Master's Thesis of Nguyen Thi Thuy Linh

A study on the effects of trade promotion factors on export

－ Focus on the case of South Korea －

수출진흥요인의 영향에 관한 연구

－ 한국 무역사례를 중심으로

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Graduate School of International Studies
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Abstract

A study on the effects of trade promotion factors on export – Focus on the case of South Korea

Export creates a closer link between an economy and the rest of the world. It facilitates international trade and stimulates domestic economic activity by creating employment, production, and revenue. Acknowledging the huge benefit of export, the government of every country tries to promote export by many different tools. This raises the need of conducting research about the effects of these tools on export. This study focuses on examining the relationship between trade promotion offices and export, with the use of panel data at state level with the case of South Korea.

The research implies that establishing a new trade promotion office in a partner country has positive impact on the amount of export to that destination countries. In addition, government should take advantage of trade promotion offices' presence in the partner countries to accelerate other factors that can stimulate export such as mutual trade agreements, cultural influences or other events. This combination of factors with the assistance of trade promotion offices will contribute to the growth of export.

Keyword : Trade, export, export promotion
Student Number : 2020-21857

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LIST OF ABBREVIATIONS

APEC: Asia- Pacific Economic Cooperation

ASEAN: Association of Southeast Asian Nations

BTS: Bangtan Sonyeondan (Korean music band)

CIS: Central Asian Cooperation

EFTA: European Free Trade Association

EU: European Union

FTA: Free Trade Agreement

GDP: Gross Domestic Product

GSP: Generalized System of Preferences

Hallyu: Korean wave (global boom in Korean pop culture that started off with music and TV dramas)

KOTRA: Korea Trade- Investment Promotion Agency

K-pop: Korean popular music

PPML: Poisson Pseudo Maximum Likelihood

WTO: World Trade Organization

Introduction

1.1. Definition and Purpose of Research

Export is viewed as an important way to accelerate an economy and to promote export. The government of each country concentrates on many different export promotion methods. Due to the importance of perceiving the effects of these factors, it is crucial to analyze export promotion strategies to find out which is the effective way for governments to accelerate export.

There has been a number of studies about export promotion tools or strategies since the early 1980s such as Berry and Mussen (1980), Cavusgil and Naor (1987), or Seringhaus and Rosson (1989). The research by Dominguez and Sequeira (1993) is limited in scope though it explains why public policymakers should provide enough services and facilities support for firms to promote exports. Many studies are conducted on firm level such as Seringhaus and Rosson (1989, 1991), Roberts and Tybout (1997), Dominguez and Cirigliano (1997), Rauch (1999), Melitz (2003), Arkolakis (2008), Andersson (2007). This study focuses on state level on the purpose of supporting governments on making policies regarding export promotion strategies.

On the state level, it is important to choose a case study to conduct a profound analysis on export promotion since the economy of each country has their own characteristics and each government has a different way to promote export. South Korea is taken as they have performed effectively and achieved outstanding results on

export. Their Korea Trade- Investment Promotion Agency (KOTRA) set foot on 84 countries with 127 branches, which is supposed to gain noticeable contribution to export activities, in addition to other policies, investments, agreements and other export promotion efforts. Furthermore, the Hallyu wave in South Korea is also remarked as an important factor to promote the image of the country, which results in goods purchased in foreign markets. Cognizing the success of South Korea in stimulating trade despite their saturated domestic market, the author assumes that South Korea is a suitable and perfect case to examine the effect of promotion factors on export.

Previous to this research, Wilkinson and Brouthers (2000) conducted similar study with the case of the United States using trade tools such as foreign offices, trade missions, trade shows, and objective market information programs. Later Li and Shrestha (2013) followed them and conducted research about China's trade promotion tools using 4 independent variables: trade offices, trade fairs, training programmes and trade agreement. However, this research is conducted using a cross-section model within a fixed year. There remains the need for panel data level research about the tools that governments can use to stimulate trade.

1.2. Literature Review

1.2.1. Gravity model

For around 60 years, researchers have been using the Gravity equation model for empirical issues in international trade. The gravity model in international economics is similar to the gravity model in other social sciences, positing that bilateral trade depends on the size and the distance between the two participating economies. Inspired by Newton's universal law of attraction which says that the force of attraction between two separate objects is directly proportional to their weight and inversely proportional to the distance between them, applications of the gravity equation in the beginning used positive association between bilateral trade flows and the economic masses of two countries and negative association between bilateral trade flows and distance between them (Blonigen & Wesley, 2018). Gravity model has practical applicability, it is especially successful in prediction and experimental research (Bos & Van de Laar, 2004).

Theoretical basis of the model is based on Anderson (1979), Krugman (1979,1980), Helpman (1981), Bergstrand (1985, 1989), and Deardorff (1998). Based on this pioneer, many applications of the gravity model have been developed in six decades.

Anderson's paper on the empirication gravity model is widely regarded as the first text that provided a theoretical foundation for the concept.[①]

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① Refer to Leamer and Levinsohn (1995)

The application of the gravity model will be discussed in detail in chapter 3.

1.2.2. The case of South Korea

There has been a number of studies about export promotion tools or strategies since the early 1980s such as Berry and Mussen (1980), Cavusgil and Naor (1987), or Seringhaus and Rosson (1989). The research by Dominguez and Sequeira (1993) is limited in scope though it explains why public policymakers should ensure that firms were provided with services and facilities to promote exports. Many studies are conducted on firm level such as Seringhaus and Rosson (1989, 1991), Dominguez and Cirigliano (1997), Arkolakis (2008), Melitz (2003), Andersson (2007), Rauch (1999), Roberts and Tybout (1997). This study focuses on state level on the purpose of supporting governments on making policies regarding export promotion strategies.

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Following previous researchers' footsteps, this research will examine 3 different trade promotion factors that the government can use: the number of foreign offices of KOTRA, existence of free trade agreement, culture influence (Hallyu wave) through the case study of South Korea. South Korea only shares a common language with North Korea so the language barrier factor can be omitted. Among them, the number of foreign offices of KOTRA will be the main focus of the research.

1.2.3. Export promotion in South Korea

There are many factors that can affect international trade: natural factors such as demographics, geography, economic policy factors such as currency unions, embargoes, exports subsidies, FDI, foreign aid, immigration, RTAs, tariffs, trade sanctions, WTO membership, and cultural factors such as cultural ties, entertainment products (movies, comics, music), reputation, sporting events and trust. Each research studies one or several factors to analyze the importance or the role of that variable on trade. Conducting huge

research with too many variables can lead to complicated implication, hence with the focus on origin country as South Korea, the research concentrates on several factors in policy that South Korea comparatively does well with the aim to create a model and a sample for further comparison or benchmarking.

a. Trade promotion organization

Exporters in many countries might have limited resources and knowledge about the destination market, and many obstacles as well as difficulties such as culture, language, procedure, regulations can restrain exporting activities. As a result, many countries have established the Trade Promotion Organization (TPO) as an excellent tool to promote export.

The activities of Trade Promotion can be divided and grouped into 4 categories[②]:

(i) Product and market identification and development

(ii) Promotional activities abroad

(iii)Specialized support services

(iv)Trade information services

Trade Promotion Organization accelerates local companies' access global markets through programmes such as buyer-seller meet, trade shows, exchanging trade missions and offering physical infrastructure for conducting trade events. Trade Promotion Organisations also conduct knowledge-based activities such as conducting market surveys, sectoral studies, seminars and conferences to create awareness on market potential in foreign countries. In some countries such as South Korea, Trade Promotion Organisations provide customized fee-based services such as export

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[②] Refer to Jaramillo, Camilo. 1998. "The basic function of national trade promotion organizations". World Bank intranet FPSI Website

counseling, identifying clients in foreign markets, conducting courses on international trade etc. In most countries, Trade Promotion Organisations function under the aegis of the Ministry of Commerce of the national government. Therefore, Trade Promotion Organisations also administer export promotion schemes of their respective government such as providing export subsidies, quality certification programmes, capacity building etc.

b. Free trade agreement

Free Trade Agreement (FTA) is an agreement between two or more countries or territories for the purpose of trade liberalization on one or several groups of goods by reducing tariffs, facilitate the exchange of goods, services and investments among members in addition to continue to maintain an independent tariff regime for imports from countries outside the FTA. The contents that FTAs refer to usually include: provisions on the reduction of tariff and non-tariff barriers; stipulating the list of goods included in the reduction tariffs, stipulating a roadmap for tariff reduction and regulations on rules of origin.

The development of production and consumption has a strong impact on trade activities in the world. In the past, trading activities mainly exchanged commodity products, tangible goods, nowadays, countries trade all products, services, and intangibles.The transaction methods are also more and more modern, many new commercial services have been born. In addition, activities of investment promotion, cooperation, technology transfer, perfecting customs procedures... in the cooperation relationship between countries, exporters and importers are also promoted. Due to this development, the agreements between the countries in trade are also increasingly expanding the content. If the traditional FTAs are the

agreements on the liberalization of trade in tangible goods, the reduction of tariffs and agreement to eliminate non-tariff barriers, the scope of commitments of the modern FTA includes broader areas such as trade facilitation, investment, public procurement, competition policy, non-tariff measures, trade, trade in services, intellectual property rights, dispute resolution mechanisms, labor, environment, even associated with issues of democracy, human rights or counter-terrorism, etc. Therefore, FTAs are playing an important role in the global economy in general and export particularly.

c. Hallyu (Korean Wave)

In the 1960s, South Korea was still one of the poorest countries in the world, and didn't get much attention from the world. However, thanks to its unyielding will and right development policy, South Korea today is known worldwide as one of the most developed economic powers with the strong influence of the Korean Hallyu whose pioneers are popular TV series not only in East Asia and Asia but globally, with the start from a few typical films such as "What is love", "Winter Sonata", “Dae Jang Geum" and with the emergence of K-pop and the recently incredible success of BTS. Hallyu started to grow rapidly in the 1990s and became a strong wave in Asia in 2003 after the drama “Winter Sonata”. Through its success in spreading Korean culture in the world by music and movies, dramas, South Korea holds a strong tool to promote their country’s image, culture, food, ideology and advertise their domestic products. It can be said that South Korea is using soft power as a strong tool in their strategy, and this tool stimulates exporting products to those who are influenced by Hallyu.

