The Impacts of Non-Macroeconomic Indicators on the Exports of Goods and Services the Case of in OECD Countries*

Mehmet Oğuzhan İLBAN[1] **Sevgi SEZER**[2] **Tahsin LİCELİ**[3]

[1] Professor Dr. Mehmet Oğuzhan İLBAN, Balıkesir University, Burhaniye Faculty of Applied Sciences, Department of Gastronomy and Culinary Arts, ilban@balikesir.edu.tr, ORCID: 0000-0002-7557-9817

[2] Associate Professor Dr. Sevgi SEZER, Burhaniye Faculty of Applied Sciences, Department of Finance and Banking, sevgi.sezer@balikesir.edu.tr, ORCID: 0000-0001-6958-3329

[3] Research Assistant Tahsin LİCELİ, Burhaniye Faculty of Applied Sciences, Department of Tourism and Hospitality Management, tahsin.liceli@gmail.com, ORCID: 0000-0001-7707-0347

Abstract: Research studies regarding micro- and macro-level variables have been faced regularly in the literature taking the factors that affect the export performances of countries into consideration, Nonetheless, the objective of this study was to explicate the impacts of non-macroeconomic variables such as trade freedom index, R&D expenditures, the number of patent entitlements, and the number of newly established companies on exports of goods and services by utilizing the pertinent data compiled from 36 OECD countries throughout the period 2006 - 2020 via the GMM (Generalized Moments Method) analysis method. The findings revealed that trade freedom, the number of newly established companies, and the number of patent entitlements had positive impacts on the share of exports of goods and services in the GDP, whereas R&D expenditures had a negative impact on the share of exports in the GDP

Key Words: Export Performance, Trade Freedom Index, R&D, Patent Entitlements, OECD.

1. INTRODUCTION

Manuscripts should be prepared using Microsoft Along with globalization, the world countries tend to export their domestic products to benefit from international market opportunities to achieve a reliable market position and to maintain a sustainable and highly competitive market domain. The most important factor that determines and affects the competitiveness of countries and in the economic life is the export performance and value-added created by the enterprises of that country in both domestic and foreign markets. Although export performance is a widely studied subject, there is no clarity on its definition. Conceptually, export performance is generally used in terms of efficiency, competence and interest in exporting (Thorelli and Tesar, 1990; Katsikeas, Piercy and Ioannidis, 1996; Voerman, Wedel and Zwart, 1999; Sousa, 2004; Cadogan, Kuivalainen and Sundqvist, 2009). Therefore, the measurement of export performance generally includes export intensity, perceived profitability, level of satisfaction, and continuing export activity (Wedel and Zwart, 1999; McGeehan, 1968; Reid, 1983; Stöttinger and Schlegelmilch, 1998). Wedel and Zwart, 1999 states that the conceptual definition of export performance should point to export and performance, which are two terms of the concept, separately.

Exports are an important sources in terms of ensuring the balance of payments of the countries.

Therefore, an export-led growth is of great importance in terms of two factors. The first reason is that the growth in exports removes the balance of payments constraint, and therefore, allows faster growth along with efficient factor supply. The second reason is that growth in exports generates a circular growth impact with the link between growth in productivity and growth in output (McCombie and Thirlwall, 1994: 421). Whether economies would exploit a rise in the volume of exports leans purely on the elasticities of demand for and supply of exported products. As they increases, exports stimulate higher percentage of growth. In developing countries, these elasticities are more likely to be lower than that of developed ones. Accordingly, the influence of the rise in the volume of exports on economic growth is relatively greater in developed countries (Karakeçe, 2018). In most Export-led Growth Models, the relationship between income and the growth ratio of exports and what percentage of the growth in income stems from growth in exports is unclear. But there is no doubt about the various statements made that growth in exports increases the rate of growth in

* This study was derived by updating and generalizing the data and analysis of the paper presented at the EBES congress on 1.7.2020.

income over time (McCombie and Thirlwall, 1994: 422). It is, in general, assumed that an increase in exports has a positive impact on investment and productivity. Therefore, assuming that there is underemployment in an economy, if a country increases its exports rapidly, the economic growth of that country would be positively affected.

