, and strengthen Jordan's position in the global market. This research offers valuable implications for policymakers and businesses seeking to enhance supply chain performance and promote sustainable economic development.

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1. Introduction

Taxation and customs policies are embedded in the arteries of every nation's economic structure, informing how socio-economic systems and supply chains are, or would be, geared to succeed and what paths such systems and chains would take towards the sustainability brackets. In a country like Jordan, which is strategically placed between Asia, Europe, and Africa, the role of the supply chain in driving economic growth, competitiveness, and trade facilitation cannot be overstated. Although the importance of taxation policies, customs procedures, and sustainability for supply chain success is well-established (Wang et al., 2019; Malatji, 2023), the comprehensive understanding of their interdependencies is still under investigation (Alzaqebah et al., 2021a; 2021b; Men et al., 2023). Jordan is reliant on its supply chain structures to facilitate its economic growth and requires policies that promote the uninterrupted movement of trade within Jordan, as well as access to its regional and international trade partners (Al-Zaqeba and Al-Rashdan, 2020). Jordan needs its taxation scheme reforms (establishing incentives toward more sustainable business) as well as its customs environment (effective supply chains) to stay competitive in the global economy (An et al., 2021). Empirical evidence indicates that sound taxation policies create investment, improve production, and influence foreign companies to follow suit, leading to chain performance. Likewise, effective customs policies help reduce trade barriers, increase competitiveness, and enhance supply chain contexts (Jarah et al., 2022a). Moreover, global trends promote sustainability as a binding business strategy, thus requiring harmonizing regulatory frameworks at higher levels for businesses that allow for a higher sustainability grade. While each is significant, taxation and customs policies have hardly ever been analyzed as complementary enablers for sustainable supply chains in Jordan. Most of these studies examine these factors independently, leading to fragmented policies that could negatively affect supply chain efficiency, sustainability, and economic robustness. Governments must balance economic protectionism and open trade facilitation due to the complicated nature of taxation and customs policies (Liu et al., 2023; Sargent and Breese, 2023). Regulatory Adaptability Policymakers need regulatory regimes that can keep a competitive edge in trade but are not

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an undue burden on businesses. While, for example, specific customs processes are simplified and therefore ease international trade participation, too many protectionist measures may work in the opposite direction (Suriyankietkaew and Nimsai, 2021; Mena et al., 2022). Businesses must also consistently understand the changing regulatory environment to access and take advantage of any tax incentives and avoid risks from inefficient customs processes (Asare et al., 2020; Adams et al., 2023). Overcoming global supply chain challenges will involve collaboration between government institutions and private sector entities (Goldsby et al., 2023). Moreover, sustainability in supply chains cannot be achieved without specific policies that align the economy with the environmental and ethical considerations, where taxation and the customs framework to achieve such formats become inherent. Literature focusing on taxation and customs policies in supply chain management predominantly developed economies, ignoring the peculiarities of emerging markets such as Jordan. The country's position as a strategic trade hub brings its own regulatory and infrastructural challenges that affect supply chain operation efficiency. Taxation and customs have been investigated separately in prior studies, yet the interplay of these regulations and sustainability is underexplored. The paper seeks to fill this gap by examining their joint effects and exploring sustainability as a mediating variable in supply chain success by utilizing Structural Equation Modeling.In addition to emphasizing the importance of tax and customs policies in driving supply chain success, this research provides comparative insights highlighting challenges and leading practices in the region. Unlike previous literature, which treats tax, customs, and sustainability as independent variables, this study integrates them and assesses their overall impacts. This paper provides policymakers with the measures needed to make Jordan's regulatory environment more efficient for the supply chain. This contributes to Jordan's ability to integrate sustainable supply chain strategies into its tax and customs policies, which is crucial to its economic resilience and competitiveness in the long run, as sustainability shapes global trade policies.

2. Literature review

Tax and customs regimes profoundly impact supply chain success, providing benefits in terms of trade facilitation, cost efficiency as well and competitiveness. These policies are particularly important in Jordan because the country is a trading hub due to its strategic location. Despite the literature on supply chain efficiency, sustainability, and technological innovation, little work has demonstrated the link between tax and customs policy and supply chain performance. Thus, this section points to gaps and needs for an integrated approach to tax, customs policy, and supply chain sustainability.