Joseph Nye Jr.- father of the concept “soft power”, a professor at Harvard University, originally defined soft power as “the ability to get others to want what you want, so that they will do it voluntarily without coercion or bribery". In 1999, he introduced a more specific concept: “Soft power is the ideal result obtained through cultural and ideological attractiveness, not the coercive power of a state, which can make another person follow you, or follow your own set of standards of behavior or regime to behave according to your ideas. Soft power relies on the persuasion of information to a great extent.”

This research does not focus on analyzing how South Korea creates soft power, or Hallyu, but on how this Korean wave affects their export to other countries. However, it is hard to convert Hallyu into numeric data. Due to the limit of the data collection, the study uses the number of tourists who come to South Korea as an implication of the effect of Hallyu.

Theoretical Framework

2.1. Research questions

Following previous researchers' footsteps, this research will examine 3 different factors for trade promotion that the government can use: the number of foreign offices of KOTRA, existence of free trade agreement, culture influence (Hallyu wave) through the case study of South Korea.

This study aims to find answers for the following questions: (1) Which export promoting factors the government can use to accelerate export? (2) Among these export promotion factors, which is more comparatively effective? (3) Do these export promotion factors have a mutual impact on each other? (4) In case these promotion factors affect export, is it a one-way impact or does export also have influence on the decision of making these export promotion tools by the government?

These questions are investigated through regression analyses with the base of gravity model that is mentioned in the first chapter. Independent variables include the number of foreign offices of KOTRA, existence of free trade agreement, culture influence (Hallyu wave) and controls include GDP and distance of export destination countries. The detail model will be discussed in detail in chapter 3.

2.2. Hypotheses

Following the above research questions, this research will clarify these hypotheses.

Hypothesis 1. Presence of foreign offices, the existence of free trade agreements, and cultural influence are positively associated with state exports.

Hypothesis 2. Among these factors, FTA has the strongest impact, the next is trade promotion offices and the last is culture influence.

Hypothesis 3. Presence of foreign offices, the existence of free trade agreements, and cultural influence might correlate with each other.

Hypothesis 4. Export can stimulate export and FTAs but do not affect Hallyu.

Methodology

3.1. Data

This study is quantitative research. The models are estimated using a panel of all countries across a 32- year time span from 1988 until 2020, since South Korea held the Olympic 1988 to the recent year 2020 when we face the Covid-19 pandemic. Data will be collected for the various variables. The research uses panel data regression. The dependent variable is the export amount from South Korea to other countries during 1988-2020, named as EXP. TPO refers to the number of KOTRA offices in targeted countries. FTA denotes the free trade agreement between South Korea and destination countries. To measure culture influence, the research uses HAL which means the amount of foreign tourism coming to South Korea which is named as TOURISM. In addition, other factors that can affect exports such as GDP- Gross Domestic Product, POP- population of destination countries will also be used. Finally, Dij denotes the distance between South Korea and the destination country. Variables are summarized in the table below:

Table 1. Variables and data source

Name	Interpretation	Value	Source
EXP	Export from South Korea to destination country	Value	Comtrade
TPO	The number of KOTRA offices in targeted countries	Number (0,1, 2,...)	Compiled based on data from KOTRA
FTA	FTA between South Korea and destination countries	0- No FTA 1- Having FTA	Compiled based on data from MTIE
HAL	Amount of foreign tourists coming to South Korea	Value	KOSIS
GDP	Gross Domestic Product Deflator of partner countries	Value	World Bank
DIS	Gross Domestic Product Deflator of partner countries	Value	CEPII

3.2. Summary Statistics and Trends in Data

3.2.1. Trade Promotion Offices (TPO)

a. General statistics

KOTRA was established in 1962 by benchmarking the Japanese export promotion agency JETRO. At that time, Korea's annual exports amounted to 57 million dollars, and trading partners were only 33 countries. Up to the time when this research is conducted,

there are 127 representative offices of KOTRA in 85 countries all over the world. KOTRA works on trade promotion, investment and industrial technology cooperation between domestic and foreign companies, support for attracting foreign experts, and intergovernmental export contracts.

Table 2. Number of KOTRA's offices by regions

Region③	Country that has many KOTRA offices	Number of offices
North America		9
	USA④	7
Central & South America		13⑤
Europe		23
CIS		10
	Russia	4
China	China	20
Japan	Japan	4
Middle East		15
Africa		9
Southwest Asia		9
	India	6
Southeast Asia & Oceania		15

Source: KOTRA

③ These regions are divided by KOTRA at https://www.investkorea.org/ik-en/cntnts/i-452/web.do

④ KOTRA opens its 8th office in the USA- KOTRA Atlanta in March 2022. However, the research only focuses on the period of 1988-2020, thereby do not count this office.

⑤ KOTRA Caracas (Venezela) was established in 1970 and closed in 2019 amid the escalating political turmoil, hence being counted in this research.

KOTRA divides countries into 10 regions and places their regional headquarter offices there. Except Japan with 4 offices, China with 21 offices, and Europe with 23 offices, other regions have around 9- 15 offices.

Table 3. Number of KOTRA's main programs by regions in 2018

	Number of programs
North America	4
Central & South America	5
Europe	4
CIS	4
China	5
Japan	5
Middle East	5
Africa	5
Southwest Asia	4
Southeast Asia & Oceania	4

Source: Compiled by author using data from KOTRA

The number of KOTRA's activities and programs in each region are quite equal. This means that KOTRA focuses more than regional management and KOTRA's strategy is to manage local offices through regional headquarters and to give each regional headquarter equal support and resources. A noticeable point in this data is that KOTRA also support Hallyu and FTA events such as Export consultation in connection with 2018 MAMA in China, Seminar on the Utilization of Korea- Central America FTA, Korea- Mercosur Economic Cooperation Seminar in Central and South America⑥.

⑥ Refer to Appendix

Including data about the KOTRA office in Caracas (Venezuela) which was closed in 2019 and excluding KOTRA office in Atlanta (USA) which was established in 2022, excluding 5 offices in 5 countries that do not have enough information, we have 122 observations. In addition to Japan and China which are specially separated by KOTRA, the research also pays attention to several countries that KOTRA offices represent a lot including the USA, Russia, India, in addition to China and Japan.

It should be noticed that South Korea established KOTRA offices in the USA at a very early stage.

Table 4. KOTRA's offices in the USA

City	Year of establishment
Chicago	1966
Dallas	1969
Detroit	1996
Los Angeles	1962
New York	1962
Silicon Valley	1967
Washington D.C	1979

Source: Compiled by author using data from KOTRA

In 1967, South Korea agreed to the GATT and since then had comletely made use of the multilateral trading system. Thanks to the GATT system, they also gained from the Generalized System of Preference (GSP)⑦ that helped them export more. During South Korea's development, their only main trading partner was the U.S. In 1970, the US covers almost half of South Korea's exports (Table 5).

⑦ Generalized System of Preferences (GSP) was established by the Trade Act of 1974, being the largest and oldest trade preference program of the US. The purpose of trade preference program is to provide opportunities for poor countries in the world to use trade to stimulate their economies and climb out of the poverty.

Table 5. South Korea's export by trading partners in 1970 and 2002

(Unit: % Share)

	1970		2002	
1	USA	47.3	USA	20.0
2	Japan	28.1	China	14.6
3	Hong Kong	3.3	Japan	9.3
4	Germany	3.2	Hong Kong	6.2
5	Canada	2.3	Taiwan	4.1
6	Netherlands	1.7	Germany	2.6
7	UK	1.6	UK	2.6
8	Singapore	0.9	Singapore	2.5
9	Taiwan	0.9	Malaysia	2.0
10	Thailand	0.6	Indonesia	1.9

Source: Korea International Trade Association, Korea Trade Information Service

The US remained as the biggest trading partner of South Korea in 2002 and later became the second under the rise of China. After the second world war and the North Korea- South Korea war, the US became an important ally of South Korea in security and military and supported South Korea in recovering their economy. Unlike other economic tools, trade promotion offices not only play an economic role but also a diplomatic role in political strategy. In some countries such as Vietnam, KOTRA belongs to the authority of the Korean embassies. This explained the early penetration of the KOTRA office in the US during the 1960s and 1970s.

Table 6. KOTRA's offices in Japan

City	Year of establishment
Tokyo	1964
Osaka	1965
Nagoya	1971
Fukuoka	1988

Source: Compiled by author using data from KOTRA

The same case happened to Japan. Due to the historical relationship with Japan and the fact that export to Japan covered 28% of the total export of South Korea in 1970, South Korea established KOTRA offices in Japan in the early stage from 1964- 1988 and kept Japan as an important "region" in their strategy.

Table 7. KOTRA's offices in Russia, India, Vietnam and China

Country	City	Year of establishment
Russia	Moscow	1989
Russia	Vladivostok	1992
Russia	Novosibirsk	2005
Russia	Sankt Peterburg	2011
India	New Delhi	1962
India	Chennai	1997
India	Mumbai	2004
India	Bengaluru	2014
India	Kolkata	2017
India	Ahmedabad	2019
China	Taipei	1971
China	Beijing	1990
China	Shanghai	1993
China	Dalian	1994

China	Chengdu	1995
China	Hangzhou	1995
China	Wuhan	1996
China	Qingdao	2000
China	Xian	2009
China	Changsha	2011
China	Chongqing	2011
China	Guangzhou	2011
China	Nanjing	2011
China	Shenyang	2011
China	Xiamen	2011
China	Zhengzhou	2011
China	Shenzhen	2014
China	Tianjin	2014
China	Changchun	2019
China	Harbin	2019
Vietnam	Ho Chi Minh	1992
Vietnam	Ha Noi	1996
Vietnam	Da Nang	2019

Source: Compiled by author using data from KOTRA

For the other 4 big export partners, KOTRA gradually established offices in their countries. China and India with their rapid growth are prospective markets to export, and they rank number 1 and number 6 respectively as a destination country for export of South Korea (Table 8). However, Russia does not stand in the top destination countries for exports of South Korea. Vietnam also became one of the most important partners of South Korea recently. This is important to note that there are some countries where South Korea puts more offices than the rest.