There have been various studies conducted on the determinants of export performance (Miesenbock, 1988; Katsikeas, Piercy and Ioannidis, 1996; Leonidou, Katsikeos and Samiee, 2002). Some of these studies concentrate on environmental factors as the determinants of export performance (Diamontopoulos and Inglis, 1988; Beamish 1985; Mc Dougall and Oviatt 1996), whereas others focus on intra-industry factors (Ansari, Aafaqi, and Jayasingam, 2000). Theoretical and empirical studies indicate that both environmental factors and firm resources have certain influences on export performance (Lages, 1999). For example, Katsikeas, Piercy, and Ioannidis, 1996 divide the factors that determine export performance into three groups as environmental, organizational, and strategic factors. On the other hand, it is seen in other studies that factors affecting export performance are usually classified under two groups as external environmental factors and internal environmental factors (Lages, 1999; Thorelli and Tesar, 1990). In accordance with this distinction, the overall work conducted later focuses on either environmental factors or intra-industry factors as determinants of export performance. Pioneering studies have mostly dealt with the effects of macroeconomic factors. Nonetheless, today, there are findings claiming that various non-macroeconomic factors have effects on exports. Liberalization of product markets, as well as international trade, and elimination of barriers to international investments are accepted as key components in OECD countries as well as in other parts of the world in terms of increasing economic efficacy, and thus, raising the living standards. OECD countries that share a proportionally high level of economic growth and democracy while considering the principles of the market economy, which were initially defined as a fairly homogeneous group. However, its heterogeneity lies in the existence of large differences in their economic strengths and sizes.

The aim of this study is to find whether or not R&D expenditures, trade freedom index, the number of companies established, and the number of patent entitlements received affect the exports in the OECD countries. With the help of data compiled from 36 OECD countries between the years 2006-2020, the GMM analysis is performed to examine the subject. Accordingly, this study consists of five parts. Following the introduction in the first part, the pertinent literature is reviewed in the second part. In the third part, the data and methodology of the analyses are introduced. Obtained findings of the performed analyses are presented in the fourth part. Consequently, brief conclusive policy suggestions are made in the last part.

2. MATERIAL AND METHODS

2.1. Literature Review

In the literature, studies conducted on macroeconomic factors are mostly emphasized. However, unlike the current literature, this study considers the research studies in which the subject was explicated with non-macroeconomic factors.

Upon explicating the association between non-macroeconomic factors and export performance, it is seen that the most widely used variables appear to be R&D expenditures and patent entitlements as well as newly established companies. Studies in this literature are the studies conducted within a similar framework.

Hulst, Mulder, and Soete (1991) investigated the association between international trade and technology and of five OECD countries, namely Germany, Sweden, Netherlands, Japan, France, in three different years (1979, 1983 and 1987) with cross-sectional regression method. The study tested whether or not a country's or industry's strong technology capability has an influence on the foreign trade of that country or industry. The study found that creating a technological advantage for Germany, Sweden, the Netherlands, and partly for Japan provides a competitive advantage in foreign trade. However, for France, this result could not be confirmed.

Amable and Verspagen (1995) examined 18 industries in five industrialized OECD member countries over the period 1970-1991 and found that patents, namely commercial innovations, had positive effects on international trade performance. The study tried to determine the prominence of price and non-price factors in determining international competitiveness.

Verspagen and Wakelin (1997) analyzed the data of nine OECD member countries regarding their mutual trade between 1970-1978 and 1980-1988 using a dynamic panel data method. They revealed that R&D intensity had a significant and positive effect on exports.