2.1. Supply chain success

Sustainable supply chain management balances social, environmental, and economic variables to maintain long-term competitiveness and operational resilience (Jarah et al., 2022b). Demanding supply chain practices demand sustainable solutions and improve the efficiency of global business houses, and research on it directly points out not only the advanced technologies or environmental factors but also the legalization that would either promote their practices or inhibit their application (Al-Zaqeba and Al-Rashdan, 2020). There is ample research on the role of technology adoption as a driver of efficiency within supply chains. Still, little academic focus is given to how taxation and customs policy can hinder or enable it. Biswas et al. (2023) explored the impact of 5G technology adoption in the context of supply chains and highlighted its potential to improve both responsiveness and efficiency. Yet they neglected the regulatory hurdles that tax and customs laws presented for such adoption. Similarly, Iqbal et al. (2023) focused on energy-efficient supply chain practices but neglected the role of taxation policies as a motivator or disincentive of sustainable energy practices. Li et al. (2023) reflected the state of the art by discussing blockchain applications along food chain lines, focusing on aspects of transparency and security improvements but neglecting the way taxation policies impact the costs of blockchain adoption and its long-term viability, especially given the specific regulatory frameworks for companies working along food supply chains.

Kessy et al. (2024) and Ali et al. (2023) have emphasized resilience and risk management strategies within supply chains and highlighted the need for strategic planning and operational flexibility. However, they do not explore how taxation and customs regulations contribute to resilience strategies. Grimm et al. (2023) indicated that institutional policies consistent with sustainable supply chain goals are essential. Still, the role of tax incentives or regulatory barriers within such an agenda is less well understood. Moreover, Dora et al. (2022), investigated the application of Artificial Intelligence (AI) in food supply chains, which underlines AI's role to foster efficiency and decision-making. Despite the transformative potential of AI, their research did not assess how taxation policies shape AI uptake in supply chains, nor whether customs regulations set barriers to offering AI-powered trade operations. Similarly, Chae et al. (2022), while analyzing supply chain structural aspects in mergers and acquisitions, Nozari and Nahr (2022) did not point out the importance of tax and customs policy for post-merger supply chain integration. The papers collectively enhance the understanding of several key factors influencing supply chain management, e.g., technology acceptance, sustainable supply chain management, supply chain risk management, and corporate strategy. However, a significant gap still exists: the implications of the taxation and customs policies in

these domains have not been deeply examined. Although the importance of regulatory frameworks has been noted by research, there is little empirical analysis of the implications of tax and customs regulation on supply chain efficiency, sustainability, and strategic innovation.

2.2. Taxation and customs policies

Researchers and policymakers have focused on the role of taxation and customs regulations in supply chain management due to their impact on trade efficiency and economic development. The interaction between tax policies, customs regulations, and supply chain operations varies across geopolitical contexts, highlighting challenges and regulatory improvement opportunities. van den Boogaard and Beach (2023) examined how ineffective tax collection affects supply chain management and economic growth, particularly in rural regions. Their findings underscore the importance of well-structured tax policies and governance frameworks in ensuring trade efficiency. However, their research primarily focuses on tax collection issues rather than the broader implications of taxation and customs policies on supply chain sustainability. Similarly, Cantens and Raballand (2021) analyzed the challenges policymakers face in designing effective tax and customs policies. While their study offers valuable insights into policy formulation, it does not explore the direct impact of these policies on trade facilitation and supply chain competitiveness. Russia was selected as a case study to illustrate the theoretical framework of Sidorova and Goncharenko (2020), which emphasized the importance of thoughtful tax policies in minimizing trade costs and encouraging international trade. Their research shows that cooking taxes down can work magic in terms of international attractiveness. However, they do not record how taxes and customs policies affect supply chain success (Ghiran et al., 2020). Despite recent positive changes, the EU customs authorities have faced several issues that complicate trade facilitation between regions. While this study provides a broad overview of evolving customs policy, it does not explicitly engage with how these changes impact supply chain efficiency in emerging economies such as Jordan. Taxation and customs regulations surrounding digital trade (especially international e-commerce) have also been analyzed. Tax and customs policies: Li (2019) examined the determinants of cross-border e-commerce in retailing and how tax and customs measures affect such a market structure in China, showing how regulatory frameworks shape digital supply chains. Although this research is invaluable and beneficial to the link between taxation and e-commerce supply chains, it does not mention the broader implications for traditional supply chain operations and sustainability efforts.