Table 8. South Korea's export by trading partners in 2010 and 2020

(Unit: % Share)

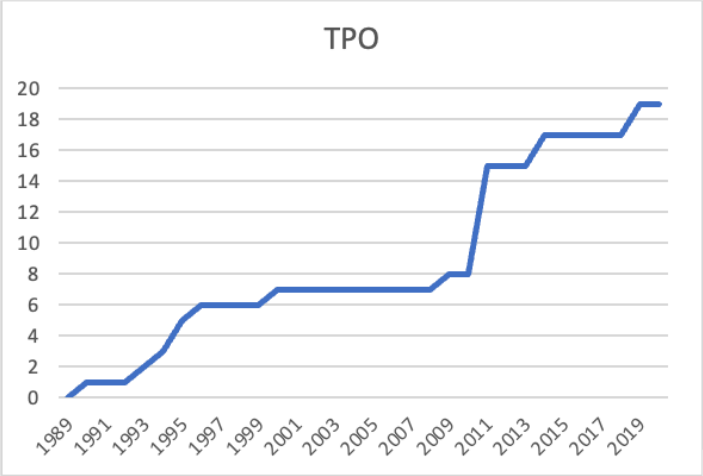
	2010		2020	
1	China	25.9	China	26.7
2	USA	11.1	USA	15.0
3	Japan	6.2	Vietnam	9.8
4	Hong Kong	5.6	Hong Kong	6.2
5	Singapore	3.4	Japan	5.1
6	India	2.5	India	2.4
7	Germany	2.4	Singapore	2.0
8	Vietnam	2.1	Germany	1.9
9	Indonesia	2.0	Malaysia	1.8
10	Mexico	2.0	Mexico	1.7

Source: Calculated based on data from Comtrade

In the top 10 export partner lists in 2010 and 2020, Vietnam and Germany have 3 KOTRA offices in each country. The headquarters of Southeast Asia and Oceania used to be placed in Singapore and replaced by Vietnam in 2018. This implies that KOTRA offices might affect or be affected by trade, or both.

In conclusion, KOTRA's decision to establish and manage their offices seems to be affected by the scale of destination countries (hence prospective export amount). Other political and diplomatic influences might exist but are not strong.

b. The case of China

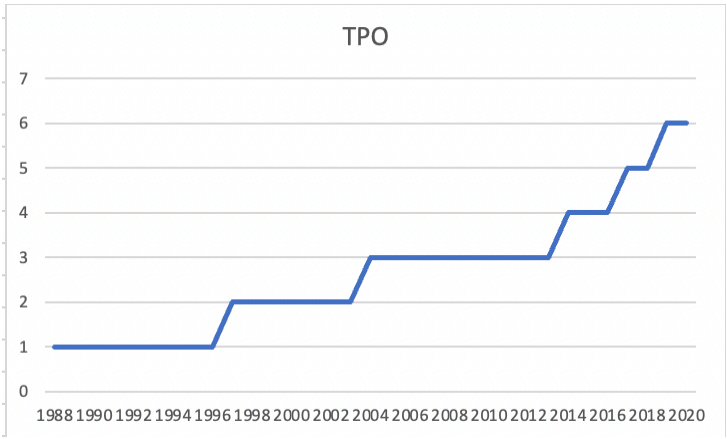


Graph 1-a,b. The number of export and KOTRA offices in China during 1988-2020

Source: Comtrade, KOTRA

It can be noticed that there is a huge increase in South Korea's export to China during 2001- 2015. During this time, the number of KOTRA offices also increases from 7- 17 offices.

c. The case of India



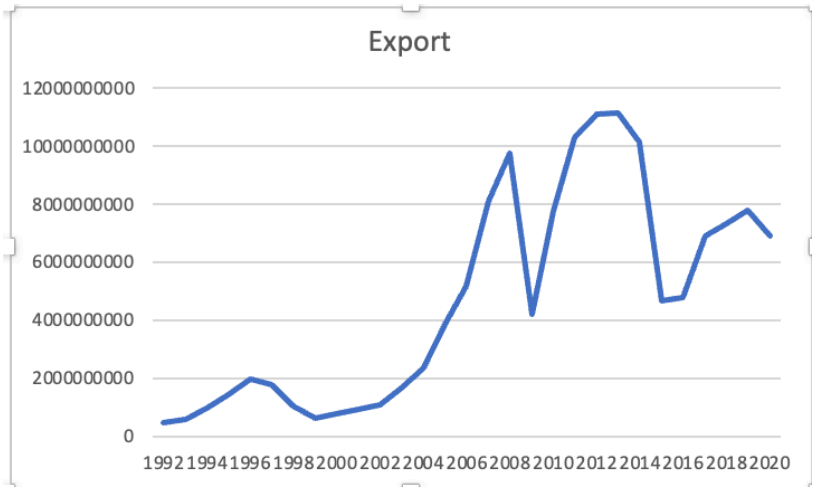
Graph 2-a,b. The number of export and KOTRA offices in India during 1988-2020

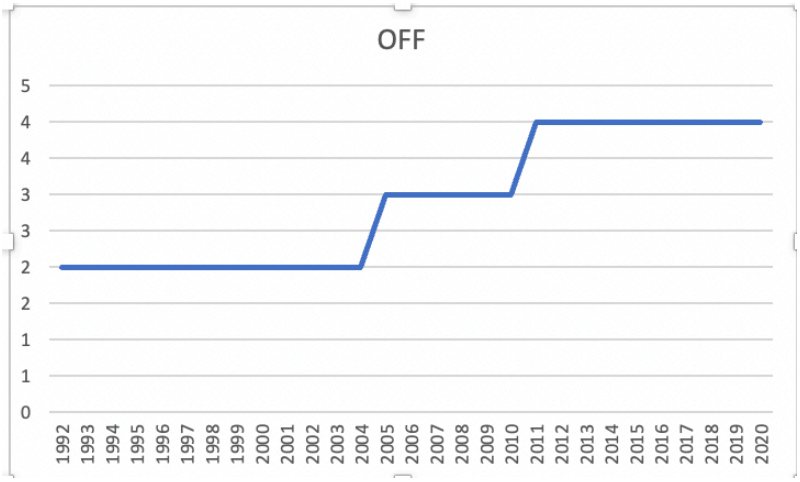
Source: Comtrade, KOTRA

India also observed a rapid increase in exports from South Korea during 2002-2012, then it slightly decreased and increased again until 2018. During this period, the number of KOTRA offices in India increased from 2 to 6 offices.

d. The case of Russia

For Russia, the export growth from South Korea increased strongly from 2000 to 2008, and fluctuated during 2008-2018. During this time, the number of KOTRA offices increased from 2 to 4 offices.



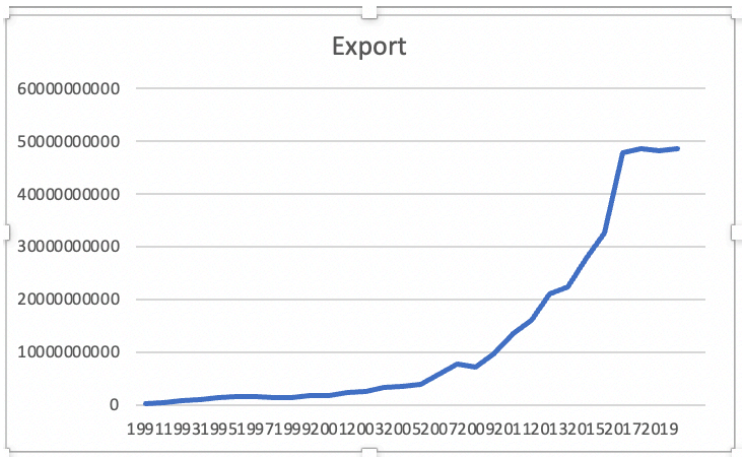


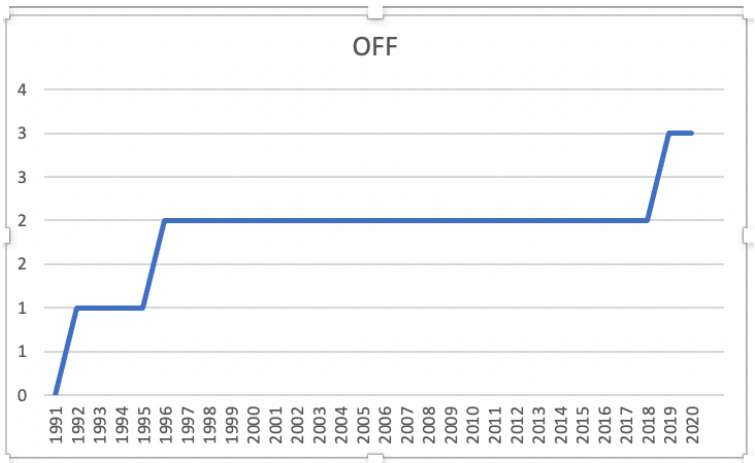
Graph 3-a,b. The number of export and KOTRA offices in Russia during 1988-2020

Source: Comtrade, KOTRA

e. The case of Vietnam

Vietnam has become one of the important partners in export for South Korea. The number of exports from South Korea to Vietnam keeps increasing from 1991 to 2017. The number of KOTRA offices increased from 1 to 3 offices, with the new establishment of the KOTRA Da Nang office in 2019. Kotra also moved their headquarter in the Southeast and Pacific Oceania region from Singapore to Vietnam in 2018.





Graph 4-a,b. The number of export and KOTRA offices in Vietnam during 1988-2020

Source: Comtrade, KOTRA

3.2.2. Free Trade Agreements (FTA)

The trend of regionalism emerged in the 1990s and continued to develop until the 21st century. Besides the basic regulations of the WTO, countries join free trade agreements to stimulate bilingual or regional trade. Korean policy makers also did not put their country out of this global trend, with the start of its first free trade

agreement with Chile in 2003. Until now, South Korea has 15 Free Trade Agreements in effect as the followings:

Table 9. South Korea's FTA

No	FTA with	Country	Year of Effect
1	Chile	Chile	2004
2	EFTA	Iceland, Liechtenstein, Norway, Switzerland	2006
3	Singapore	Singapore	2006
4	ASEAN	Malaysia, Singapore, Vietnam, Myanmar, Indonesia (2007), the Philippines, Brunei, Laos, Cambodia (2008), Thailand (2010)	Starting from 2007
5	India	India	2010
6	EU	Austria, Belgium, England, Czech, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherland, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Bulgaria, Rumania	2011
7	Peru	Peru	2011
8	USA	USA	2012
9	Turkey	Turkey	2013
10	Australia	Australia	2014
11	China	China	2015
12	New Zealand	New Zealand	2015

13	Vietnam	Vietnam	2015
14	Canada	Canada	2015
15	Colombia	Colombia	2015

Source: Ministry of Trade, Industry and Energy, Korea

It can be seen that Korea started free trade agreements with smaller countries then formed FTAs with larger trading countries. This is also homogeneous with the observation and prediction of Jung in his research in 2003[⑧].

