Fiscaoeconomia

E-ISSN: 2564-7504

2024, Volume 8, Issue 3, 1264-1278

https://dergipark.org.tr/tr/pub/fsecon

Submitted/Geliş: 25.03.2024

Accepted/Kabul: 06.07.2024

Doi: 10.25295/fsecon.1458266

Research Article/Araştırma Makalesi

The Impact of Customs Procedures on Global Competitiveness: An Investigation with Structural Equation Modelling[1]

Gümrük Prosedürlerinin Küresel Rekabet Gücü Üzerindeki Etkisi: Yapısal Eşitlik Modellemesi ile Bir İnceleme

Suzan OĞUZ[2]

Abstract

Customs procedures cover activities carried out to facilitate trade, ensure national security, and ensure the free movement of goods and services across national borders. The efficient execution of these processes improves the trade openness of nations, supports economic growth and provides competitiveness to countries. This study aims to examine the impact of customs procedures on global competitiveness in OECD (Organisation for Economic Co-operation and Development) and selected Asian countries through the mediating roles of international trade and economic growth. In this context, a model proposal is presented using data from 42 countries for the years 2010, 2012, 2014, 2016, 2018 and 2023. The direct and indirect relationships between the variables in the model proposed within the scope of the research were examined by Structural Equation Modelling (SEM) path analysis. The results of the analysis show that customs procedures have a direct and positive effect on global competitiveness. In addition, it has been observed that international trade and economic growth mediate this relationship significantly and positively.

Jel Codes: *F13, F63, C10*

Keywords: *Customs Procedures, International Trade, Global Competitiveness, Structural Equation Modelling*

[1] This study was partially presented at the 5th International 5 January Social and Human Sciences Congress held on 5-6 January 2024 and published electronically as an abstract.

[2] Assist. Prof. Dr., Çağ University, ssuzanoguz@gmail.com, ORCID: 0000-0003-4876-3173

Citation/Atıf: Oğuz, S. (2024). The Impact of Customs Procedures on Global Competitiveness: An Investigation with Structural Equation Modelling. *Fiscaoeconomia, 8*(3), 1264-1278. Doi: 10.25295/fsecon.1458266

Oğuz, S. (2024). The Impact of Customs Procedures on Global Competitiveness: An Investigation with Structural Equation Modelling. *Fiscaoeconomia, 8*(3), 1264-1278. Doi: 10.25295/fsecon.1458266

Öz

Gümrük prosedürleri, ticareti kolaylaştırmak, ulusal güvenliği sağlamak ve ürün ve hizmetlerin ulusal sınırlar arasında serbest dolaşımını sağlamak için yürütülen faaliyetleri kapsamaktadır. Bu süreçlerin etkin bir şekilde yürütülmesi ulusların ticari dışa açıklığını geliştirmekte, ekonomik büyümeyi desteklemekte ve ülkelere rekabet gücü sağlamaktadır. Bu çalışma, OECD (Ekonomik İşbirliği ve Kalkınma Örgütü) ve seçilmiş Asya ülkelerinde gümrük prosedürlerinin küresel rekabet gücü üzerindeki etkisini uluslararası ticaret ve ekonomik büyümenin aracılık rolleri üzerinden incelemeyi amaçlamaktadır. Bu bağlamda, 42 ülkenin 2010, 2012, 2014, 2016, 2018 ve 2023 yıllarına ait verileri kullanılarak bir model önerisi sunulmuştur. Araştırma kapsamında önerilen modelde yer alan değişkenler arasındaki doğrudan ve dolaylı ilişkiler Yapısal Eşitlik Modellemesi (YEM) yol analizi ile incelenmiştir. Analiz sonuçları, gümrük prosedürlerinin küresel rekabet gücü üzerinde doğrudan ve pozitif bir etkiye sahip olduğunu göstermektedir. Ayrıca, uluslararası ticaret ve ekonomik büyümenin bu ilişkiye anlamlı ve pozitif bir şekilde aracılık ettiği gözlemlenmiştir.

Jel Kodları: *F13, F63, C10*
Anahtar Kelimeler: *Gümrük Prosedürleri, Uluslararası Ticaret, Küresel Rekabet Gücü, Yapısal Eşitlik Modellemesi*

1. Introduction

With the impact of globalization, countries around the world are becoming increasingly interconnected as a reflection of the increasing flow of goods, services, capital, information and technology. This offers countries the opportunity for economic growth and development through international trade (Gordhan, 2007: 49). The efficiency of international trade depends, among other factors, on customs clearance time and speed of delivery to the customer. Since customs controls are quite complex and require a certain amount of time, proper preparation and detailed examination of foreign trade transactions are important for the efficient realization of this process (Rbehat & Marafi, 2024: 8). The recent increase in the complexity and volume of international trade has revolutionized global trade practices. The way customs administrations carry out their duties and set up their commercial operations has been profoundly impacted by this.