Narula and Wakelin (1998) examined the association between both export performance and the ratio of foreign direct investments and variables that affect innovation with the 4-year data (1975, 1979, 1984, 1989) on 41 developed and developing countries. The positive effect of the patent variable on export performance in developed countries was determined. In developing countries, the patent variable had an adverse impact on export performance.

Wakalin (1998) analyzed reciprocal international trade flows in nine OECD member countries and 22 manufacturing industry sectors using the OLS regression method over the period 1988-1992. According to the results of the study, an affirmative correlation was found between total international trade of countries and export performances related to some sectors, whereas the R&D expenditures were determined to have an adverse impact on the countries' exporting activities.

Montobbio and Rampa (2005) investigated the association between innovation levels and export performance in nine developing countries over the period 1985-1998 using the structural decomposition method. According to the results of the study, technological activities increased export performance. It was concluded that China, Malaysia, Singapore, and Thailand, together with their high levels of innovation, have significantly increased their importance in world exports.

Uzay et al. (2012) investigated the association between the exports of manufacturing sectors and R&D expenditure in Turkey over the period 1995-2005. It was found that R&D expenditures had a significant but rather delayed effect on exports.

Hasanov et al. (2015) investigated the association between export performance and innovation indicators of 48 Asian countries by using industrial design, trademarks, patents, and R&D expenditures as indicators of innovativeness via the OLS regression method over the period 1997 – 2011. They revealed that the number of registered industrial design was the merely innovativeness indicator which related positively to export performance. The remaing indicators did not indicate significant associations.

Sungur et al. (2016) analyzed the impacts of R&D expenditures, number of R&D researchers, patents and innovation activities on export, and economic growth in Turkey over the period 1990-2013. The Granger Causality test results revealed the existence of unidirectional causalities from patent number to growth; from export to share of R&D expenditures in GDP; from patents to exports; and from R&D labor force to export.

Olabode et al. (2016), in their research on 249 small and medium-sized export businesses in Nigeria, found that market-oriented approach positively affected export performance; adopting a market-oriented business culture improved exporting skills; export skills acted as a mediator between market orientation and export performance; the impact of export skills on export performance decreased when export environmental turbulence increases.

Tekin and Hancıoğlu (2017) utilized the data of the developing countries included in the Global Innovation Index between 201 -2015 using the panel data analysis method. According to the results of the research, it was concluded that innovation had a positive effect on export performance in developing countries. Furthermore, the study stated that especially R&D activities had an important role in export performance of developing countries.

Polat (2018) analyzed the 1996-2016 period data of developing Asian countries with panel data analysis and examined the impacts of R&D expenditures, innovation, the number of R&D researchers, and the real effective exchange rate on exports. The impact of innovation on exports was found to be significant and positive. It was determined that the number of R&D researchers had a positive and significant impact on exports. It was observed that the decrease in the real effective exchange rate increased the export competitiveness by increasing the competitiveness in foreign trade.

Yıldırım et al. (2019) examined the effectiveness of trade aid flows of 8 West African countries over the period 2005-2014. The trade freedom index had an overall positive and significant impact on export value. It was determined that a one-point rise in the trade freedom index caused an increase of 1.89 USD in exports.

Konak and Demir (2019) revealed that the volume of exports rose as the GDP and trade freedom index increased by employing the Panel OLS method using the annual data of BRICS countries and Turkey between the years 1995-2017.

Acaravcı et al. (2019) investigated the impacts of R&D expenditures on real exports in Turkey by performing the ARDL bounds test using the annual data over the period 1990-2014. Average real income per capita and real exchange rate of trading partners were used as control variables. The long-run coefficient results indicated that a rise in R&D expenditures and average real income of trading partners rendered Turkey's real exports per capita

positive; indicating that the rise in the real exchange rate negatively affected Turkey's per capita real exports.

Akyol and Demez (2020) examined the effect of innovation on the export of high technology products specific to the group of newly industrialized countries. It was observed that the innovation activities covering the years 1996-2015 and involving 8 countries had a positive effect on the export of high technology products. They also concluded that the 1% rise in total patent applications led to an increase of 0.21% in the export of high technology products.