The trade policy of South Korea towards FTA can be divided into 2 stages. Before 2002, South Korea did not have intention to join any FTA or take part in any other trong form of economic integration (Jung, 2003). Reasons for this avoidance come from many different aspects originated before and during that period. First, the development level of each East Asia country was much different as shown in table 10.

Table 10. GNI Per Capita in East Asian Countries

(Unit: US$)

	1980	2002
South Korea	1,598	10,013
Japan	9,257	31,868
China	307	970

Source: Bank of Korea (2003b), Monthly Statistical Bulletin

Second, each country pursued a different economic system: while South Korea and Japan had market economies, China stayed loyal to its socialist economy. Third, the history of Japanese occupation by 1945 was still an obstacle for these East Asia countries to come closer to each other. Another partner that South

⑧ Refer to "Free Trade Agreements and Korea's Trade Policy" (Jung, 2003)

Korea could consider in this period was the US. However, during South Korea's developmental stage, they mostly traded with the US and Japan as discussed in 3.2.1. An FTA with the US might have accelerated exports but it was not essential because the US gave South Korea advantage under its GSP status which lasted until 1989. Instead, South Korea participated in rudimentary and informal regional economic cooperation body, such as APEC. They are one of the 12 founding members at the foundation of APEC in Canberra, Australia in 1989. After the WTO's inception in 1995, the South Korean government concluded agreements on trade in information technology products, financial services, and basic telecommunications services with its trading partners. However, the trend of regional free trade agreements with the participation of South Korea's main trade partners- the USA with North and Southern American countries, Japan with Singapore, and Mexico urged South Korea to participate in these agreements.

3.2.3. Hallyu- Korean wave (HAL)

Due to the limitation of data, the Korean wave will be implied by the number of tourists coming to South Korea. However, data is only available for 52 countries within the period of 2003- 2020.

Table 11. Tourists to South Korea by country

(Unit: % Share)

	2003		2010		2020	
1	Japan	54.1	China	27.5	Japan	46.7
2	US	9.5	Japan	24.8	China	16.0
3	China	6.0	Taiwan	9.8	US	7.5
4	Taiwan	5.8	US	6.4	Taiwan	6.3
5	Hong Kong	4.6	Hong Kong	5.3	Hong Kong	3.5
6	Malaysia	2.3	Thailand	3.6	Thailand	3.3
7	Singapore	1.9	Philippines	2.8	Singapore	1.5
8	Russian	1.8	Malaysia	2.5	Malaysia	1.5
9	UK	1.5	Russia	2.4	Australia	1.4
10	Canada	1.4	Indonesia	2.2	Canada	1.3

Source: Calculated based on data from KOSIS

Top 5 countries- Japan, China, the US, Taiwan, Hong Kong that cover the greatest number of tourists to South Korea remain the same for 17 years, despite a slight change in the order. This can be resulted by the complicated relationship, political and historical conflicts between South Korea- Japan- China and their relationship with the US. This research does not analyze this issue but to focus on the relationship between these numbers and export. All of them are North America or Southeast Asia and Oceania. Except the US and Canada, the rest are the closest countries to South Korea and have high or slightly lower living standards than South Korea. This is because South Korea belongs to the top expensive countries in the world, especially Seoul which ranks in top 10 expensive capitals. Expenses to travel to South Korea are not cheap for developing countries.

Comparing table 11 and table 8, countries in top 5 are quite

similar and in top 10, Singapore and Malaysia appear in both tables.

Through data analysis, we can assume that there is no clear evidence about the relationship between TPO, FTA and HAL, and they all seem to affect exports. While TPOs can be related to export and the scale of the destination countries with the preferences from big to small, FTAs were made with the contrast preferences from small countries to larger countries, and at last HAL might be influenced by distance and the scale of the countries. We observe that the scale of the partner countries exists and influences all 3 variables. In addition, FTA started in 2003, in a similar timeline with the start of Hallyu wave after Winter Sonata.

3.3. Model

The study uses the gravity model as the main tool to analyze the effect of variables in hypotheses on export.

$$\ln X_{ij,t} = \ln E_{j,t} + \ln Y_{i,t} - \ln Y_t + (1-\sigma)\ln t_{ij,t} - (1-\sigma)\ln P_{j,t} - (1-\sigma)\ln \Pi_{i,t} + \varepsilon_{ij,t}$$

This is the most popularly gravity model used to study the effects of various different factors of bilateral trade. However, gravity estimates still face up with biases and even inconsistency. For example, the OLS approach cannot take into account zero trade value when it is calculated in a logarithmic form. Another inconsistency was discovered by Santos Silva and Tenreyro (2006). Therefore, Piermartini and Yotov (2016) suggest using panel data to obtain structural gravity estimates if possible. In addition, panel data with intervals will be better for adjustment in trade flows. Alternative intervals were suggested to be used by Olivero and Yotov (2012) because they experimented and found that using lagged variables

with period of 3, 4, or 5 years brings the same results with standard gravity variables. They also suggest using time-varying fixed effects and pair fixed effects to control the unobservable multilateral resistances. Finally, Poisson Pseudo Maximum Likelihood (PPML) is encouraged to be used as it accounts for heteroscedasticity, which often plagues trade data (Santos Silva and Tenreyro, 2006). The Poisson Pseudo Maximum Likelihood can make use of the information contained in the zero trade flows issues. It also can be used to calculate theory- consistent general equilibrium effects of trade policy (Anderson et al, 2015b; Larch and Yotov, 2016b).

The equation is assumed as follows:

$$\ln EXP_{ij,t} = b0 + b1\ TPO_i + b2\ FTA_{ii,t} + b3 \ln HAL_{ij,t} + b4 \ln GDP_{i,t} + b5 \ln DIS_{ij} + e$$

Here i denotes South Korea, j denotes the destination country, ln- denotes the natural logarithm operator, and the variables are defined as in 3.1.

Following the data trend in 3.2, in addition to general analysis, the research also studies 2 stages: from 1988-2003- focus on the impact of trade promotion offices (when South Korea has not made FTA and Hallyu wave had not reached its peak) and from 2003-2020 with the existence of FTAs and Hallyu. In addition, the research examines the effect of trade promotion offices through lagged variables to see whether it has immediate effect or lagged effect. Furthermore, the research will compare the difference between three groups of countries: Group 0: Countries that KOTRA offices present but the number of KOTRA offices does not change during 1988-2020; Group 1: countries that the number of KOTRA offices increased 1 office during the period of 1988-2020; and Group 3: countries that the number of KOTRA offices increased more than 2 offices during

the period of 1988-2020. Last, the research creates interaction variables to see their effects on export.

Results

4.1. Regression result

4.1.1. General regression

Table 12. Gravity estimates on export

	(1) Traditional Gravity model	(2) TPO	(3) TPO + FTA	(4) TPO + FTA + HAL
TPO		0.516***	0.436***	0.047***
		(0.035)	(0.035)	(0.020)
FTA			1.244***	0.179*
			(0.073)	(0.044)
LnHAL				0.307***
				(0.039)
LnGDP	0.086***	0.088***	0.110***	0.010
	(0.010)	(0.010)	(0.010)	(0.014)
LnDIS	-1.218***	-0.950***	-0.935***	-0.063***
	(0.343)	(0.287)	(0.268)	(0.238)
Constant	28.090***	25.400***	25.054***	18.778***
	(3.106)	(2.607)	(2.435)	(2.114)
Observations	6,167	6,167	6,167	881
R2	0.010	0.038	0.081	0.220

Source: Authors' calculations

Notes: The absolute values of the t-scores are in parentheses.

** p<0.05, ** p<0.01, *** p<0.001*

From the regression result, TPO has a positive impact on export. FTA and Hallyu also significantly have a positive impact on exports. When we add FTA and HAL to the model, TPO's impact on export decreases. FTA has the strongest impact on export.

4.1.2. Regression with lagged variables

Table 13. Gravity estimates on export with TPO with lagged variables

	(5) No lag	(6) One lag	(7) Two lags	(8) Three lags
TPO	0.377***	0.330**	0.324**	0.281**
	(0.035)	(0.129)	(0.125)	(0.117)
TPO_LAG1		0.025	-0.027	-0.032
		(0.130)	(0.168)	(0.155)
TPO_LAG2			0.039	-0.012
			(0.013)	(0.033)
TPO_LAG5				0.049
				(0.077)
FTA	1.227***	1.145***	1.059***	0.856***
	(0.072)	(0.071)	(0.069)	(0.065)
LnGDP	0.105***	0.076***	0.054***	0.018
	(0.010)	(0.010)	(0.010)	(0.011)
LnDIS				-0.063
				(0.238)
Constant	16.714***	16.991***	17.219***	17.665***
	(0.076)	(0.078)	(0.080)	(0.082)
Observations	6,167	5,970	5,773	5,184
R2	0.082	0.071	0.064	0.050

Source: Authors' calculations

Notes: The absolute values of the t-scores are in parentheses.

** p<0.05, ** p<0.01, *** p<0.001*

Many researchers include lagged effects of the policy variables in gravity regressions. Column (5) does not include lag while column (6) includes a single lag, column (7) has 2 lags and column (8) allows 3 lags. We note that once lags are introduced, these lagged variables are not statistically significant while the original TPO variables still stay insignificant. This implies that the trade promotion office has an immediate effect on export.