Customs is a government agency responsible for collecting customs duties and taxes, controlling goods that are prohibited or restricted, and enforcing international law related to customs in the national context. These functions have a substantial influence on trade activities that cross national and international borders. In order to maintain national security, revenue generation, and the overall competitiveness of the trading system, customs administrations must adapt to changes in the global trade industry by facilitating trade and exercising appropriate control (Shiberu & Tamene, 2021: 1-2; Rbehat & Marafi, 2024: 7). Customs administrations must offer straightforward, dependable, and effective procedures for the clearance of commodities and the movement of persons in accordance with modern trade practices. In addition, they have to respond to security concerns in order to abide by international agreements, national regulations, and progressively more complicated procedures (Elmane-Helmane & Ketners, 2012: 528).

An important obstacle to trade is the presence of ineffective customs regulations and processes that have not kept up with the growth and growing intricacy of trade. The trade in services may not be directly hindered by customs restrictions and procedures. Additionally, it should be noted that service sectors, such as transportation systems, exhibit a significant reliance on customs regulations and processes (Zhang, 2002: 89). The presence of transport infrastructure and logistics systems plays a crucial role in facilitating the provision of services in various domains, including transportation, storage, packaging, labeling, and customs clearance (Bayraktutan & Özbilgin, 2015: 96). The World Bank's Logistics Performance Index (LPI) analyses countries on six dimensions (Arvis et al., 2023).

1. Efficiency of customs and border management operations.
2. Quality of trade and transportation infrastructure.
3. Ease of arranging competitively priced international shipments.
4. Adequacy and quality of logistics services.
5. Ability to track and monitor shipments.
6. Frequency with which shipments reach recipients within the planned or expected delivery time

The efficiency dimension of customs and border management operations measures the cost and time associated with compliance with a country's customs regulations and the regulations of other government agencies required for goods to cross the border (Beysenbaev & Dus, 2020: 38). At this point, in addition to infrastructure investments to increase trade and stimulate demand in countries, institutional and legal barriers affecting trade and transportation in the region need to be addressed (Jain, 2012: 63). Nations often employ trade policies, such as tariffs, embargoes, quotas, and other protectionist measures, in order to mitigate or eradicate disadvantages. The enforcement mechanism of customs plays a crucial role in various aspects of a country's operations. These include the implementation of trade policy, facilitation of exports, prevention of the entry of dangerous items, and enforcement of international responsibilities. Hence, it is crucial to analyse the factors that influence the effectiveness of customs services, as their capacity to convert resources into services has a significant impact on the overall economic performance of a nation (Onogwu, 2018: 1). Under these conditions, customs administrations, being the pertinent regulatory bodies for global trade and the transportation of products, bear greater significance and intricate responsibilities. The primary objective of customs administrations is to enhance and streamline the process of international trade and transportation. In addition, they are required to oversee and regulate supply chains while safeguarding the economy and society (Benazić, 2012: 143).

As a result, customs procedures include procedures carried out to ensure the movement of goods and services across national borders, facilitate trade and ensure security. The efficient execution of these procedures improves the trade environment of countries, increases openness to foreign trade, is a driving force for economic growth and contributes to the competitiveness of countries. In this context, efficient management of customs procedures contributes to the reduction of operational costs of the business world and the expansion of trade by accelerating the flow of international trade. Moreover, efficient execution of customs procedures supports sustainable development by increasing the economic growth potential of countries. The aim of this study is to examine the impact of customs procedures on global competitiveness in OECD (Organization for Economic Cooperation and Development) and selected Asian countries through the mediating roles of international trade and economic growth. In this context, a model proposal is presented to examine the relationships between the relevant variables. Within the scope of the study, the direct and indirect relationships between the variables in the proposed model are examined by Structural Equation Modeling (SEM) path analysis method. Among the principal reasons for selecting SEM path analysis in this study, its capacity to conduct in-depth analyses of intricate relationships and to test theoretical models emerges as a key factor. Path analysis enables researchers to assess the interrelationships between multiple variables simultaneously. The number of empirical studies on this subject in the literature is quite limited. Therefore, this study is important for understanding the impact of customs and border management policies on global economic competitiveness and facilitating the formulation of more effective strategies by policy makers and the business world.

