

Trade Facilitation for E-Commerce Export Clearance*

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Abstract

Purpose – There is a paucity of literature dealing with exporters' compliance issues in e-commerce exports. This study aims to fill this gap in the literature by exploring customs initiatives to facilitate the e-commerce exports of small and medium-sized enterprises (SMEs) in the changed compliance environment. The central question of this study was divided into five subquestions: first regarding the pros and cons of trade facilitation measures for Korean e-commerce export clearance; second and third questions about risk and compliance management for facilitation fourth about instruments, the changes in Korean SME compliance burden in e-commerce exports, and ways to improve trade facilitation for e-commerce exports.

Design/methodology – This study adopts a qualitative approach using a case study method to understand the SME experience in Korean e-commerce export compliance procedures. A qualitative method was selected to answer research questions requiring an in-depth understanding of the regulatory procedures of customs administration and exporters' compliance burden. Because this study addresses the changing compliance environment for which statistical data is insufficient, a quantitative method is considered inappropriate. Based on the approach, data were collected using multiple sources, including an extensive literature review, interviews, and field observations. Thematic pattern matching was applied to interpret the data.

Findings – This study examined ways to support SMEs in the changed e-commerce export compliance environment. Facilitation measures for e-commerce exports have contributed to SME access to global markets, simplifying export clearance procedures, and saving exporters' compliance costs. However, such instruments are limited in promoting SME compliance capabilities to cope with intensified competition and strengthened controls over foreign exporters in cross-border e-commerce. Therefore, this study highlights the importance of reshaping facilitation measures for e-commerce exports based on risk and compliance management theories to a system encouraging exporters' voluntary compliance.

Originality/value – This study's academic significance derives from verifying the relationship between trade facilitation instruments and risk and compliance management procedures using an actual case in Korea. It is also of practical importance in navigating the directions for improving facilitation measures for e-commerce exports in a changed compliance environment.

Keywords: Cross-border e-commerce, Customs Risk Management, Trade Facilitation, Voluntary Compliance

JEL Classifications: D12, F14, O53

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1. Introduction

While advances in cross-border e-commerce have made it increasingly easy for small and medium-sized enterprises (SMEs)¹ to sell their goods in global markets, they commonly fail to scale up and survive globally (Rayport, 2022). Trade facilitation instruments are intended to simplify complex and unpredictable border procedures that have been a stumbling block to sustaining SME e-commerce exports for many years. Still, with the surge of international e-commerce and importing states' worries about revenue leakage, SMEs encounter complicated compliance environments requiring trade facilitation measures beyond simplifying procedures.

Countries including Australia, New Zealand, and EU member states have recently abolished the VAT exemption on small-value imported goods and introduced a 'vendor collection model'². With the changes in force, a vendor (or an exporter) collects VAT and pays it to the importing country's tax office (Brondolo and Konza, 2021), burdening exporters, particularly SMEs that lack compliance capacity.

This study has begun with the question about ways to assist exporting SMEs to overcome the challenges in the changing e-commerce compliance environment. Past studies have mainly focused on the impacts of such changes on importing countries' fiscal revenues, yet there has been a lack of research that address exporters' compliance issues. This study aims to fill this gap in the literature by exploring customs initiatives that facilitate SME e-commerce exports in the changed compliance environment.

This study deals with cases facilitating e-commerce export clearance procedures for Korean SMEs. Although Korea has pursued an export-driven growth strategy, Korean SMEs typically export through large corporations and have little direct export experience. Therefore, by exploring trade facilitation efforts and constraints, this study explores the complex compliance issues SMEs encounter in e-commerce exporting when lacking in experience, knowledge and compliance capacity.

This study relies heavily on trade facilitation studies that address the issues of customs administration by applying the concepts of risk management and voluntary compliance (Grainger, 2011). The study's central question was divided first into three topical subquestions on the pros and cons of trade facilitation instruments for Korean e-commerce export clearance and on risk management and compliance management that are founded for those measures. Two additional questions are then devised to explore the limitations of the current facilitation measures in the changed compliance environment and how to improve these instruments to help Korean SMEs improve their compliance capabilities and scale up their e-commerce exports.

The research seeks an in-depth understanding of the compliance and enforcement regime

¹ SMEs are companies defined under several Korean laws, including the Enforcement Decree of The Framework Act on Small and Medium Enterprises (Presidential Decree No. 29552, Feb. 12, 2019). Article 3 of the Decree defines SMEs applying two standards. First, average annual sales revenue of a company should be less than the standards described in the Decree, which differs by primary business type. Second, the company asset amount should not exceed Kwon 500 billion (about USD 416 M, applying the exchange rate of USD1 equaling Kwon 1,200).

² Australia, New Zealand, and the EU have introduced the models in 2018, 2019 and July 2021 respectively.

of customs administration and exporters' compliance burden, for which statistical data provide only limited results. Therefore, this study employs a qualitative approach based on a case study of Korean e-commerce export clearance by SMEs. The results are considered valid and generalizable when the observed patterns in previous studies and the issues match one another (Creswell, 2016).