4.1.3. Regression by group of countries

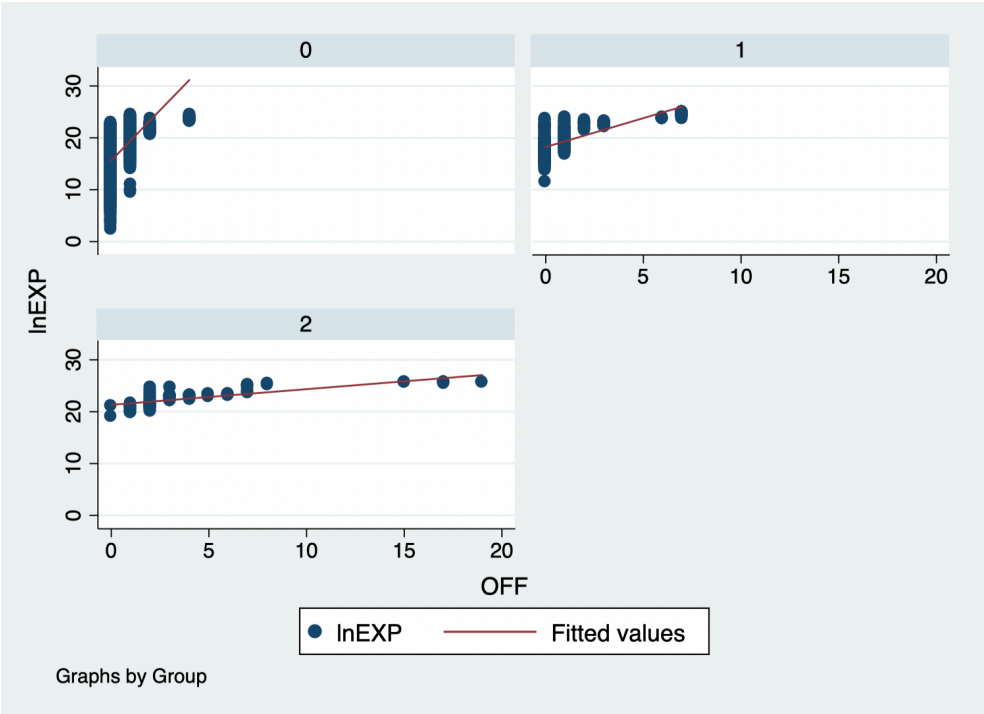
Table 14. Gravity estimates on export by group

	(3) All	(9) Group 0	(10) Group 1	(11) Group 2
TPO	0.436***	1.306***	0.568***	0.258***
	(0.035)	(0.389)	(0.081)	(0.023)
FTA	1.244***	1.156***	0.813***	1.622***
	(0.073)	(0.081)	(0.147)	(0.199)
LnGDP	0.110***	0.068***	0.175***	0.397***
	(0.010)	(0.020)	(0.024)	(0.084)
LnDIS	-0.935***	-0.012	-0.069	-0.279*
	(0.268)	(0.051)	(0.070)	(0.132)
Constant	25.054***	18.450***	16.076***	20.952***
	(2.435)	(0.670)	(0.692)	(1.369)
Observations	6,167	1,581	804	124
R2	0.081	0.112	0.427	0.657

Source: Authors' calculations

Notes: The absolute values of the t-scores are in parentheses.

** p<0.05, ** p<0.01, *** p<0.001*



In this part, we divide countries into 3 groups: Group 0: Countries that KOTRA offices present but the number of KOTRA offices does not change during 1988-2020; Group 1: countries that the number of KOTRA offices increased 1 office during the period of 1988-2020; and Group 3: countries that the number of KOTRA offices increased more than 2 offices during the period of 1988-2020. Group 3 includes China, India, Russia and Vietnam as we discussed above. TPO has the strongest impact in group 0, next is group 1 and the last is group 2. This means that when the number of KOTRA offices increase, the impact of each office on export decreases.

4.1.4. Relationship between TPO, FTA and HAL

Table 15. Correlation between variables

	EXP	TPO	FTA	HAL	POP	DIS
EXP	1.00					
TPO	0.82*	1.00				
FTA	0.18*	0.19*	1.00			
HAL	0.70*	0.70*	-0.01	1.00		
POP	-0.04*	0.07*	0.03*	-0.20*	1.00	
DIS	-0.19*	0.23*	-0.15*	-0.34*	-0.06*	1.00

Source: Authors' calculations

TPO has strong positive correlation with HAL, FTA and negative correlation with DIS while HAL has strong negative relationship with DIS. It has been analyzed in the part about TPO that TPO engages in many activities including stimulating FTA and Hallyu through its programs, hence TPO correlates with many other variables. The study creates interaction variables with couples of variables that have correlation above 0.15 and sees the result.

Table 16. Gravity estimates on export with TPO, FTA and HAL with interaction variables

	(12) PPML	(13) PPML FE	(14) PPML FE	(15) PPML FE
TPO	0.010	-0.000	0.009	-0.002
	(0.002)***	(0.001)	(0.002)***	(0.001)*
FTA	0.033	0.033	0.032	0.018
	(0.009)***	(0.006)***	(0.009)***	(0.005)***
LnHAL	0.024	0.012	0.026	0.016
	(0.002)***	(0.002)***	(0.002)***	(0.003)***
TPOHAL	- 0.000	- 0.000	- 0.000	- 0.000
	(0.000)***	(0.000)***	(0.000)***	(0.000)*
TPODIS	0.000	0.000	0.000	0.000
	(0.000)***	(0.000)*	(0.000)***	(0.000)*
TPOFTA	-0.003	-0.001	-0.002	-0.000
	(0.001)*	(0.000)	(0.001)	(0.000)
FTADIS	-0.000	-0.000	-0.000	-0.000
	(0.000)*	(0.000)***	(0.000)	(0.000)***
HALDIS	-0.000	-0.000	-0.000	-0.000
	(0.000)***	(0.000)	(0.000)***	(0.000)
Constant	2.791	2.828	2.772	2.900
	(0.015)***	(0.011)***	(0.015)***	(0.032)***
Observations	881	881	881	881
R2	0.016	0.024	0.016	0.025
Importer-time FE	No	Yes	No	Yes
Time FE	No	No	Yes	Yes

Source: Authors' calculations

Notes: The absolute values of the t-scores are in parentheses.

** p<0.05, ** p<0.01, *** p<0.001*

Without importer-time FE, all TPO, FTA and HAL have a positive impact on export, especially in the first regression, all variables are significant. Among them, FTA has the strongest impact, the next is HAL and the last one is TPO.

4.2. Analysis

Trade promotion offices have a positive effect on export. The establishment of a trade promotion office has immediate impact on export without lag. However, after the existence of a KOTRA office in the partner country, if South Korea establishes a new office in that destination country, the effect of the trade promotion office on export decreases.

As the research focuses on factors that can be controlled by the government, it is understandable that these factors: trade promotion offices, FTAs and Hallyu have impact on export but also be generated or established based on the increase of export. TPOs also correlate to the distance to the destination countries, and also correlates and stimulates the influence of FTAs and Hallyu through its programs and events. FTAs logically correlate with distance, and at last HAL correlates with distance and population. It is logical that a country with a larger population might have more tourists visiting South Korea.

This implies that establishing a trade promotion office in a destination country is important and significant for export. However, instead of increasing the number of trade promotion offices in the destination countries, it is more effective to use trade promotion offices to stimulate other factors that can accelerate export and use this combination of factors to grow exports.

Conclusion

5.1. Implication

This study investigates several questions regarding the links and interactions between export promotion factors such as trade promotion offices, FTAs and Hallyu and export for the case of South Korea with the main focus on the presence of KOTRA offices. The primary questions concern the impact of trade promotion offices, FTAs and Hallyu on export and their mutual influence, as well as how the number of KOTRA offices affects export.

Rather than finding something new, the research checks the influence of economic and policy factors on export based on the classic gravity model and all factors positively affect export as expected. However, observing the relationship among factors and between factors and export still bring some important implications. Instead of increasing the number of trade promotion offices in the destination countries, it is more effective to use trade promotion offices to stimulate other factors that can accelerate export and use this combination of factors to grow exports.

5.2. Policy suggestion

Up to 2015, there were only 36 countries that established trade promotion offices. This amount is still small compared to the number of countries in the world. South Korea ranks third in the scale of their trade promotion offices. Compared to the size and the market

size of the country, South Korea has proved themselves as an excellent export policy maker, and trade promotion offices play an important role in this success.

Table 17. Trade promotion organisations in the world

No	Country	Name of the TPO	No of offices
1	UK	UK Trade and Investment (UKTI)	227
2	Canada	Canadian Trade Commissioner Service (TCS)	161
3	South Korea	Korea Trade - Investment Promotion Agency (KOTRA)	127
4	Austria	Advantage Austria	115
5	Netherlands	Netherlands Enterprise Agency (RVO.NL)	110
6	Spain	ICEX Spain Trade and Investment (ICEX)	97
7	Australia	Australian Trade Commission (AUSTRADE)	81
8	France	Business France	80
9	Italy	Italian Trade Agency (ITA)	78
10	Denmark	Ministry of Foreign Affairs of Denmark – The Trade Council	73
11	Finland	Finpro	64
12	Chile	Export Promotion Directorate	53
13	Sweden	Business Sweden - The Swedish Trade & Invest Council	50
14	Germany	Germany Trade & Invest	49
15	Mexico	ProMéxico	48
16	Portugal	AICEP Portugal Global (AICEP)	46

17	Malaysia	Malaysia External Trade Development Corporation (MATRADE)	44
18	New Zealand	New Zealand Trade & Enterprise (NZTE)	38
19	Norway	Innovation Norway	35
20	Ecuador	Institute for the Promotion of Exports and Investments (Pro Ecuador)	31
21	Philippines	Export Marketing Bureau (EMB)	28
22	Colombia	PROCOLOMBIA	26
23	Switzerland	Switzerland Global Enterprise (S-GE)	21
24	China	China Council for the Promotion of International Trade (CCPIT)	17
25	Latvia	Investment and Development Agency of Latvia (LIAA)	17
26	Cyprus	Ministry of Energy, Commerce, Industry and Tourism (MECIT)	11
27	Myanmar	Department of Trade Promotion, Ministry of Commerce	10
28	United Arab Emirates	Dubai Exports	10
29	Tunisia	Export Promotion Centre (CEPEX)	9
30	Brazil	Brazilian Trade and Investment Promotion Agency	9
31	Estonia	Enterprise Estonia	9
32	Azerbaijan	Azerbaijan Export and Investment Promotion Foundation (AZPROMO)	6
33	Bahrain	Bahrain Economic Development Board (EDB)	6

34	Samoa	Trade Division, Ministry of Foreign Affairs and Trade (MFAT)	6
35	Mauritius	Enterprise Mauritius	3
36	Nigeria	Nigerian Export Promotion Council	2

Source: TPO Directory-2015, International Trade Center (ITC)

With consideration to the results from this study, first and foremost, countries should establish trade promotion offices and use them as a bridge to understand targeted countries, their culture, market, characteristic and demand, hence build suitable and effective strategies to export to those markets. Second, they should join more free trade agreements or regional trade agreements to accelerate their export activities. Third, they can learn from South Korea to use soft power, or culture as a tool to promote their countries' products to foreign countries.