2. Conceptual Framework and Literature Review

Customs serve as the guardian of global trade. International trade transactions require products to be processed by the customs of the respective country, which is a time-consuming process. To promote trade, each party involved needs to implement or support streamlined customs procedures that ensure the smooth release of products (Rbehat & Marafi, 2024: 7). The customs policy, customs system, and customs service or economic security institution of a country are contingent upon its economic independence. This assertion serves as the foundation for an autonomous nation's economic pursuits on a global scale and its safeguarding of national economic stability. Establishing a robust and efficient customs regulation system is crucial for facilitating the integration of the national economy into the global labor market and aligning it with the market structures of developed nations (Karpenko et al., 2020: 219). Therefore, the competitiveness of businesses in a dynamic economy is significantly affected by the duration of logistics and international trade transactions (Benazić, 2012: 146).

Efficient and effective logistics processes have a positive impact on global competitiveness. Strong logistics performance helps countries gain competitiveness by helping to reduce costs and transport time. Global competitiveness makes comparisons by examining many factors that support competitiveness and directs businesses and managers to address the issue of providing more efficient logistics services. There are various studies in the literature that support the relationships between logistics performance components, international trade, economic development and global competition (Hoekman & Nicita, 2011; Garcia Pires, 2012; Hausman et al., 2013; Martí et al., 2014; Pilinkiene, 2016; Bugarčić vd., 2020; Filová & Hrdá, 2021; Shikur, 2022). Hoekman and Nicita (2011) analysed the relationship between trade policies, trade costs, logistics performance and foreign trade for 105 developing countries, utilising data from 2006. The findings indicate that logistics performance has a significant and positive effect on foreign trade for all models. Furthermore, cross-border measures designed to enhance logistics performance and trade facilitation have been demonstrated to facilitate an increase in the exports of these countries. Martí et al. (2014) analysed the relationship between logistics performance and economic growth and international trade with a panel gravity model using the 2007-2012 period data of 60 countries. As a result of the analysis, it was found that an increase in LPI leads to a significant increase in trade flows and economic growth of countries. Pilinkiene (2016) analysed the causal relationships between international trade, economic growth and competitiveness in Central and Eastern European countries with Granger-causality test using 2000-2014 data. The results of the study show that there is a causal relationship between trade openness, economic growth and competitiveness. It is determined that economic growth leads to an increase in trade openness and competitiveness leads to an increase in economic growth Filová and Hrdá (2021) examined the relationship between LPI and GDP per capita by correlation analysis with 5-period data of 134 countries. The findings of the study show that there is a positive and significant relationship between LPI and GDP per capita. A general review of the related literature reveals that logistics and customs operations have a significant impact on international trade, support economic growth and provide competitiveness to countries.

With the expansion of international trade, national and international strategic factors need to be identified and developed to ensure customs efficiency (Gordhan, 2007: 49). Until recently, the role of customs was generally limited to the collection of customs and indirect import duties. Then, many developments such as the rise of e-commerce, terrorist threats and organized crime have changed the function of customs. A country's ability to compete economically is greatly enhanced by an effective and efficient customs clearance process, which also promotes investment and industrial growth and raises the involvement of companies in global trade (Elmane-Helmane & Ketners, 2012: 528). Border management includes many issues such as family, culture, tourism, business, etc. in and around border regions (Yeo, 2022: 975) Border management ensures that border activity can be implemented effectively and efficiently. The border force involves the full capabilities and effectiveness of each agency responsible for managing the border, including customs, immigration and quarantine, through cooperation, joint task forces, staff training and information sharing. This approach ensures that only legal entry into the country through land, sea and air ports of entry (Setiawan et al., 2020: 91).

Customs procedures refer to the operations applied to goods by customs authorities as set out in national legislation. Customs procedures cover all activities of the customs system related to the control and facilitation of imported and exported goods, passengers and goods in transit (Shiberu & Tamene, 2021: 5). As customs are critical links in international supply chains, customs clearance is a fundamental requirement for faster supply chains (Kilibarda et al., 2017: 45; Sawhney & Sumukadas, 2005: 291). In an international buyer-supplier relationship, imported goods arriving in a country typically need to clear customs. This is often perceived as a process of border controls, delays and complex paperwork (Appeals & de Swielande, 1998: 111). The facilitation of international trade in commodities is critically dependent on the efficiency of the customs clearance procedure, which is a crucial aspect of the logistics services sector (Gani, 2016: 109). While the specific responsibilities of customs services may differ among nations, there exists a general agreement over their primary duties. The implementation of customs services is anticipated to enhance public revenues, safeguard domestic producers, guarantee the security of supply chains, deter the importation of forbidden or hazardous goods, and combat drug trafficking by enforcing relevant legislation (De Wulf et al., 2005: 5-6). Taxation, specifically the safeguarding of fiscal interests, stands as a crucial duty within contemporary customs services. According to Benazić (2012: 143), despite the decline in customs income resulting from the liberalization of international trade and the decrease of tariffs, customs services continue to hold significant importance in funding public necessities. However, customs administrations that operate inside the global economy encounter a multifaceted array of obstacles. The primary obligations encompass the collection of revenues and the safeguarding of society. However, it is imperative that these demanding jobs are executed with effectiveness and efficiency, while concurrently enabling the smooth movement of lawful commodities (Drobot et al., 2017: 550). In conclusion, customs and border management is an important area that requires regulations for the development and competitiveness of global economies.