Despite the growing literature on tax and customs policies, gaps remain. Many policymakers have studied tax or customs policies in isolation, neglecting their combined impacts on supply chain success (Aloqaily et al., 2024; Yi et al., 2024). Moreover, most research focuses on advanced economies, with limited attention to emerging markets such as Jordan. Second, the role of sustainability as a mediating factor between tax/customs policies and supply chain success has not been well studied. To do so, future research develops specific substantive and methodological aspects of tax, customs policy, and supply chain sustainability. Exploring empirical studies on Jordan and similar economies can shed light on the impact of regulatory frameworks on supply chain resilience, efficiency, and environmental sustainability. Bridging these research gaps will enable policymakers to design more effective tax and customs regulations that improve supply chain performance and balance economic growth and sustainability.

2.3. Taxation and customs policies toward the success of supply chains

The role of tax and customs policy in supply chain success has been widely recognized, yet their combined effects in emerging economies remain largely unexplored. While many studies examine factors of supply chain management, sustainability, and government interventions, limited research focuses on how taxation and customs regulations shape supply chain performance. For example, Amiri-Pebdani et al. (2022) emphasized the influence of government actions on energy and pricing in sustainable supply chains, but did not address the broader functions of taxation and customs in sustainability-oriented strategies. Similarly, Raja Santhi and Muthuswamy (2022) and Kumar and Singh (2022) highlighted blockchain's role in building trust and resilience in agri-food supply chains, yet they did not consider how specific tax rules and customs practices affect supply chain efficiency in emerging markets such as Jordan.

Heijmann et al. (2020) examined the evolving role of customs and their integration with supply chain management, but their work did not directly assess the joint impact of taxation and customs policies on supply chain success. Zhou et al. (2021) studied taxation within supply chains with a focus on carbon taxes, without considering a wider set of tax policy variables that influence supply chain operations. Likewise, Hu et al. (2016) explored customs controls in e-commerce but did not assess how tax administration might support digital trade. Finally, Grover and Dresner (2022) proposed a model on how political resources enhance competitiveness; however, their framework did not include the influence of tax and customs policy on supply chain strategies.

Epede and Wang (2022) identified the opportunities and constraints for SMEs seeking to integrate into global value chains, but do not explicitly consider how taxation and customs

frameworks shape their participation. Schneller et al. (2023) investigated healthcare supply chain management but ignored the role of fiscal policies on healthcare logistics efficiency and cost structures. Meanwhile, Tiwari et al. (2023) studied blockchain adoption in logistics but did not investigate how taxation and customs regulations hinder blockchain-enabled supply chains. By contrast, Tyagi (2023) proposed a blockchain-enabled agro-food supply chain model, but does not elaborate on regulatory complexities related to tax compliance or cross-border customs and protocols. Qader et al. (2023) investigated innovation diffusion in halal meat supply chains and emphasized information sharing. Oh et al. (2023) presented blockchain-enabled supply chain frameworks. However, none of these studies have analyzed taxation and customs as predictors of supply chain success. It emphasized a continuous research gap in exploring the impact of taxation and customs policies on supply chain performance in Jordan. Insights into how fiscal policies influence supply chains in emerging markets may be limited due to the focus of existing literature on developed economies, highlighting the need for further investigation using Jordan as a case study.

Supply chain behavior is affected by taxation policies, which impact their investment and operational performance (Sidorova and Goncharenko, 2020). However, much of this research is focused on developed countries with straightforward tax incentives, reporting regulations, and complex customs (such as the European Union, etc.), which do not match the fiscal situation in Jordan. Ghiran et al. (2020) highlighted customs digitalization in the European Union (EU), which Jordan has not yet implemented due to inefficiencies in the bureaucratic system (Heijmann et al., 2020). Jordan's supply chains with excellence may not keep up their ability to compete in global markets without modernization and strategic tax incentives. Sustainability has become an essential aspect of supply chain success. Ali et al. (2023) concluded that, despite how sustainability practices foster resilience after a recession, their study did not assess how taxation and customs policy either support or hinder sustainable practices. Tax incentives and customs regulations can drive your fight for sustainability, yet this has had limited empirical validation in Jordan. Due to the increased worldwide focus on green supply chains, more research should be conducted to investigate the role of taxation and customs policies as instruments that governments use to encourage Jordan's supply chain networks to adopt sustainability measures.

3. Hypothesis development

A wealth of literature is available on taxation, customs policies, and how they affect supply chain and sustainability success. Although abundant research has covered these factors in isolation, a more integrated view of their joint effect has not yet been fully explored. Predictable tax laws are beneficial in attracting foreign investment and expanding supply chains. Favorable taxation environments generate economic growth and develop supply chain networks by decreasing expenses and encouraging investment environments (Sidorova and Goncharenko, 2020). However, while the advantages of tax on chain operations are recognized, tax literature does not conclusively show how tax affects supply chain activities, especially in emerging economies such as Jordan. The hypothesis, based on this premise, the hypothesis is:

H1: Taxation positively affects the success of supply chains in Jordan.