Kılıç and Yörükoğlu (2020) analyzed the data obtained from 527 companies via survey questionnaire method over the period May-July 2019, and detected that all sub-dimensions of market orientation, separately and together, have positive and significant effects on innovation orientation. They could not find any significant impact of innovation orientation on export performance.

Yaşar (2020) analyzed the impacts of R&D expenditures and the number of patent applications on exports of high-tech products in 52 selected countries between 2007-2018 via the system GMM method. The results revealed that R&D expenditures and patent applications had positive and statistically significant impacts on high-technology product exports.

2.2. Data and Methodology

The sample of this study is constituted by 36 OECD countries (the United States, the United Kingdom, Japan, Turkey, Denmark, Switzerland, Austria, Luxembourg, Sweden, Poland, Spain, South Korea, Slovenia, Greece, Slovak Republic, Iceland, Portugal, Norway, Belgium, New Zealand, Netherlands, Mexico, Lithuania, Italy, Israel, Finland, Ireland, Hungary, Germany, Czech Republic, France, Latvia, Estonia, Chile, Canada, and Australia). The study period is determined as between the years 2006-2020 in annual frequency depending on data constraints. The data used in their analysis are obtained from various sources. The ratio of the exports of goods and services to the gross domestic product (EXPGDP) data included in the study as a dependent variable is obtained from the World Bank and OECD national accounts databases. The related data include the total price of the product, freight, insurance, and transfer in the export of goods and services, and indicate the proportional weight of the amount of exports in the GDP. Trade freedom refers to the basic right of all individuals to control their labor and property. States determine the institutional and political framework within which individuals, businesses, and governments operate. “Trade Freedom Index” has been reported by the Heritage Foundation since 1995. The relevant index consists of property rights, the rule of law, tax burden, government integrity, government spending, financial health, business freedom, labor freedom, monetary freedom, commercial freedom, investment freedom, and commercial freedom items. The Trade Freedom Index documents the affirmative association between economic freedom and various positive social and economic objectives. Countries with a high degree of trade freedom tend to be more prone to improvement as individuals benefit more from their ability to innovate and develop when they are released, with heavy government regulations and taxation.

The Trade Freedom (TF) included in the study as a dependent variable is part of the economic freedom index, which has been calculated by the Heritage Foundation and the Wall Street Journal. The index value ranges from 0 to 100, 40 - 49 being not free, 50 - 59 being mostly not free, 60 - 69 being partially free, 70 - 79 being mostly free, and 80 - 100 being free. The trade freedom included in the economic freedom index has been calculated by taking the average customs tariff rate weighted with commercial goods and non-tariff barriers into consideration. The ratio of R&D expenditures to the GDP (RDGDP), as another independent variable used in the analysis, is obtained from the WDI database of the World Bank. The relevant data indicate the proportional share of the budgets reserved for research and development activities in the countries’ domestic incomes. Similarly, another data obtained from the World Development Indicators database of the World Bank involve the number of newly established companies (NBR) and indicate the number of companies established in status with limited liability. The last variable used in the analysis is the number of patent entitlements (TP). The data obtained from the World Bank, World Intellectual Rights Organization database for each member country included in the sample show the annual patent applications made by citizens and non-citizens in each country separately. Since the variables used in the analyses are on different scales, the logarithms of EXPGDP, TF, NBR, TP variables are taken. However, since the RDGDP variable can take values below 1, no logarithmic transformation is applied for it.