3. Method, Analysis and Findings

The aim of this study is to examine the impact of customs procedures on global competitiveness in OECD (Organization for Economic Cooperation and Development) and selected Asian countries through the mediating roles of international trade and economic growth. In this context, a model proposal is presented and 6-period data of 42 countries for the years 2010, 2012, 2014, 2016, 2018 and 2023 are used. Direct and indirect relationships between the variables in the model proposed within the scope of the study were examined by Structural Equation Modeling (SEM) path analysis method. IBM AMOS 29 package program was used for the analyses carried out within the scope of the study.

SEM is a statistical methodology used to analyse complex relationships between variables. In this context, firstly, a theoretical framework is created and within this framework, the relationships between variables are shown in the model. Mediation roles in SEM are considered as an extension of simple linear regression analysis in terms of adding one or more variables to the regression equation. The mediating variable is defined as the variable that explains the relationship between two variables (Hayes, 2009: 408). In other words, SEM is a multivariate statistical model that emerged as a synthesis of factor analysis and path analysis (Wang et al., 2019: 2). This method is used to examine a structural theory with a confirmatory approach and is based on hypothesis testing. It reveals direct and indirect relationships between variables by analysing multivariate complex models (Byrne, 2010; Gürbüz, 2019; Collier, 2020). The origins of structural equation modelling (SEM) can be traced back to path analysis. In cases where factor analysis has been performed before and the dimensions have been transformed into variables or secondary data are used, the structural model can be established with observed variables. Such models are called path analyses. In the literature, there are studies in which path analysis is performed with secondary data, which are macroeconomic variables, but such studies are quite limited (Yang et al., 2018; Dasanayaka et al., 2022; Wang et al., 2022; Oğuz, 2024; Tiwari et al., 2024).

The first step in SEM is to draw a path diagram, which serves to illustrate the model in question. This graphical representation facilitates the comprehension of the intricate interrelationships between the variables within the model (Schumacker & Lomax, 2004: 4). Path analysis is a form of multiple regression analysis that is employed to evaluate causal models by examining the relationships between variables. This method estimates both the magnitude and importance of causal links between variables (Dong et al., 2020: 4). In other words, while examining the relationships between variables with the path diagram, the best model to explain these relationships and data fit are investigated with structural equation modelling programmes.

The OECD is an international organization working to create policies for better living standards. It collaborates with governments, policymakers and citizens to set internationally recognized standards and address a wide range of social, economic and environmental issues (OECD, 2023). In addition to OECD countries, Asian countries, which are considered in the scope of the analysis in addition to OECD countries, stand out with their significant positions in the LPI, the growth of their industries and the significant shares they receive from global trade. First of all, the countries covered in the analysis are shown in Table 1.

Table 1: Countries Included in the Analysis

Country Name	Country Name	Country Name
Australia	Hungary	Portugal
Austria	Iceland	Slovak Republic
Belgium	Ireland	Slovenia
Canada	Israel	Spain
Chile	Italy	Sweden
Colombia	Japan	Switzerland
Costa Rica	South Korea	Turkey
Czech Republic	Lithuania	United Kingdom
Denmark	Luxembourg	United States of America
Estonia	Mexico	Hong Kong
Finland	Netherlands	Singapore
France	New Zealand	Japan
Germany	Norway	China
Greece	Poland	Latvia

The emergence of Industry 4.0 has necessitated the digitalization of production processes, interconnectedness and integration to ensure superior value creation. Logistics in particular has received a lot of attention as it plays a critical role in this process and affects all interconnected business units (Lai et al., 2008; Moldabekova et al., 2021). Incorporating customs procedures into logistics systems encourages the expansion of global trade by facilitating the systematic and smooth flow of trade. One of the dimensions of logistics performance is customs efficiency, which assesses the speed and ease of customs clearance (Beysenbaev & Dus, 2020: 38). Although national borders are no longer an obstacle for movement in the globalization process, various problems are encountered at the borders during customs procedures and these customs process problems slow down the functioning of the logistics chain (Keskin, 2018: 112). In order to realize an effective customs clearance process, it is important that these processes are carried out as efficiently as possible and with less bureaucratic procedures. The impact of customs clearance on international trade and economic growth is increasingly recognized and it is accepted that more efficient customs clearance is a driving force for trade volume, economic development and competitiveness. The model proposed in this study aims to explain the causal relationships between customs procedures, international trade, economic growth and global competitiveness.