The efficient customs procedures have positive consequences on the efficiency of the international supply chain. Research shows that modernizing trade facilitation methods can lead to the lowering of administrative obstacles that increase the efficiency of the supply chain. Ghiran et al. (2020) and Heijmann et al. (2020) strengthened the general argument that trade-facilitative customs policies improve trade flows and the competitiveness of the overall supply chain. However, the literature lacks details on how these policies directly affect Jordanian supply chains. Therefore, the following hypothesis is proposed:

H2: Customs policies positively affect the success of supply chains in Jordan.

Tax policies can provide incentives for businesses to go green. An example would be that companies that receive tax benefits to invest in sustainability are likely to invest in environmentally friendly practices. This is consistent with findings by Ali et al. (2023) showed that taxation practices that align with sustainability goals foster business engagement in green actions. Nevertheless, in the context of Jordan, there is a scarcity of empirical investigations that directly consider this link. Therefore, the hypothesis is:

H3: Taxation positively affects sustainable practices in Jordan.

Customs and trade policies can also support sustainability in supply chains (Heijmann et al., 2020). This may explain why customs procedures that include environmental considerations encourage the development of green supply ecosystems. However, there is little research on how customs policies can be used to achieve sustainability goals in the context of Jordan. Therefore, the following hypothesis is proposed:

H4: Customs policies positively affect sustainable practices in Jordan.

The customs policy and taxation triangle work with the mediating role of sustainable practices toward the goal of a successful supply chain. Ali et al.

(2023) showed that companies that implement social responsibility typically achieve better supply chain performance, heightened market competitiveness, and an improved image. Taxation practices that facilitate sustainability can encourage mass uptake of green practices that indirectly enhance supply chain effectiveness. Yet, previous studies have not thoroughly interpreted the mediation role of sustainability. The following hypotheses are proposed:

H5: Sustainable practices positively affect the success of supply chains in Jordan.
H6: Sustainable practices mediate the effect of customs policies on supply chains' success in Jordan.
H7: Sustainable practices mediate the effect of taxation on supply chains' success in Jordan.

4. Research model

A developing understanding of the significance of tax and customs laws to the success of supply chains is based on the literature and reviews of prior studies. To influence the adoption and effectiveness of sustainable practices, the researchers emphasized the significance of tax and customs policies towards supply chains. The success of supply chains is significantly influenced by tax and customs rules. Positive effects for the sustainability of the supply chain have also been linked to these practices. The search form is depicted in Fig. 1.

5. Methods

Leveraging a quantitative research design, this paper employs the SEM-PLS analytical tool (i.e., Structural Equation Modeling - Partial Least Squares), adept at analyzing sophisticated models with numerous interdependent variables. Hair et al. (2021) identified several reasons for choosing SEM-PLS over Covariance-based SEM (CB-SEM), with suitability for a smaller sample size, non-normal data distributions, and a formative construction (Abu Huson et al., 2024), which the dataset for this study had. This research aims to study the impact of taxation and customs policies on successful supply chains in Jordan. The data was obtained through structured questionnaires from Jordanian customs clearance and logistics company workers.

Respondents' views on taxation, customs policies, sustainability, and supply chain success were measured using a five-point Likert scale. The sample included 286 professionals with relevant expertise and experience in supply chain management, taxation, and customs operations. Stratified random sampling was used to select survey participants to ensure a representative sample across different industries and company sizes.

To further ensure high-quality insights, inclusion criteria required respondents to have at least five years' experience in their fields. The risks of bias were reduced by implementing proportional quotas for small and medium enterprises (SMEs) and large firms, respectively. The questionnaire was tested on industry experts to improve the reliability and validity of the research instrument. Feedback was used to improve the wording and clarity of the survey items. Analysis was conducted using Smart-PLS 4.0, a software designed for structural equation modeling.

For this reason, it can be said that PLS is especially relevant to the context of complex models that include reflective and formative constructs (Sarstedt et al., 2019). This paper evaluated the relationships between variables and tested for mediation effects, delivering an all-inclusive evaluation of taxation, customs policies, and supply chain success. Model fit diagnostics, path coefficient estimation, and mediation analyses were performed, confirming that the final model appropriately represented the relationships between central variables.