5.3. Limitation

There are some limitations to this study that need to be addressed. Due to the limit of access to data, using tourists as an implication of Hallyu might lead to errors as tourists can be affected by other factors but Hallyu. In addition, the research has not explained the differences in the results when applying different fixed effects. The research should be extended by using a more comprehensive model with more accurate variables and data. All in all, this study provides some interesting results on the impact of trade promotion offices, FTA and Hallyu on export and their mutual relationship. Taking South Korea as a case study still remains as a good choice as South Korea's history and economy have a lot of stories to be told. Due to the limit of the scope of the research, this paper cannot take a deeper analysis on these reasons and

relationships. One additional limit is that the research does not count for the cost to establish trade promotion offices compared to benefit. The expense to establish trade promotion offices can be a burden to small and developing countries.

Bibliography

1. Anderson, James E. 1979. A Theoretical Foundation for the Gravity Equation. American Economic Review. American Economic Association. vol. 69(1). pages 106-116. March.
2. Bergstrand, Jeffrey. 1989. The Generalized Gravity Equation, Monopolistic Competition, and the Factor-Proportions Theory in International Trade. The Review of Economics and Statistics, 71(1), 143–153. https://doi.org/10.2307/1928061
3. Bergstrand, Jeffrey. 1989. The Generalized Gravity Equation, Monopolistic Competition, and the Factor-Proportions Theory in International Trade. Review of Economics and Statistics, 71, 143-153. http://dx.doi.org/10.2307/1928061
4. Blonigen, Bruce A., & Wesley W. Wilson. 2018. Handbook of international trade and transportation.
5. Bob, Jaap & Van de Laar, Mindel. 2004. Explaining Foreign Direct Investment in Central and Eastern Europe: An Extended Gravity Approach. Netherlands Central Bank, Research Department. DNB Working Papers 008.
6. Cavusgil, S.T. and Naor, J. 1987. Firm and Management Characteristics as Discriminators of Export Marketing Activity. Journal of Business Research, 15, 221-235
7. Coughlin, Cletus & Cartwright, Phillip. 2006. An examination of state foreign export promotion and manufacturing exports. Journal of Regional Science. 27. 439 - 449.
8. Diamantopoulos, Adamantios & Schlegelmilch, Bodo & Tse, K.Y. 1993. Understanding the Role of Export Marketing Assistance:

Empirical Evidence and Research Needs. European Journal of Marketing. 27. 5-18.

9. Georgia Department of Economic Development. 2022. Korea Trade-Investment Promotion Agency (KOTRA) Opens First Atlanta Office. Accessed April 5. https://www.georgia.org/press-release/korea-trade-investment-promotion-agency-kotra-opens-first-atlanta-office.
10. Helpman, Elhanan. 1981. International trade in the presence of product differentiation, economies of scale and monopolistic competition : A Chamberlin-Heckscher-Ohlin approach. Journal of International Economics, Elsevier, vol. 11(3), pages 305-340, August.
11. Jaramillo, Camilo. 1998. The basic function of national trade promotion organizations. World Bank intranet FPSI Website.
12. Jung, Taik Hyun. 2003. Free Trade Agreement and Korea's Trade Policy. Journal of International and Area Studies. Volume 10, Number 2, 2003, pp. 21-37.
13. KOTRA. 2018. KOTRA Sustainability and Human Rights Management Report.
14. KOTRA. KOTRA's Overseas Offices. Accessed March 3. https://www.investkorea.org/ik-en/cntnts/i-453/web.do.
15. Krugman, Paul & Obstfeld, Maurice. 2003. International economics: theory and policy.
16. Krugman, Paul. 1979. Increasing returns, monopolistic competition, and international trade. Journal of International Economics. Elsevier. Vol. 9(4). Pages 469-479. November.
17. Krugman, Paul. 1980. Scale Economies, Product Differentiation, and the Pattern of Trade. American Economic Review. American Economic Association, vol. 70(5), pages 950-959, December.

18. Leamer, Edward & Levingsohn, J.. 1994. International Trade Theory: The Evidence.
19. Li, Zhuo & Shrestha, Silu. 2013. Impact of International Trade Fair Participation on Export: An Empirical Study of China Based on Treatment Effect Model. Journal of Convention & Event Tourism. 14. 236-251.
20. María Pía Olivero & Yoto V. Yotov, 2012. Dynamic gravity: endogenous country size and asset accumulation. Canadian Journal of Economics, Canadian Economics Association, vol. 45(1), pages 64-92, February.
21. Ministry of Trade, Industry and Energy (Korea). Accessed March 15. https://english.motie.go.kr/en/if/ftanetwork/ftanetwork.jsp.
22. Nye, Joseph S. 1990. Soft Power. Foreign Policy, 80, 153–171. https://doi.org/10.2307/1148580
23. Office of the United States Trade Representative. Generalized System of Preferences (GSP). Accessed March 4. https://ustr.gov/issue-areas/trade-development/preference-programs/generalized-system-preference-gsp.
24. Piermartini, Roberta & Yotov, Yoto, 2016. "Estimating Trade Policy Effects with Structural Gravity," School of Economics Working Paper Series 2016-10, LeBow College of Business, Drexel University.
25. Ravenstein, E.G. 1885. The Laws of Migration. Journal of the Statistical Society of London, 48, 167-235.
26. Santos Silva & Silvana Tenreyro, 2006. The Log of Gravity. The Review of Economics and Statistics, MIT Press, vol. 88(4), pages 641-658, November.
27. Seringhaus, F.H., Rosson, P.J. 1991. Export Promotion and Public Organizations: State-of-the-Art. In: Seringhaus, F.H.R., Rosson,

P.J. (eds) Export Development and Promotion: The Role of Public Organizations. Springer, Boston, MA.

28. Tinbergen, J. 1962. Shaping the World Economy: Suggestions for an International Economic Policy. The Twentieth Century Fund, New York.
29. Wilkinson, Timothy & Brouthers, Lance. 2000. An Evaluation of State Sponsored Export Promotion Programs. Journal of Business Research. 47. 229-236.
30. Wooldridge, J. M. 2009. Introductory Econometrics: A Modern Approach. South-Western. ISBN: 9780324581621
31. Yonhap News. 2019. KOTRA withdraws Venezuela office amid turmoil. Accessed March 3. https://en.yna.co.kr/view/AEN20190130000800320.

Appendix

Table 1. Variables and data source

Name	Interpretation	Value	Source
EXP	Export from South Korea to destination country	Value	Comtrade
TPO	The number of KOTRA offices in targeted countries	Number (0,1, 2,...)	Compiled based on data from KOTRA
FTA	FTA between South Korea and destination countries	0- No FTA 1- Having FTA	Compiled based on data from MTIE
HAL	Amount of foreign tourists coming to South Korea	Value	KOSIS
GDP	Gross Domestic Product Deflator of partner countries	Value	World Bank
POP	Population of destination countries	Value	World Bank
DIS	Gross Domestic Product Deflator of partner countries	Value	CEPII

Table 2. Number of KOTRA's offices by regions

Region	Country that has many KOTRA offices	Number of offices
North America		9
	USA	7
Central & South America		13
Europe		23
CIS		10
	Russia	4
China	China	21
Japan	Japan	4
Middle East		15
Africa		9
Southwest Asia		9
	India	6
Southeast Asia & Oceania		15

Table 3. Number of KOTRA's main programs by regions in 2018

	Number of programs
North America	4
Central & South America	5
Europe	4
CIS	4
China	5
Japan	5
Middle East	5
Africa	5
Southwest Asia	4
Southeast Asia & Oceania	4

Table 4. KOTRA's offices in the USA

City	Year of establishment
Chicago	1966
Dallas	1969
Detroit	1996
Los Angeles	1962
New York	1962
Silicon Valley	1967
Washington D.C	1979

Source: Compiled by author using data from KOTRA

Table 5. South Korea's export by trading partners in 1970 and 2002

(Unit: % Share)

	1970		2002	
1	USA	47.3	USA	20.0
2	Japan	28.1	China	14.6
3	Hong Kong	3.3	Japan	9.3
4	Germany	3.2	Hong Kong	6.2
5	Canada	2.3	Taiwan	4.1
6	Netherlands	1.7	Germany	2.6
7	UK	1.6	UK	2.6
8	Singapore	0.9	Singapore	2.5
9	Taiwan	0.9	Malaysia	2.0
10	Thailand	0.6	Indonesia	1.9

Source: Korea International Trade Association, Korea Trade Information Service

Table 6. KOTRA's offices in Japan

City	Year of establishment
Tokyo	1964
Osaka	1965
Nagoya	1971
Fukuoka	1988

Source: Compiled by author using data from KOTRA

Table 7. KOTRA's offices in Russia, India and China

Country	City	Year of establishment
Russia	Moscow	1989
Russia	Vladivostok	1992
Russia	Novosibirsk	2005
Russia	Sanktpeterburg	2011
India	New Delhi	1962
India	Chennai	1997
India	Mumbai	2004
India	Bengaluru	2014
India	Kolkata	2017
India	Ahmedabad	2019
China	Taipei	1971
China	Beijing	1990
China	Shanghai	1993
China	Dalian	1994
China	Chengdu	1995
China	Hangzhou	1995
China	Wuhan	1996
China	Qingdao	2000

China	Xian	2009
China	Changsha	2011
China	Chongqing	2011
China	Guangzhou	2011
China	Nanjing	2011
China	Shenyang	2011
China	Xiamen	2011
China	Zhengzhou	2011
China	Shenzhen	2014
China	Tianjin	2014
China	Changchun	2019
China	Harbin	2019

Source: Compiled by author using data from KOTRA

Table 8. South Korea's export by trading partners in 2010 and 2020

(Unit: % Share)

	2010		2020	
1	China	25.9	China	26.7
2	USA	11.1	USA	15.0
3	Japan	6.2	Vietnam	9.8
4	Hong Kong	5.6	Hong Kong	6.2
5	Singapore	3.4	Japan	5.1
6	India	2.5	India	2.4
7	Germany	2.4	Singapore	2.0
8	Vietnam	2.1	Germany	1.9
9	Indonesia	2.0	Malaysia	1.8
10	Mexico	2.0	Mexico	1.7