In SEM applications, the first step is usually to draw a path diagram describing the model. This drawing makes it easier to understand the complex relationships between the variables in the model. The proposed model of the study is shown in Figure 1.

Figure 1: Proposed Model

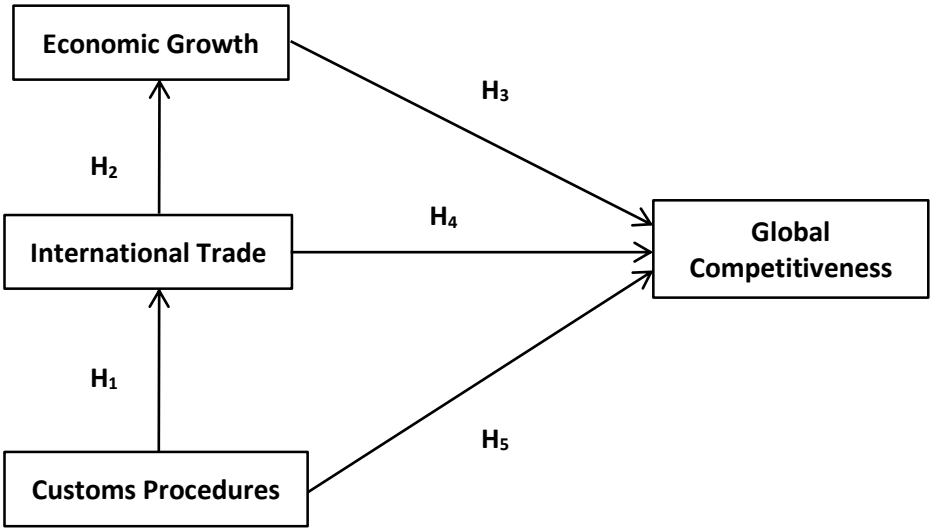

Figure 1 shows the hypotheses formed within the scope of the study in the proposed model. There are 5 hypotheses to be examined within the scope of the study and these hypotheses are as follows:

H_1: Customs procedures have a positive impact on international trade.

H_2: International trade has a positive impact on economic growth.

H_3: Economic growth has a positive effect on global competitiveness.

H_4: International trade has a positive impact on global competitiveness.

H_5: Customs procedures have a positive impact on global competitiveness.

The data set of the study, which includes information about the variables, is as shown in Table 2. Economic data can have large fluctuations, especially variables such as income, prices and population. Taking logarithms makes the distributions of these variables more symmetric and reduces the effect of extreme outliers. Therefore, the logarithm of the per capita income value was taken and the analyses were carried out through the data shown in the Table.

Table 2: Data Set of Variables

Variable Name	Variable Description-Data Source
Customs Procedures	LPI 'Efficiency of customs and border management operations' dimension -World Bank
International Trade	Trade (%GDP)-World Bank
Economic Growth	Logarithm of real GDP per capita (USD)-World Bank
Global Competitiveness	Global competitiveness index-World Economic Forum

The hypothesis test results of the model proposed within the scope of the research are as shown in Table 3. When the table is examined, it is seen that all hypotheses in the proposed model are accepted. Therefore, the analysis continued with this model without any changes.

Table 3: Hypothesis Test Results of the Proposed Model

Hypotheses	Standard β	P	Accept/Reject
$H_{1:}$ Customs Procedures ----> International Trade	0.103	***	Accepted
$H_{2:}$ International Trade ----> Economic Growth	0.116	***	Accepted
$H_{3:}$ Economic Growth ----> Global Competitiveness	0.085	0.006	Accepted
$H_{4:}$ International Trade ----> Global Competitiveness	0.097	***	Accepted
$H_{5:}$ Customs Procedures ----> Global Competitiveness	0.038	***	Accepted

While performing the analysis in SEM, the model results offer suggestions for correction. These results are called "fit indices" (Shi et al., 2019). The 3 fit indices that must be reported in structural models are shown below. These indices show how well the proposed model fits the data (Kline, 2019: 269).