Table 1. Descriptive Statistics

	EXPGDP	TF	RDGDP	NBR	TP
Mean	1.642000	1.931000	1.900000	4.436900	3.4350
Maximum	2.312000	1.965000	5.435000	5.889000	5.7930
Minimum	1.000000	1.758000	0.283000	2.672000	1.3610
Std. Dev.	0.239000	0.019000	1.018000	0.578000	1.0040
# of Obs.	540	539	540	525	540

Upon examining Table 1, it can be seen that the highest standard deviation is in the ratio of R&D expenditures to GDP (RDGDP). The highest average is in the NBR series, indicating the number of newly established companies. Also, a striking fact in Table 1 is that the numbers of observations for each variable differ on a serial basis. It is either partially or completely impossible to access some of the data of the variables included in the analyses. Therefore, the analyses are performed with an unbalanced panel.

$$EXPGDP_{i,t} = C + \beta_1 EXPGDP_{i,t-1} + \beta_2 TF_{i,t} + \beta_3 RDGDP_{i,t} + \beta_4 NBR_{i,t} + \beta_5 TP_{i,t} + e_{i,t} \quad (1)$$

$EXPGDP_{i,t}$: Ratio of goods and services exports of country i at time t to GDP

$EXPGDP_{i,t-1}$: Ratio of goods and services exports of country i at time t-1 to GDP

$TF_{i,t}$: Trade Freedom Index value for country i at time t

$RDGDP_{i,t}$: Ratio of R&D Experndiures of country i at time t to GDP

$NBR_{i,t}$: The number of newly established companies in country i at time t

$TP_{i,t}$: The number of patent entitlements in country i at time t

$e_{i,t}$: Error term

Since the period of the analysis is T=15 (over the period 2006 – 2020), and N=36 (number of countries included in the analysis); N>T, therefore, the GMM technique is an appropriate method to be employed in the study (Roodman, 2009).

The analyses of the study are performed via the GMM (Generalized Moments Method), also known as the Dynamic panel, which was first proposed by Arellano and Bond (1991). Later on, this method was improved by Blundell and Bond (1998), and the system GMM methodology was proposed in the related study. Neither methodology has an advantage over each other. In this study, the difference GMM approach developed by Arellano and Bond (1991) is used in a way that two-step estimators are computed.

3.FINDINGS

Correlations between the independent variables of the analyses can be examined in Table 2. The findings in Table 2 reveal that TF has negative correlations with all independent variables. Besides, the highest correlation coefficient in the Table is 0.4740, which falls between those of RDGDP and TP. RDGDP has positive correlations with NBR and TP, whereas a negative correlation with TF. Finally, there seems to be a positive correlation between NBR and TP.

Table 2. Correlation Matrix

	TF	RDGDP	NBR	TP
TF	1			
RDGDP	-0.0780	1		
NBR	-0.1250	0.0010	1	
TP	-0.3940	0.3760	0.4740	1

The Two-Step Arellano-Bond Difference GMM results are given in Table 3. The Wald test results exhibiting the consistency of the GMM estimators indicate the overall significance of the variables used in the analyses, the Sargan test results reveal the validity of the over-determination constraints, and the AR2 test results assert that there is no second-order autocorrelation. Under these conditions, the estimate can be determined to be valid and coefficient estimators can be interpreted.

Table 3 Arellano-Bond Difference GMM Results

	Coefficient	Std. Dev.	Probability
Constant	-0.6410	0.1390	0.000
Lagged (EXPGDP)	0.6030	0.0200	0.000
TF	0.5016	0.0680	0.000
RDGDP	-0.0270	0.0060	0.000
NBR	0.0610	0.0050	0.000
TP	0.0240	0.0040	0.000
Wald Chi^2	0.000		
Sargan	34.0970		1.000
AR2	-1.6400		0.100