Source: Calculated based on data from Comtrade

Table 9. South Korea's FTA

No	FTA with	Country	Year of Effect
1	Chile	Chile	2004
2	EFTA	Iceland, Liechtenstein, Norway, Switzerland	2006
3	Singapore	Singapore	2006
4	ASEAN	Malaysia, Singapore, Vietnam, Myanmar, Indonesia (2007), the Philippines, Brunei, Laos, Cambodia (2008), Thailand (2010)	Starting from 2007
5	India	India	2010
6	EU	Austria, Belgium, England, Czech, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherland, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Bulgaria, Rumania	2011
7	Peru	Peru	2011
8	USA	USA	2012
9	Turkey	Turkey	2013
10	Australia	Australia	2014
11	China	China	2015
12	New Zealand	New Zealand	2015
13	Vietnam	Vietnam	2015
14	Canada	Canada	2015

15	Colombia	Colombia	2015

Source: Ministry of Trade, Industry and Energy, Korea

Table 10. GNI Per Capita in East Asian Countries

(Unit: US$)

	1980	2002
South Korea	1,598	10,013
Japan	9,257	31,868
China	307	970

Source: Bank of Korea (2003b), Monthly Statistical Bulletin

Table 11. Tourists to South Korea by country

(Unit: % Share)

	2003		2010		2020	
1	Japan	54.1	China	27.5	Japan	46.7
2	US	9.5	Japan	24.8	China	16.0
3	China	6.0	Taiwan	9.8	US	7.5
4	Taiwan	5.8	US	6.4	Taiwan	6.3
5	Hong Kong	4.6	Hong Kong	5.3	Hong Kong	3.5
6	Malaysia	2.3	Thailand	3.6	Thailand	3.3
7	Singapore	1.9	Philippines	2.8	Singapore	1.5
8	Russian	1.8	Malaysia	2.5	Malaysia	1.5
9	UK	1.5	Russia	2.4	Australia	1.4
10	Canada	1.4	Indonesia	2.2	Canada	1.3

Source: Calculated based on data from KOSIS

Table 12. Gravity estimates on export

	(1) Traditional Gravity model	(2) TPO	(3) TPO + FTA	(4) TPO + FTA + HAL
TPO		0.516***	0.436***	0.047***
		(0.035)	(0.035)	(0.020)
FTA			1.244***	0.179*
			(0.073)	(0.044)
LnHAL				0.307***
				(0.039)
LnGDP	0.086***	0.088***	0.110***	0.010
	(0.010)	(0.010)	(0.010)	(0.014)
LnDIS	-1.218***	-0.950***	-0.935***	-0.063***
	(0.343)	(0.287)	(0.268)	(0.238)
Constant	28.090***	25.400***	25.054***	18.778***
	(3.106)	(2.607)	(2.435)	(2.114)
Observations	6,167	6,167	6,167	881
R2	0.010	0.038	0.081	0.220

Source: Authors' calculations

Table 13. Gravity estimates on export with lagged variables

	(5) No lag	(6) One lag	(7) Two lags	(8) Three lags
TPO	0.377***	0.330**	0.324**	0.281**
	(0.035)	(0.129)	(0.125)	(0.117)
TPO_LAG1		0.025	-0.027	-0.032
		(0.130)	(0.168)	(0.155)
TPO_LAG2			0.039	-0.012
			(0.013)	(0.033)
TPO_LAG5				0.049
				(0.077)
FTA	1.227***	1.145***	1.059***	0.856***
	(0.072)	(0.071)	(0.069)	(0.065)
LnGDP	0.105***	0.076***	0.054***	0.018
	(0.010)	(0.010)	(0.010)	(0.011)
LnDIS				-0.063
				(0.238)
Constant	16.714***	16.991***	17.219***	17.665***
	(0.076)	(0.078)	(0.080)	(0.082)
Observations	6,167	5,970	5,773	5,184
R2	0.082	0.071	0.064	0.050

Source: Authors' calculations

Table 14. Gravity estimates on export by group

	(3) All	(9) Group 0	(10) Group 1	(11) Group 2
TPO	0.436***	1.306***	0.568***	0.258***
	(0.035)	(0.389)	(0.081)	(0.023)
FTA	1.244***	1.156***	0.813***	1.622***
	(0.073)	(0.081)	(0.147)	(0.199)
LnGDP	0.110***	0.068***	0.175***	0.397***
	(0.010)	(0.020)	(0.024)	(0.084)
LnDIS	-0.935***	-0.012	-0.069	-0.279*
	(0.268)	(0.051)	(0.070)	(0.132)
Constant	25.054***	18.450***	16.076***	20.952***
	(2.435)	(0.670)	(0.692)	(1.369)
Observations	6,167	1,581	804	124
R2	0.081	0.112	0.427	0.657

Source: Authors' calculations

Table 15. Correlation between variables

	EXP	TPO	FTA	HAL	GDP	POP	DIS
EXP	1.00						
TPO	0.82*	1.00					
FTA	0.18*	0.19*	1.00				
HAL	0.70*	0.70*	-0.01	1.00			
GDP	0.03*	0.06*	-0.07*	-0.09*	1.00		
POP	-0.04*	0.07*	0.03*	-0.20*	0.06*	1.00	
DIS	-0.19*	0.23*	-0.15*	-0.34*	-0.02*	-0.06*	1.00

Source: Authors' calculations

Table 16. Gravity estimates on export with TPO, FTA and HAL with interaction variables

	(12) PPML	(13) PPML FE	(14) PPML FE	(15) PPML FE
TPO	0.010	-0.000	0.009	-0.002
	(0.002)***	(0.001)	(0.002)***	(0.001)*
FTA	0.033	0.033	0.032	0.018
	(0.009)***	(0.006)***	(0.009)***	(0.005)***
LnHAL	0.024	0.012	0.026	0.016
	(0.002)***	(0.002)***	(0.002)***	(0.003)***
TPOHAL	- 0.000	- 0.000	- 0.000	- 0.000
	(0.000)***	(0.000)***	(0.000)***	(0.000)*
TPODIS	0.000	0.000	0.000	0.000
	(0.000)***	(0.000)*	(0.000)***	(0.000)*
TPOFTA	-0.003	-0.001	-0.002	-0.000
	(0.001)*	(0.000)	(0.001)	(0.000)
FTADIS	-0.000	-0.000	-0.000	-0.000
	(0.000)*	(0.000)***	(0.000)	(0.000)***
HALDIS	-0.000	-0.000	-0.000	-0.000
	(0.000)***	(0.000)	(0.000)***	(0.000)
HALPOP	0.000	0.000	0.000	0.000
	(0.015)***	(0.000)	(0.000)***	(0.000)
Constant	2.791	2.828	2.772	2.900
	(0.015)***	(0.011)***	(0.015)***	(0.032)***
Observations	881	881	881	881
R2	0.016	0.024	0.016	0.025
Importer-time FE	No	Yes	No	Yes
Time FE	No	No	Yes	Yes

Source: Authors' calculations

Table 17. Trade promotion organisations in the world

No	Country	Name of the TPO	No of offices
1	UK	UK Trade and Investment (UKTI)	227
2	Canada	Canadian Trade Commissioner Service	161
3	South Korea	Korea Trade - Investment Promotion Agency (KOTRA)	127
4	Austria	Advantage Austria	115
5	Netherlands	Netherlands Enterprise Agency (RVO.NL)	110
6	Spain	ICEX Spain Trade and Investment	97
7	Australia	Australian Trade Commission (AUSTRADE)	81
8	France	Business France	80
9	Italy	Italian Trade Agency (ITA)	78
10	Denmark	Ministry of Foreign Affairs of Denmark – The Trade Council	73
11	Finland	Finpro	64
12	Chile	Export Promotion Directorate	53
13	Sweden	Business Sweden - The Swedish Trade & Invest Council	50
14	Germany	Germany Trade & Invest	49
15	Mexico	ProMéxico	48
16	Portugal	AICEP Portugal Global (AICEP)	46
17	Malaysia	Malaysia External Trade Development Corporation (MATRADE)	44
18	New Zealand	New Zealand Trade & Enterprise (NZTE)	38
19	Norway	Innovation Norway	35

20	Ecuador	Institute for the Promotion of Exports and Investments (Pro Ecuador)	31
21	Philippines	Export Marketing Bureau (EMB)	28
22	Colombia	PROCOLOMBIA	26
23	Switzerland	Switzerland Global Enterprise (S-GE)	21
24	China	China Council for the Promotion of International Trade (CCPIT)	17
25	Latvia	Investment and Development Agency of Latvia (LIAA)	17
26	Cyprus	Ministry of Energy, Commerce, Industry and Tourism (MECIT)	11
27	Myanmar	Department of Trade Promotion, Ministry of Commerce	10
28	United Arab Emirates	Dubai Exports	10
29	Tunisia	Export Promotion Centre (CEPEX)	9
30	Brazil	Brazilian Trade and Investment Promotion Agency	9
31	Estonia	Enterprise Estonia	9
32	Azerbaijan	Azerbaijan Export and Investment Promotion Foundation (AZPROMO)	6
33	Bahrain	Bahrain Economic Development Board (EDB)	6
34	Samoa	Trade Division, Ministry of Foreign Affairs and Trade (MFAT)	6
35	Mauritius	Enterprise Mauritius	3
36	Nigeria	Nigerian Export Promotion Council	2

Source: TPO Directory-2015, International Trade Center (ITC)

Table A. Offices of Kotra over the world (Up To 5/2022)

Country	City	Region	Establish Year
Algeria	Alger	Middle East & North Africa	2000
Argentina	Buenos Aires	Central and Southern America	1975
Australia	Melbourne	South East Asia & Oceania	1973
Australia	Sydney	South East Asia & Oceania	1967
Austria	Vienna	Europe	1970
Azerbaijan	Baku	Russia & CIS	2008
Bangladesh	Dhaka	South West Asia	1978
Belarus	Minsk	Russia & CIS	2014
Belgium	Brussels	Europe	1972
Brazil	Sao Paulo	Central and Southern America	1969
Bulgaria	Sofia	Europe	2002
Cambodia	Phnom Penh	South East Asia & Oceania	1997
Canada	Toronto	North America	1971
Canada	Vancouver	North America	1969
Chile	Santiago	Central and Southern America	1977
China	Beijing	China	1990
China	Changchun	China	2019
China	Changsha	China	2011
China	Chengdu	China	1995
China	Chongqing	China	2011
China	Dalian	China	1994
China	Guangzhou	China	2011
China	Hangzhou	China	1995