1. Degrees of freedom and model chi-squared χ2 statistic (χ2/sd or CMIN/DF)
2. Comparative fit index (CFI-Comparative fit index)
3. Root mean square error of approximation (RMSA-Root mean square error of approximation)

When the literature is examined, it is seen that the most frequently used indices in SEM evaluation are comparative fit index (CFI), normalised fit index (NFI), relative fit index (RFI), incremental fit index (IFI). The goodness of fit values of the model proposed within the scope of this research are as presented in Table 4. When Table 4 is examined, it is seen that the fit index values of the model examined are within acceptable value ranges.

Table 4: Goodness of Fit Values of the Proposed Model

Goodness of Fit Indices	Accepted Fit Range	Model Fit Value
χ2/sd (CMIN/DF)	≤ 5	2.76
CFI	0.90≤CFI≤1.00	0.98
RMSEA	0.00≤RMSA≤.08	0.03
NFI	0.90≤NFI≤1.00	0.98
RFI	0.90≤RFI≤1.00	0.90
IFI	0.90≤IFI≤1.00	0.99

SEM examines the relationships between variables using three different methodologies. These are direct, indirect and total effects. Direct effect refers to a situation where one variable has a direct effect on another variable without any intermediary. In the context of indirect effects, a variable is observed to have an effect on another variable through an

intermediary. The total effect level shows the sum of these two effects. The results of the path analysis showing the direct, indirect and total effects between the variables are shown in Table 5.

Table 5: Path Analysis Results

Standardized Total Effects			
Variables	Customs Procedures	International Trade	Economic Growth
International Trade	0.63	0	0
Economic Growth	0.68	0.74	0
Global Competitiveness	0.75	0.22	0.28
Standardized Direct Effects			
Variables	Customs Procedures	International Trade	Economic Growth
International Trade	0.63	0	0
Economic Growth	0	0.74	0
Global Competitiveness	0.59	0	0.28
Standardized Indirect Effects			
Variables	Customs Procedures	International Trade	Economic Growth
International Trade	0	0	0
Economic Growth	0.68	0	0
Global Competitiveness	0.16	0.22	0

Table 5 shows that customs procedures have three different effects on global competitiveness: total, direct and indirect, In terms of total effect, customs procedures have an impact of 0.63 units on international trade, 0.68 units on economic growth and 0.75 units on global competitiveness. In terms of the type of effect, customs procedures have a direct effect of 0.63 units on international trade and 0.59 units on global competitiveness. Finally, when the indirect effects are analysed, it is found that customs procedures have an impact of 0.68 units on economic growth and 0.16 units on global competitiveness. When the results are evaluated in general, it is concluded that customs and border management efficiency has a direct positive and significant effect on global competitiveness, while international trade and economic growth have a mediating effect on the relationship between customs and border management efficiency and global competitiveness.

4. Conclusion and Recommendations

Customs and border management plays a critical role in regulating a country's foreign trade, providing security and supporting its economic activities. Factors such as fast trade transactions, low-cost logistics, reliable trade environment and increased trade volume contribute to countries gaining a competitive advantage by promoting economic growth,

In this study, the mediating roles of international trade and economic growth in the relationship between customs procedures and global competitiveness in OECD and selected

Asian countries are analysed. In this context, a model proposal was presented using 5-period data of 42 countries and 5 hypotheses were tested with SEM path analysis. After the analyses carried out within the scope of the study, it was observed that the proposed model containing five hypotheses was accepted. The path analysis results show that customs procedures have a direct positive and significant effect on global competitiveness. When the indirect effect findings are analysed, it is concluded that international trade and economic growth mediate the relationship between customs procedures and global competitiveness. Empirical evidence in the literature shows that regulations regarding logistics services and connectivity between countries are effective in reducing costs in trade transactions and increasing integration in global value chains. When the findings are evaluated in general, it is seen that the established hypotheses are supported in line with studies using relevant variables (Hoekman & Nicita, 2011; Garcia Pires, 2012; Hausman et al., 2013; Marti et al., 2014; Pilinkiene, 2016; Bugarčić et al., 2020; Filová & Hrdá, 2021; Shikur, 2022). Unlike other studies, in this study, the relationships between variables were considered as a whole, and direct and indirect relationships were interpreted separately. In this respect, the study is expected to contribute to the literature.

Customs and border management plays an important role in regulating a country's international trade, ensuring security and economic development. It contributes to faster trade operations, stimulating economic growth, cost-effective logistics, a reliable trading environment and increased trade volumes. This facilitates nations to gain a competitive advantage and strengthens their position in the global trade environment. On the other hand, efficient customs and border management can strengthen the effectiveness of countries in global markets by increasing international cooperation. Therefore, countries should standardize customs procedures to make trade transactions more predictable and transparent. In this context, incentive policies should be developed to improve customs and border management through technological solutions such as smart customs systems, automation and data analytics, and cooperation and information sharing on customs and border management between countries should be encouraged. In this way, it will be possible to realize cross-border trade more smoothly by strengthening the communication between the parties.