The estimator coefficients indicate that trade freedom has a statistically significant and positive influence on the proportional share of exports that take place in the GDP. The fact that countries with high trade freedom included in the sample tend to use their foreign exchange rate advantage and increase their exports is thought to be the underlying reason. Upon evaluating the OECD countries in the sample regardless of being developed or developing, it is seen the relevant data are heterogeneously distributed. In this case, trade freedom levels of developed countries with more stable exports are rather higher than those of developing countries. The trade freedom levels of the developed countries are relatively high, whereas their exports tend to increase due to the exchange rate advantages. Subsequently, the exports proportionally included in the GDP of underdeveloped countries are more likely to fluctuate, and the analysis results in support of this finding are evaluated. While the Trade Freedom Index points out the affirmative association between economic freedom and trade it can be said that the high export advantages of developed countries tend to increase more by high trade freedom levels. Another obtained result involves the fact that the percentage share of R&D expenditures in the GDP has a significant and adverse impact on the percentage share of exports in the GDP. The GDP-increasing impacts of R&D activities can be seen in studies such as Verspagen and Wakelin (1997), Tekin and Hancıoğlu (2017), Polat (2018), Acaravcı et al. (2019), and Yaşar (2020). In this case, increasing R&D activities cause the relative share of exports in GDP to remain lower and, thus, this negative impact can be justified in this way.

However, it can be said that exports are positively and significantly affected as long as the number of newly established companies increases according to Table 3. This situation can be interpreted as referring to the fact that the newly established companies perform direct export activities or they indirectly provide the firms engaged in export activities with goods and services, thereby causing the rise in the country's exports. Undoubtedly, the most unsurprising result obtained from the study is that the number of patent entitlements have a significant and positive influence on the share of exports in the GDP. The number of patent entitlements provides the advantage of protecting intellectual and industrial rights. The increasing number of patent entitlements can provide an advantage in export-led competitive conditions and protect companies internationally. In such a case, companies gain a great advantage in developing export-led policies along with their patented products.

5.CONCLUSIONS AND DISCUSSION

It can be said that there are many factors that affect export performance. These factors are mostly considered as macroeconomic factors in the current literature. Whether or not non-macroeconomic factors have impacts on the exports has been the subject of merely a limited number of studies. In this study, the export performances of OECD member countries are analyzed over the period 2006-2020 and it is tried to determine the impacts of trade freedom index (TF), research and development expenditures (RDGDP), the number of newly established companies (NBR) and the total number of patent entitlements (TP) each year on the exports via the GMM analysis.

Accordingly, it is determined that the trade freedom factor positively affects the exports of goods and services. TF tends to be higher in developed countries. In this case, countries with high TF may act more liberally in terms of foreign trade. Besides,

developed countries can trigger export-enhancing developments by implementing more competitive exchange rate policies. These results were also revealed, unsurprisingly, in studies such as Yıldırım et al. (2019) and Konak and Demir (2019).

Nevertheless, R&D expenditures negatively affect the share of exports in the GDP. The mentioned negative effect of research and development activities is consistent with the results obtained in Wakalin (1998) and Hasanov et al. (2015).

R&D activities can provide an advantage to economic development not only with a rise in exports but also with a rise in GDP. When the dependent variable is evaluated as the share of income in GDP, it would not be correct to claim that it does not provide an export advantage. In such a case, exports, which remained relatively lower due to increased GDP, may have revealed this negative impact. There are similar results of Uzay et al. (2012) on this subject.

The number of newly established companies positively affects exports due to the fact that newly established businesses export directly and/or contribute to the activities of exporting enterprises. The results obtained from the study reveal that the increase in the number of patent entitlements has a positive influence on the share of exports in GDP.

Unsurprisingly, according to Amable and Verspagen (1995), there are findings indicating that the number of patent entitlements positively influences export performance. Besides, Narula and Wakelin (1998), Akyol and Demez (2020), and Yaşar (2020) concluded that the number of patent entitlements positively influences the exports.

Upon evaluating the results obtained from the study in terms of economic decision-makers, it can be said that incentive policies that increase the number of new businesses to be established and measures to boost research and development activities would contribute to export performance. It would also be rational to suggest decision-makers about increasing the number of patent entitlements since the findings on this subject in the current literature supports the fact. At this point, some shortcomings of the study can be mentioned. For instance, the sample group has a heterogeneous structure. In the studies to be carried out in the future, performing separate analyses in distinct country groups with homogeneous features, such as developed and developing countries, may foster more striking results on the subject.