6. Results

To assess the influence of taxation and customs policies on the success of supply chains, the path coefficients were examined. The structural model's endogenous latent variables have an R-squared value of 0.67 or higher, which suggests a favorable correlation between the exogenous and endogenous variables. The route coefficients are shown in Fig. 2 within the study framework of achievement motivation.

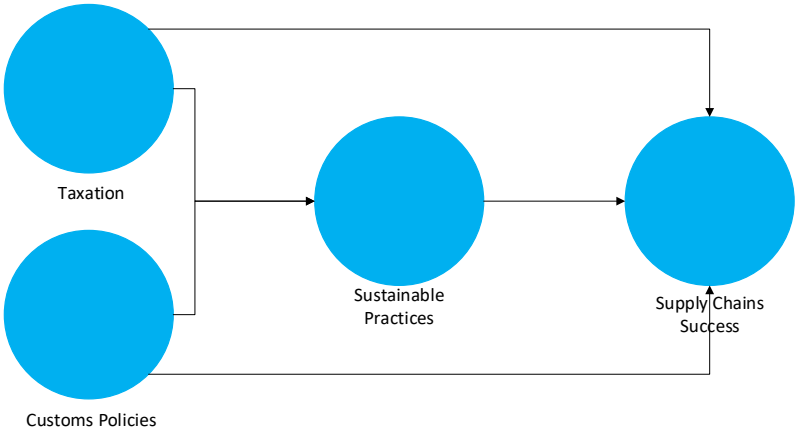

Fig. 1: Research model of taxation, customs policies, sustainability, and supply chain success

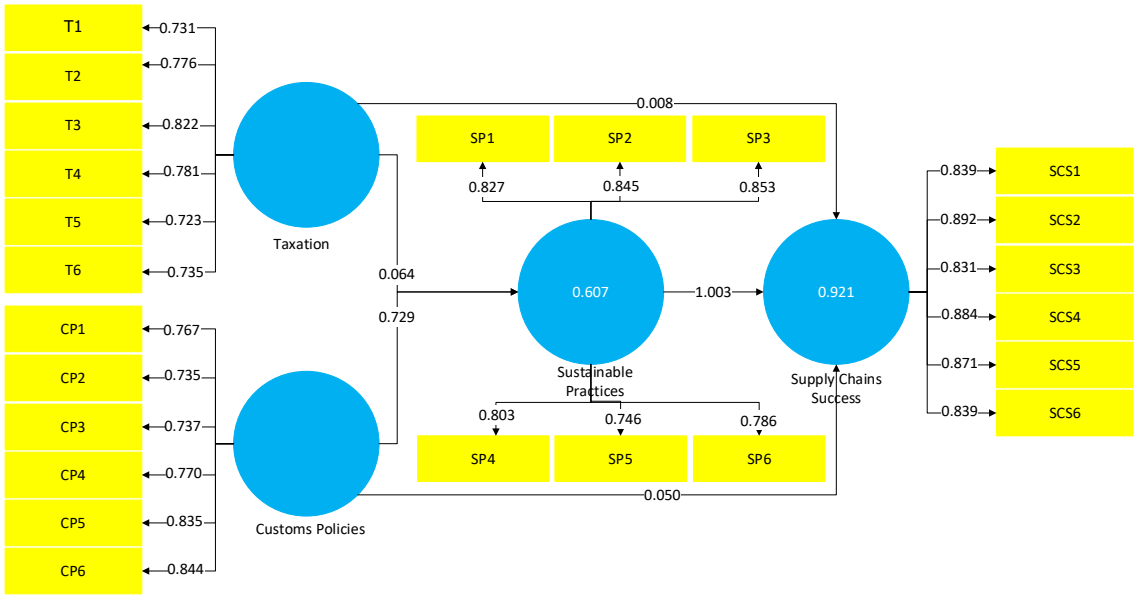

Fig. 2: Measurement model results showing validity and reliability of constructs

Fig. 2 illustrates the path coefficients between both taxation and customs policies toward supply chains. The route coefficients reflect the strength and direction of the relationships between these variables. However, all indications of several research variables had outside loading values that were more than 0.7. But it seems like a few indicators are still showing outside loading values that are less than 0.7. Mulyono et al. (2020) claimed that an outer loading value of 0.5 to 0.6 is sufficient to meet the convergent validity criteria. The information above shows that all the variable indicators are appropriate for use in research and relevant for further exploration because none of the variable indicators have outer loading values below 0.5. Likewise, the reliability of the variables in Table 1 is assessed using Cronbach's Alpha, composite reliability, and AVE. These metrics evaluate the SEM-PLS analysis's constructs' convergent validity, overall reliability, and internal consistency. The strong Cronbach's Alpha coefficients, the composite reliability (> 0.70), and the average extracted variance all indicate that the constructions in Table 1 are reliable and trustworthy for the SEM-PLS study. These steps provide a guarantee for the required ideas' precision, internal coherence, and reliability.