China	Harbin	China	2019
China, Hong Kong SAR	Hongkong	China	1962
China	Nanjing	China	2011
China	Qingdao	China	2000
China	Shanghai	China	1993
China	Shenyang	China	2011
China	Shenzhen	China	2014
China	Taipei	China	1971
China	Tianjin	China	2014
China	Wuhan	China	1996
China	Xiamen	China	2011
China	Xian	China	2009
China	Zhengzhou	China	2011
Colombia	Bogota	Central and Southern America	1977
Côte d'Ivoire	Abidjan	Africa	2016
Croatia	Zagreb	Europe	1996
Cuba	Havana	Central and Southern America	-
Czechia	Prague	Europe	1990
Denmark	Copenhagen	Europe	1973
Dominica	Santo Domingo	Central and Southern America	1985
Ecuador	Quito	Central and Southern America	2012
Egypt	Cairo	Middle East & North Africa	1974

Ethiopia	Addisababa	Africa	2011
Finland	Helsinki	Europe	1973
France	Paris	Europe	1969
Germany	Frankfurt	Europe	1970
Germany	Hamburg	Europe	1967
Germany	Munich	Europe	1996
Ghana	Accra	Africa	-
Greece	Athens	Europe	1973
Guatemala	Guatemala	Central and Southern America	1977
Netherlands	Amsterdam	Europe	1966
Hungary	Budapest	Europe	1988
India	Ahmedabad	South West Asia	2019
India	Bengaluru	South West Asia	2014
India	Chennai	South West Asia	1997
India	Kolkata	South West Asia	2017
India	Mumbai	South West Asia	2004
India	New Delhi	South West Asia	1962
Indonesia	Jakarta	South East Asia & Oceania	1964
Indonesia	Surabaya	South East Asia & Oceania	2012
Iran	Tehran	Middle East & North Africa	-
Iraq	Baghdad	Middle East & North Africa	1982
Israel	Tel Aviv	Middle East & North Africa	1995
Italy	Milano	Europe	1966
Japan	Fukuoka	Japan	1988
Japan	Nagoya	Japan	1971
Japan	Osaka	Japan	1965
Japan	Tokyo	Japan	1964

Jordan	Amman	Middle East & North Africa	1977
Kazakhstan	Almaty	Russia & CIS	2001
Kenya	Nairobi	Africa	1969
Kuwait	Kuwait	Middle East & North Africa	1970
Lao People's Dem. Rep.	Vientiane	South East Asia & Oceania	2011
Libya	Tripoli	Middle East & North Africa	-
Malaysia	Kuala Lumpur	South East Asia & Oceania	1973
Mexico	Mexico	Central and Southern America	1973
Mongolia	Ulaanbaatar	Russia & CIS	2013
Morocco	Casablanca	Middle East & North Africa	1975
Mozambique	Maputo	Africa	2013
Myanmar	Yangon	South East Asia & Oceania	1975
New Zealand	Auckland	South East Asia & Oceania	1973
Nigeria	Lagos	Africa	1966
Oman	Muscat	Middle East & North Africa	1996
Pakistan	Karachi	South West Asia	1973
Panama	Panama	Central and Southern America	1969
Paraguay	Asuncion	Central and Southern America	2012
Peru	Lima	Central and Southern America	1971
Philippines	Manila	South East Asia & Oceania	1968

Poland	Warsaw	Europe	1989
Qatar	Doha	Middle East & North Africa	2012
Romania	Bucharest	Europe	1990
Russian Federation	Moscow	Russia & CIS	1989
Russian Federation	Novosibirsk	Russia & CIS	2005
Russian Federation	Sanktpeterburg	Russia & CIS	2011
Russian Federation	Vladivostok	Russia & CIS	1992
Saudi Arabia	Riyadh	Middle East & North Africa	1973
Serbia	Beograd	Europe	2015
Singapore	Singapore	South East Asia & Oceania	2012
Slovakia	Bratislava	Europe	2015
South Africa	Johannesburg	Africa	1992
Spain	Madrid	Europe	1972
Sri Lanka	Colombo	South West Asia	1979
Sudan	Khartoum	Africa	-
Sweden	Stockholm	Europe	1970
Switzerland	Zurich	Europe	1972
Syria	Damascus	Middle East & North Africa	-
United Rep. of Tanzania	Dar Es Salaam	Africa	2012
Thailand	Bangkok	South East Asia & Oceania	1962
Turkey	Istanbul	Middle East & North Africa	1978

United Kingdom	London	Europe	1967
Ukraine	Kiev	Russia & CIS	1998
United Arab Emirates	Dubai	Middle East & North Africa	1976
USA	Chicago	North America	1966
USA	Dallas	North America	1969
USA	Detroit	North America	1996
USA	Los Angeles	North America	1962
USA	New York	North America	1962
USA	Silicon Valley	North America	1967
USA	Washington D.C	North America	1979
Uzbekistan	Tashkent	Russia & CIS	1996
Viet Nam	Danang	South East Asia & Oceania	2019
Viet Nam	Hanoi	South East Asia & Oceania	1996
Viet Nam	Hochiminh	South East Asia & Oceania	1992

Source: Compiled by author using data from KOTRA

Table B. Number of KOTRA's main programs by regions in 2018

	No. of programs	Programs
North America	4	K-Bio USA US- Korea Business Summit New York Employment Expositions GP USA 2018
Central & South	5	Korea Week in Cuba Hosted employment and start-up

America		expositions through job collaboration with Central and South America New and Renewable Energy Showcase of 3 Nations on China- South America FTA Seminar on the Unilization of Korea-Central America FTA Korea- Mercosur Economic Cooperation Seminar
Europe	4	2018 Bologna Cosmoprof GP Europe 2018 GP Europe 2018 International Hardware Fair Cologne, Germany Auto Parts Exhibition, Germany
CIS	4	2018 Hallyu Expo Moscow Business partnership in connection with Korea- Russia Summit Partner nations at the 2018 Ekaterinburg International Industrial Trade Fair (INNOPROM) Far East Russia project partnership in connection with the 4th Eastern Economic Forum
China	5	China Employment Expositions Export consultation in connection with 2018 MAMA Korea- China Innovation Plus K-Global China International Import Expo in Shanghai

Japan	5	Inside Honda and Mitsubishi Korea- Japan Power Material Fair Japan Job Fair K-move Job Fair IT expo in Autumn
Middle East	5	Korea- UAE Business Partnership Korea- Turkey Business Forum Middle East Plant Material Export Fair Medical and Health Care Business Forum and Fair Korea- Saudi Arabia Investment Semina
Africa	5	Consumer Goods Showcase in Africa Public-private consultative group to cooperate on the development of natural gas in Mozambique Kenya start-up partnering support project Hosted Korea- Tanzania Business Forum Korea- Sudan Business Cooperation Forum
Southwest Asia	4	Korea- India business partnership K-Global India Korea-Pakistan auto parts collaboration Project on entry of K-beauty into the online distribution channel of India
Southeast Asia & Oceania	4	Korea-Vietnam business partnership (job creation agreement ceremony for ASEAN youths, integrated employment exposition in Vietnam) Korea- Singapore business partnership, one-on-one consultation, job expo, etc

		Asia parts and materials export consultation 2018 Excellent Korean Product Exhibition in Bangkok

Source: Compiled by author using data from KOTRA

Table C. Group of countries by the change in number of KOTRA offices during 1988-2020

Group 0 (number of KOTRA offices does not change)	Argentina, Australia, Austria, Belgium, Bangladesh, Brazil, Canada, Chile, Colombia, Cuba, Czechia, Denmark, Dominican Rep., Egypt, France, Finland, Ghana, Greece, Guatemala, Hong Kong, Hungary, Iran, Iraq, Italy, Japan, Jordan, Kenya, Kuwait, Libya, Malaysia, Mexico, Morocco, Myanmar, Netherlands, New Zealand, Nigeria, Pakistan, Panama, Peru, Phillippines, Poland, Romania, Saudi Arabia, Spain, Sri Lanka, Switzerland, Sweden, Syria, Thailand, Turkey, United Arab, United Kingdom
Group 1 (number of KOTRA offices increased 1)	Algeria, Azerbaijan, Bulgaria, Belarus, Cambodia, Côte d'Ivoire, Croatia, Ecuador, Ethiopia, German, Indonesia, Israel, Kazakhstan, Laos, Mongolia, Mozambique, Oman, Paraguay, Qatar, South Africa, Singapore, Serbia, Slovakia, United Rep. of Tanzania, Ukraine, USA, Uzberkistan, Venezuela
Group 1 (number of KOTRA offices increased 2)	China, Russia, Vietnam, India

**Note: for the case of Czechia, Poland and Romania, they had a new KOTRA office established during 1988-1990. However, because the export data for these countries start from 1991, they are included in group 0.*

Abstract

수출은 경제와 세계 다른 나라들 사이에 더 긴밀한 관계를 만들어낸다. 그것은 국제 무역을 촉진하고 고용, 생산 및 수익을 창출함으로써 국내 경제 활동을 자극한다. 수출의 큰 이익을 인정하면서, 모든 나라의 정부는 많은 다른 도구들에 의해 수출을 촉진하려고 노력한다. 이것은 이러한 도구들이 수출에 미치는 영향에 대한 연구를 수행할 필요성을 제기한다. 본 연구는 한국의 사례와 국가 차원의 패널 데이터를 이용하여 수출 촉진 도구와 수출 간의 관계를 제시한다.

이 연구는 파트너 국가에 새로운 무역 촉진 사무소를 설립하는 것이 그 도착 국가에 대한 수출량에 긍정적인 영향을 미친다는 것을 암시한다. 게다가, 정부는 상호 무역 협정, 문화적 영향 또는 다른 행사와 같은 수출을 촉진할 수 있는 다른 요인들을 가속화하기 위해 무역 진흥 사무소의 파트너 국가에서의 존재를 이용해야 한다. 이러한 요인과 무역 진흥 사무소의 보조가 복합적으로 작용하여 수출 성장에 기여할 것이다.