References

Acaravcı, A., Akalin, G., & Erdoğan, S. (2019). Araştırma-Geliştirme Harcamalarının Türkiye İhracatına Etkileri. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *37*(1), 1-16.

Akyol, M., & Demez, S. (2020). İnovasyonun Yüksek Teknoloji Ürün İhracati Üzerindeki Etkisi: Yeni Endüstrileşen Ülkeler İçin Panel Veri Analizi. *Journal of Yaşar University*, *15*(57), 56-62.

Amable, B., & Verspagen, B. (1995). The Role of Technology in Market Shares Dynamics. *Applied Economics*, *27*(2), 197-204.

Ansari, M., Aafaqi, R., & Jayasingam, S. (2000). Entrepreneurial Success, Gender and Leadership Behavior/Mahfooz A. Ansari, Rehana Aafaqi and Sharmila Jayasingam. *Journal of International Business, Economics and Entrepreneurship (JIBE)*, *8*(2), 33-46.

Arellano, M., & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and An Application to Employment Equations. *The Review of Economic Studies*, *58*(2), 277-297.

Beamish, P. W. (1985). The Characteristics of Joint Ventures in Developed and Developing-Countries. *Columbia Journal of World Business*, *20*(3), 13-19.

Blundell, R., & Bond, S. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics*, *87*(1), 115-143.

Cadogan, J. W., Kuivalainen, O., & Sundqvist, S. (2009). Export Market-Oriented Behavior and Export Performance: Quadratic and Moderating Effects Under Differing Degrees of Market Dynamism and Internationalization. *Journal of International Marketing*, *17*(4), 71-89.

Diamantopoulos, A., & Inglis, K. (1988). Identifying Differences between High -and Low- Involvement Exporters. *International Marketing Review*, *5*(2), 52-60.

Hasanov, Z., O. Abada, S. Aktamov (2015), Impact of Innovativeness of the Country on Export Performance: Evidence from Asian Countries, *IOSR Journal of Business and Management*, *17*(1), 33-41.

Hulst, N. V., Mulder, R., & Soete, L. (1991). Exports and Technology in Manufacturing Industry. *Weltwirtschaftliches Archiv*, *127*(2), 246-264.

Karakeçe, E. (2018). Türkiye Ekonomisinde Önde Gelen Sektörler. Temel Kavram ve Analizlerle Türkiye Ekonomisi (Ed. İrfan Ersin) Bursa: Ekin Yayınevi. 53-78.

Katsikeas, C. S., Piercy, N. F., & Ioannidis, C. (1996). Determinants of Export Performance in a European Context. *European Journal of Marketing*, *30*(6), 6-35.

Kılıç, S., & Yörükoğlu, Ö. (2020). Pazar ve İnovasyon Yönelimliliğin İhracat İşletmelerinin İnovasyon ve İhracat Performansına Etkileri. *Business & Management Studies: An International Journal*, *8*(1), 45-81.

Konak, A. & Demir, M. (2019). Türkiye'nin BRICS Ülkeleri İle Ticaretinin Analizi: Çekim Modeli Uygulaması, *Uluslararası Bankacılık Ekonomi ve Yönetim Araştırmaları Dergisi, 2*(2), 43-70.

Lages, L. F. (1999). Marketing Lessons from Portuguese Wine Exporters: The Development and Application of A Conceptual Framework. *Journal of Wine Research*, *10*(2), 123-132.

Leonidou, L.C., C. S. Katsikeas ve S. Samiee, (2002), "Marketing Strategy Determinants of Export Performance: a Meta-Analysis". *Journal of Business Research*, *55*(1), 51-67.

Magnier A. y J. Toujas-Bernate (1994). "Technology and Trade: Empirical Evidence for the Mayor Five Industrialized Countries, *Weltwirtschaftiches Archiv*, *130*, 494-520.