Table 1: Reliability and validity testing results (Cronbach's Alpha, composite reliability, and AVE)

	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
Customs policies	0.873	0.876	0.613
Supply chains success	0.929	0.929	0.739
Sustainable practices	0.895	0.898	0.658

R-squared values are quantitative measurements with a range of 0 to 1. Higher R-squared values suggest a stronger association and larger impacts, whereas lower R-squared values denote a weaker connection and smaller effects. To objectively assess the model fit, this study may classify it as "weak," "moderate," or "good" based on R-squared values of 0.19, 0.33, and 0.67, respectively.

According to Table 2, the value of R-squared is 0.921, which suggests that sustainable practices account for 92.1% of the variance or changes in supply chain success, with other reasons accounting for the remaining 7.9%. Furthermore, the R-squared value is 0.607, which means 60.7% of the variation or Sustainable practices changing is influenced by Customs Policies, while the remaining 39.3% is explained by other causes. However, R-squared on the variable of Sustainable practices is mediated.

Table 2: R-squared values of endogenous constructs

	R-squared	R-squared adjusted
Supply chains success	0.921	0.920
Sustainable practices	0.607	0.604

Numerous indicators are used in statistical analysis to evaluate research models. These indicators include p-values (P), t-statistics (T), and original value sample estimates (O). They offer insightful information on the strength and direction of links between variables. An approximate numerical value generated from the sample data is represented by the original value sample estimate. A correlation is said to be positive or negative depending on how close to +1 the number is. The importance of the link is assessed using t-statistics. A t-statistics value greater than 1.96 shows a statistically significant relationship between the variables if the confidence level is set at 95%. P-values are also essential in determining significance. The link between the variables is regarded as statistically significant if the p-value is lower than the selected cutoff, often 0.05. Fig. 3 and Table 3, which show the measured values of various indicators, show the findings of the hypothesis testing.

The results of the hypothesis testing of direct effects are shown in Table 3 and Fig. 3, enabling a

thorough examination of the interrelationships between the variables. Researchers can decide if the study hypotheses have been accepted or rejected based on the observed direct effects between variables. Table 3 aids in the overall comprehension of the study findings by providing a useful tool for comprehending the conclusions drawn from the hypothesis testing process.

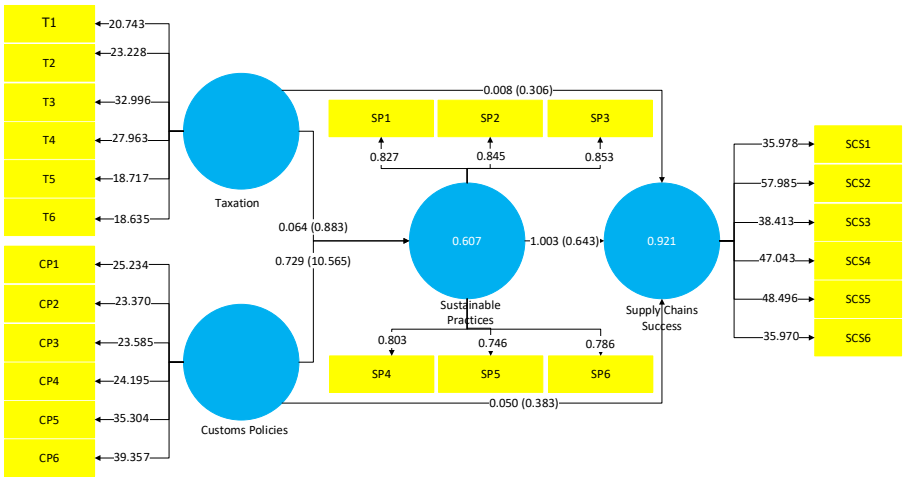

Fig. 3: Results of hypothesis testing (path coefficients, t-statistics, and significance levels)

Table 3: Results of hypothesis testing (direct effects)

Path	β	Standard deviation	T	P
Customs policies → supply chains success	0.680	0.079	8.629	0.000
Customs policies → sustainable practices	0.728	0.069	10.565	0.000
Sustainable practices → supply chains success	1.003	0.024	42.643	0.000
Taxation → supply chains success	0.059	0.082	0.674	0.501
Taxation → sustainable practices	0.067	0.072	0.883	0.377