References

Appeals, T. & Swielande, H. S. D. (1998). Rolling Back the Frontiers: The Customs Clearance Revolution. *The International Journal of Logistics Management*, *9*(1), 111-118.

Arvis, J. F., Ojala, L., Shepherd, B., Ulybina, D. & Wiederer, C. (2023). *Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy-The Logistics Performance Index and Its Indicators*.

Bayraktutan, Y. & Özbilgin, M. (2015). Lojistik Maliyetler ve Lojistik Performans Ölçütleri. *Maliye Araştırmaları Dergisi*, *1*(2), 95-112.

Benazić, A. (2012). Measuring Efficiency in the Croatian Customs Service: A Data Envelopment Analysis Approach. *Financial Theory and Practice*, *36*(2), 139-179.

Beysenbaev, R. & Dus, Y. (2020). Proposals for Improving the Logistics Performance Index. *The Asian Journal of Shipping and Logistics, 36*(1), 34-42.

Bugarčić, F. Ž., Skvarciany, V., & Stanišić, N. (2020). Logistics Performance Index in International Trade: Case Of Central and Eastern European and Western Balkans Countries. Business: *Theory and Practice,* 21(2), 452-459.

Byrne, B. M. (2010). *Structural Equation Modelling with Amos*. Routledge, New York.

Collier, J. E. (2020). *Applied Structural Equation Modeling Using AMOS: Basic to Advanced Techniques.* Routledge, New York.

Dasanayaka, C. H., Perera, Y. S., & Abeykoon, C. (2022). Investigating the Effects of Renewable Energy Utilization Towards the Economic Growth of Sri Lanka: A Structural Equation Modelling Approach. *Cleaner Engineering and Technology,* 6, 100377.

De Wulf, L. & Sokol, J. B. (Eds.) (2005). *Customs Modernization Handbook*. World Bank Publications.

Dong, H. J., Gerdle, B., Bernfort, L., Levin, L. Å. & Dragioti, E. (2020). Pain Catastrophizing in Older Adults With Chronic Pain: The Mediator Effect of Mood Using A Path Analysis Approach. *Journal of Clinical Medicine*, 9(7), 2073, 1-15.

Drobot, E. V., Klevleeva, A. R., Afonin, P. N. & Gamidullaev, S. N. (2017). Risk Management in Customs Control. *Ekonomika Regiona=Economy of Regions*, (2), 550-558.

Elmane-Helmane, K. & Ketners, K. (2012). Integrated Customs Control Management in Latvia: Lessons Learned. *Economics and Management*, *17*(2), 528-533.

Filová, A. & Hrdá, V. (2021). Managerial Evaluation of the Logistics Performance and its Dependencies on Economies in Selected Countries. *Ekonomicko-Manazerske Spektrum*, 15(1), 15-27.

Gani, A. (2016). The Efficiency of Customs Clearance Processes Can Matter for Trade. *International Advances in Economic Research*, *22*(1), 109-110.

Garcia Pires, A. J. (2012). International Trade and Competitiveness. *Economic Theory,* 50(3): 727-763.

Gordhan, P. (2007). Customs in the 21st Century. *World Customs Journal*, *1*(1), 49-54.

Gürbüz, S. (2019). *AMOS ile Yapısal Eşitlik Modellemesi*. Seçkin Yayıncılık, Ankara.

Hausman, W. H., Lee, H. L. & Subramanian, U. (2013). The Impact of Logistics Performance on Trade. *Production and Operations Management,* 22(2): 236-252.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in The New Millennium. *Communication Monographs*, *76*(4), 408-420.

Hoekman, B. & Nicita, A. (2011). Trade Policy, Trade Costs, and Developing Country Trade. *World Development,* 39(12), 2069-2079.

Jain, S. R. (2012). Coordinated Border Management: The Experience of Asia and the Pacific Region. *World Customs Journal*, *6*(1), 63-67.

Karpenko, L., Pashko, P., Chunytska, I., Akhlamov, A. & Kostenko, A. (2020). The Role of Customs Regulation in Ensuring the Economic Security of The Country. *Journal of Security & Sustainability Issues*, *10*(1).

Keskin, M. H. (2018). *Lojistik, Tedarik Zinciri Yönetimi* (7. Basım). Nobel Yayın Dağıtım, Ankara.

Kilibarda, M., Andrejic, M. & Popovic, V. (2017). Efficiency of Logistics Processes in Customs Procedures. *3rd Logistics International Conference Serbia* (Vol. 14, No. 17, 45-51).