McCombie, J.S.L., and Thirlwall, A.P. (1994). Economic Growth and the Balance of Payments Constraint. London: Macmillan.

McDougall, P. P., & Oviatt, B. M. (1996). New Venture Internationalization, Strategic Change, and Performance: A Follow-Up Study. *Journal of Business Venturing*, *11*(1), 23-40.

McGeehan, J. M. (1968). Competitiveness: A Survey of Recent Literature. *The Economic Journal*, *78*(310), 243-262.

Miesenbock, K. J. (1988). Small Businesses and Exporting: A Literature Review. *International Small Business Journal*, *6*(2), 42-61.

Montobbio, F., & Rampa, F. (2005). The Impact of Technology and Structural Change on Export Performance in Nine Developing Countries. *World Development, 33*(4), 527-547.

Narula, R., & Wakelin, K. (1998).Technological Competitiveness, Trade, and Foreign Direct Investment. *Structural Change and Economic Dynamics*, *9*(3), 373-387.

Olabode, O. E., Adeola, O., & Assadinia, S. (2018). The Effect of Export Market-Oriented Culture on Export Performance. *International Marketing Review*, *35*(4), 637-660.

Polat, M. A. (2018). Ar & Ge ve İnovasyonun Ülkelerin İhracat Performansına Etkileri: Gelişmekte Olan Asya Ülkeleri için Yeni Nesil Bir Panel Veri Analizi. *Gaziantep University Journal of Social Sciences*, *17*(3), 997-1015.

Reid, S. (1983). Firm Internationalization, Transaction Costs and Strategic Choice. *International Marketing Review*, *1*(2), 44-56.

Roodman, D. (2009). How to Do Xtabond2: An Introduction to Difference and System GMM in Stata. *The Stata Journal*, *9*(1), 86-136.

Sousa, C. M. (2004). Export Performance Measurement: An Evaluation of the Empirical Research in the Literature. *Academy of Marketing Science Review*, *2004* (9), 1-22.

Stöttinger, B., & Schlegelmilch, B. B. (1998). Explaining Export Development Through Psychic Distance: Enlightening or Elusive?. *International Marketing Review*, *15*(5), 357-372.

Sungur, O., H.İ. Aydın, M.V. Eren (2016), Türkiye'de Ar-Ge, İnovasyon, İhracat ve Ekonomik Büyüme Arasındaki İlişki: Asimetrik Nedensellik Analizi, *Süleyman Demirel Üniversitesi İ.İ.B.F. Dergisi*, *21*(1), 173-192.

Tekin, E., & Hancıoğlu, Y. (2018). İnovasyon Belirleyicilerinin İhracat Performansına Etkisi Üzerine Bir Araştırma. *Uluslararası Yönetim İktisat ve İşletme Dergisi*, *14*(4), 897-917.

Thorelli, H. B., & Tesar, G. (1990). *Entrepreneurship in International Marketing: A Continuing Research Challenge* (No. 37). Indiana Center for Global Business.

Uzay, N., Demir, M., & Yıldırım, E. (2012). İhracat Performansı Açısından Teknolojik Yeniliğin Önemi: Türkiye İmalat Sanayi Örneği. *Doğuş Üniversitesi Dergisi*, *13*(1), 147-160.

Verspagen, B., & Wakelin, K. (1997). Trade and Technology from a Schumpeterian Perspective. *International Review of Applied Economics*, *11*(2), 181-194.

Voerman, L. J., Wedel, M., & Zwart, P. S. (1999). The Dynamics of Exporting SMEs' Information Behaviour. *International Council for Small Business, Washington, DC*.

Yaşar, M. (2020). The Relationship Between High-Tech Product Exports, R&D Expenditures and Patent Applications: Dynamic Panel Data Analysis for Selected Countries, BILTURK, *The Journal of Economics and Related Studies, 2*(4), 557-571.