Examining the relationships between the independent and dependent variables is the main objective of the direct effects section (e.g., Taxation, Customs Policies, and Sustainable practices) on supply chains. The significance and direction of these associations are clarified by evaluating the beta coefficients, t-values, and p-values. For instance, a positive beta coefficient and a low p-value indicate that the variables have a statistically significant positive connection. But the findings of the mediation tests are shown in Table 4. As shown in Table 4, sustainable practices mediate the relationship between customs policies and supply chain success in Jordan. The indirect effect (Customs Policies → Sustainable Practices → Supply Chain Success) is significant (β = 0.730, T > 1.96, P < 0.05), which confirms the mediating role of sustainable practices. Therefore, H6 is supported.

In contrast, H7, which proposes that sustainable practices mediate the relationship between taxation and supply chain success in Jordan, is not supported. The indirect effect (Taxation → Sustainable Practices → Supply Chain Success) is not significant (β = 0.169, T < 1.96, P > 0.05).

Table 4: Mediation testing results

Path	β	Standard deviation	T	P
Customs Policies → sustainable practices → supply chains success	0.730	0.072	10.107	0.000
Taxation → sustainable practices → supply chains success	0.067	0.072	0.884	0.377

7. Discussion

The results show that taxation and customs policies play a significant role in the success of supply chains in Jordan, consistent with the global trend found in previous research. However, while previous studies have focused on these policies individually, this study highlights their interconnected impact, particularly when sustainability is included as a mediating factor.

When customs policies are adopted with sustainability in mind, they increase the utility derived from the policies by improving the overall state of the supply chain, making a strong case that regulatory structures should integrate sustainability incentives to maximize efficiency. Sustainable approaches bridge the impact of taxes and customs policies and real-life improvements in supply chains.

What was surprising was that taxation directly impacts the success of your chain to a lesser extent than was considered. Though tax policies set the stage for investment climates, they are less likely to impact supply chain operations unless paired with sustainability initiatives immediately. Indeed, prior work proposed that the efficiency of the supply chain is positively affected by tax incentives. Yet, this study shows that the efficient supply chain is irrelevant without additional sustainable actions. The above facts imply that it is noteworthy for governments to go the extra mile to facilitate sustainable business practices through tax incentives, which increases the possibility of government interventions toward

responsible business activities, ultimately leading to economic development and sustainable growth.

This led to empirical evidence demonstrating that efficient customs procedures reduce trade costs and increase trade flow once introduced in a state. Yet qualitative feedback from respondents showed continued challenges, including uneven policy implementation and bureaucratic delays. These problems indicate that adopting even more expeditious customs reforms could significantly improve the overall operation of trade and the distribution of goods and services under Jordanian customs regulations (Ghiran et al., 2020; Heijmann et al., 2020).

Comparative lessons from Gulf states, where implementing digital customs solutions has led to lower processing times, highlight the need for comparable reforms in Jordan. This evidence will have policy implications, indicating that external stakeholders such as Jordanian authorities should prioritize sustainability-driven regulatory reforms. Such initiatives can be crucial in reinforcing supply chain resilience by providing tax incentives to lead more businesses to adopt green supply chain practices and by digitizing customs processes. Companies can adopt more socially and environmentally responsible supply chain practices through tax laws. Moreover, sustainable customs policies that include progressive aspects can encourage businesses to incorporate eco-conscious business practices throughout their supply chains, enhancing long-term best practices and competitive gain.

Despite the positive correlations of taxation policies and customs policies with supply chain success, the interplay between those factors has been under-discussed in the literature. Although previous research explored separate components such as taxation and its impact on businesses' investment (Sidorova and Goncharenko, 2020) and customs and its effects on trade facilitation (Heijmann et al., 2020), a joint classification of where and how these aspects yield such results is still lacking. Most studies, however, have applied to developed economies with zero tax or other incentives and efficient customs processes that promote and support the process of optimizing the supply chain. Yet Jordan's unique geographical position and regulatory intricacies should encourage a deeper exploration of how the interaction of taxation and customs policies affects supply-chain success.

Evidence of the sound methodological approach in conducting this study further enhances its relevance. This study adopts SEM-PLS-4 as an approach, which allows it to avoid some of the limitations of Covariance-Based SEM (CB-SEM), including constraints on small sample sizes and non-normal distributions of data (Hair et al., 2021). Stratified random sampling was employed to ensure that the sample included a balanced representation of the SMEs and large firms in Jordan's logistics and customs clearance businesses. This methodological rigor enables a more nuanced grasp of the causal relations among taxation, customs essaying, sustainability, and supply chain performance.