Kline, R. B. (2019). *Principles and Practice of Structural Equation Modeling.* The Guilford Press, New York.

Lai, K. H., Wong, C. W. & Cheng, T. E. (2008). A Coordination-Theoretic Investigation of The Impact of Electronic Integration on Logistics Performance. *Information & Management*, *45*(1),10-20.

Martí, L., Puertas, R. & García, L. (2014). The Importance of the Logistics Performance Index in International Trade. *Applied Economics,* 46(24): 2982-2992.

Moldabekova, A., Philipp, R., Satybaldin, A. A. & Prause, G. (2021). Technological Readiness and Innovation as Drivers for Logistics 4.0. *The Journal of Asian Finance, Economics and Business*, *8*(1), 145-156.

OECD. (2023). *About OECD*. https://www.oecd.org/about/ (10 December 2023).

Oğuz, S. (2024). The Link Between Trade Openness, Economic Growth, Energy Use and Carbon Emissions: Analysis with a Conceptual Model Proposal. *Sosyoekonomi,* 32(60), 181-195.

Onogwu, D. J. (2018). Corruption and the Efficiency Of Customs' Clearance Process In Selected Countries. *Review of Public Administration & Management*, *6*(3), 1-8.

Pilinkiene, V. (2016). Trade Openness, Economic Growth and Competitiveness. The Case of the Central and Eastern European Countries. *Inžinerinė Ekonomika,* 27(2), 185-194.

Rbehat, A. M. & Marafi, H. B. (2024). The Role of Customs Process in Facilitating International Trade. *Saudi Journal of Business and Management Studies*, *9*(1), 7-14.

Sawhney, R. & Sumukadas, N. (2005). Coping with Customs Clearance Uncertainties in Global Sourcing. *International Journal of Physical Distribution & Logistics Management*, *35*(4), 278-295.

Schumacker, R. E. & Lomax, R. G. (2004). A Beginner's Guide to Structural Equation Modeling. Psychology Press, Taylor and Francis Group.

Setiawan, M. R. S., Mendrofa, E. L. A. M. & Pramana, G. M. A. P. (2020). Border Management: Challenges and Issues at The Border in Indonesia. *Customs Research and Applications Journal*, *2*(2), 84-104.

Shi, D., Lee, T., & Maydeu-Olivares, A. (2019). Understanding the Model Size Effect on SEM Fit İndices. *Educational and psychological measurement*, *79*(2), 310-334.

Shiberu, B. & Tamene, B. (2021). Effect of Import Customs Procedure on Trade Facilitation the Case of Adama City. *Information Technology in Industry*, *9*(3), 1-16.

Shikur, Z. H. (2022). The Role of Logistics Performance in International Trade: A Developing Country Perspective. *World Review of Intermodal Transportation Research,* 11(1): 53-69.

Tiwari, S., Raza, S. A., Gupta, S. K., Shahzadi, I., & Kuruva, M. B. (2024). Testing the LCC Hypothesis by Considering Environmental Sustainability and Economic Development: Role of Green Energy and Resource Management. *Geoscience Frontiers,* 15(3), 101666.

Wang, H. D., Zheng, C. F., & Xiao, X. (2022). An AMOS Model for Examining the Factors Influencing the Development of China Cross-Border E-Commerce Comprehensive Pilot Areas. *Discrete Dynamics in Nature and Society,* 2022(1), 1889589.

Wang, Y., Zhou, L., Jia, Q. & Ping, X. (2019). Direct and Indirect Effects of Environmental Factors on Daily CO2 Exchange in a Rainfed Maize Cropland-A SEM Analysis with 10 Year Observations. *Field Crops Research*, *242*, 107591.

World Bank. (2023). *World Bank Open Data*. https://data.worldbank.org/ (15 December 2023)

World Economic Forum. (2023). Publications. https://www.weforum.org/publications/ (17 December 2023)

Yang, N., Zhang, Z., Xue, B., Ma, J., Chen, X., & Lu, C. (2018). Economic growth and pollution emission in China: Structural path analysis. *Sustainability*, 10(7), 2569.

Yeo, J. (2022). Beyond Immigration and Customs Enforcement: Understanding Interorganizational Collaboration for Border Management. *Journal of Borderlands Studies*, *37*(5), 975-997.

Zhang, A. (2002). Electronic Technology and Simplification of Customs Regulations and Procedures in Air Cargo Trade. *Journal of Air Transportation*, *7*(2), 87-102.

Ethical Approval: The author declares that ethical rules are followed in all preparation processes of this study, In the case of a contrary situation, Fiscaoeconomia has no responsibility, and all responsibility belongs to the study's author.