These findings highlight the importance of government policies in promoting sustainable supply chain practices. Past studies suggest the role of government interventions in ensuring green logistics (Paul et al., 2024), and taxation policies as a driver of sustainability incentives. On one hand, these relationships in Jordan have not been practically validated. This study contributes to filling this gap by offering clear evidence of how taxation and customs policies influence supply chain sustainability, guiding policymakers regarding adjustments that should be made to regulation. Moreover, several studies point out that regulatory challenges also act as a barrier to the supply chain due to inefficiencies in bureaucracy and inconsistencies in policy enforcement (Ghiran et al., 2020; Heijmann et al. 2020), highlighting even further the need for reform.

Technological innovations may remedy the inefficiencies associated with taxation and customs regulations. Accountability of Data, for example, through new blockchain mechanisms, has been advanced to ensure increased transparency and trust in supply chains (Brookbanks and Parry, 2022). Studies by Tiwari et al. (2023) and Tyagi (2023) described the transformative nature of technology solutions like blockchain on logistics and agro-food value chains, but the former generally ignores the taxation and customs policies and their compliance risk as part of these value chains; and the latter, the long-time discussion on the role of regulations on the latter (taxes) as a cause of the former (tech solutions). Without definite tax incentives or customs integration, the adoption of blockchain or similar digital solutions will likely be minimal. This calls for policy frameworks that enable rather than impede technology advancements for the Jordanian supply chain.

This underlines the necessity for supportive taxation and customs policies, with SMEs facing drawbacks in their fruitless attempts at integration into the global supply chain. This can make compliance costs and regulatory uncertainty burdensome for SMEs (Epede and Wang, 2022), thus restricting their participation in trade. Although the influence of trade policies on SMEs' competitiveness has been explored in prior studies (Sudan and Taggar, 2025), the current literature remains scarce on specific ways taxation and customs frameworks can mitigate these hurdles. Incorporating these elements into the analysis subsequently translates this into an advised targeted policy recommendation design that aims to improve SME access to global supply chains through tax reforms and customs procedures streamlining.

8. Conclusion

This study examines the role of taxation and customs regulations in supporting the success of

supply chains in Jordan. The findings show that a well-structured regulatory framework, supported by efficient tax and customs policies, can improve supply chain performance and contribute to economic growth. Streamlined regulations reduce administrative burdens, strengthen business operations, and enhance both trade efficiency and competitiveness.

The study also highlights the mediating role of business practices. Companies that comply with sustainable regulations perform better after reforms, which further improves supply chain efficiency. Policymakers are therefore encouraged to recognize the impact of effective tax and customs policies on supply chain success. Implementing evidence-based and sustainable practices can build stronger and more competitive supply chains, helping Jordan achieve long-term economic growth.

Future research should extend beyond the Jordanian context, as the results of this study may not be entirely representative of wider regional or global conditions. Conducting comparative studies across multiple countries would generate deeper insights into the extent to which sustainable business guidelines are being adopted in different environments. It is also important to examine additional variables that may shape supply chain performance, such as technological readiness, cultural influences, and market structures. This research emphasizes the crucial role of taxation, customs procedures, and regulatory frameworks in ensuring supply chain success in Jordan—factors that have received relatively little attention in previous studies. By broadening the scope, policymakers and stakeholders can adapt fiscal and customs policies to promote more efficient, resilient, and sustainable supply chains. Furthermore, exploring other emerging economies will enrich understanding of this multifaceted and evolving field.

List of abbreviations

AI	Artificial intelligence
AVE	Average variance extracted
CB-SEM	Covariance-based structural equation modeling
EU	European Union
O	Original sample estimate
P	p-value
PLS	Partial least squares
rho_a	Composite reliability
SEM	Structural equation modeling
SEM-PLS	Structural equation modeling – partial least squares
SMEs	Small and medium enterprises
T	t-statistic
β	Beta (path coefficient)

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Compliance with ethical standards

Ethical considerations

This study was conducted in accordance with ethical standards for research involving human participants. The research protocol was reviewed to ensure compliance with the principles of voluntary participation, confidentiality, and informed consent. All participants were informed about the purpose of the study, assured that their responses would remain anonymous, and that their participation was entirely voluntary. No personal identifying information was collected. The study did not involve any physical, psychological, or social harm to participants.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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