This study is of academic significance by extending the scope of trade facilitation, risk management, and voluntary compliance studies to e-commerce export customs procedures. Additionally, it is of practical importance to provide ways to improve customs risk and compliance management strategies to alleviate the compliance burden of Korean SMEs in the new e-commerce compliance environment.

This article is structured as follows. The next chapter summarizes previous studies on trade facilitation, risk management, and voluntary compliance for international e-commerce. Chapter 3 presents the research methodology and the proposed analytical framework. Chapter 4 presents the research results for the first two research questions, and Chapter 5 summarizes the results, providing suggestions for the last research question and future research directions.

2. Trade Facilitation for E-Commerce Exports

2.1. Challenges to Facilitating Cross-Border E-Commerce

Trade facilitation involves many concepts that have not been clearly defined. According to the World Trade Organization, it is 'the simplification and harmonization of international trade procedures' (WTO, 2022). Studies on trade facilitation often identify the factors or procedures that generate transaction costs that become barriers to cross-border trade and investigate various ways to lower such barriers (Grainger, 2011). As Wilson, Mann, Woo, Assanie, and Choi (2002) have suggested, customs administrative and regulatory procedure issues that adversely influence transaction costs have been the primary focus of such studies.

While ramping up support for SMEs in international e-commerce since the early 2000s, countries have expressed concern about the difficulties in facilitating cross-border e-commerce (WCO, 2017). Through a World Customs Organization (WCO) survey of 46 member countries in 2016, customs communities identified difficulties in clearing e-commerce goods. In many member countries, customs declarations for international e-commerce goods delivered through postal or express shipment included inaccurate or erroneous data. Moreover, traders often lack both import and export experience and knowledge of regulatory compliance. While the export and import of e-commerce cargo are exploding, the customs professionals that handle the related manual work have reached a limit, leaving e-commerce cargo vulnerable to risks regarding inaccurate and unreliable declaration data.

Barnay, Davis, and Zaidi (2022) diagnosed three obstacles that international customs have yet to overcome to facilitate cross-border e-commerce. First, customs declarations for e-commerce goods contain inaccurate and insufficient information. Second, most customs authorities have not established a policy of sharing data with logistics companies to supplement the information on declaration documents. Finally, due to the surge in e-commerce imports and exports during the COVID-19 pandemic, customs inspection capabilities have

reached their limit.

To address these challenges, researchers and governments have proposed a 'de minimis' threshold and 'immediate release' (Elliott and Bonsignori, 2019; Sowinski, 2017). De minimis refers to 'the maximum customs value of goods below which goods can be processed through customs, duty-free, with minimal formal clearance procedure, and simplified declaration forms for import' (Tavengerwei, 2018). Because the time and cost required to prepare, submit, and process import and export declarations are the same for high-value and low-value cargo, every customs clearance case incurs fixed administrative costs. For clearance of low-value cargo, the costs may be greater than the customs duties or other taxes (including VAT) collected. Therefore, de minimis, the duty-free and VAT exemption application for low-value cargo has benefited traders and customs authorities (United Nations, 2012).

The de minimis threshold is commonly introduced with immediate release, which is a series of release procedures that expedite customs clearance for low-value shipments transported via courier or express mail service (WCO, 2018b). The WCO first developed the measure in the 1990s to allow customs authorities to efficiently handle exploding trade volumes while simultaneously fulfilling a broad risk management role. As the Revised Kyoto Convention and the WCO Data Model were developed, the release procedures underwent the first revision in 2014. They were revised again in 2018 as cross-border e-commerce of low-value cargo rapidly increased worldwide.

When introducing the immediate release measure, the first principle is that customs authorities obtain cargo information before cargo arrival and classify low-risk cargo through a risk assessment (WCO, 2018a). In addition, when customs authorities request cargo information subject to immediate release, electronic data must be transmitted as much as possible. Only the minimum information should be requested in the dataset per the WCO Data Model. Finally, governments must publicize the details of the immediate release instruments through statutes and other accessible media. Elliott and Bonsignori (2019) assessed custom capabilities to apply immediate release measures and found that trade flow can increase by 5% when any individual capacity is improved.

WCO has proposed critical factors for the measure's success (WCO, 2022). First, it should be based on risk management approaches from the early customs clearance stage based on timely and accurate information. Second, an automated customs clearance environment for the measure should be introduced to minimize physical inspection. The customs authority introducing the measure should expand the scope of cooperation with the main stakeholders of e-commerce, in particular platforms and marketplaces.

As the de minimis and immediate release measures have become the primary means for facilitating the import clearance of e-commerce goods, countries have implemented these instruments in their import clearance environments. However, with the boom in international e-commerce, some countries have concerns about the material amount of VAT revenue loss from the de minimis and tax exemption application for low-value goods (Brondolo and Konza, 2021). There are also concerns that domestic suppliers that pay VAT may be at a competitive disadvantage compared to overseas suppliers exempt from VAT under the scheme.

Several countries have started mandating nonresident vendors (or exporters) to pay VAT on their sales of low-value goods to final consumers and transfer the revenue to the importing

country in an effort to address these concerns. Australia, New Zealand, Norway, the United Kingdom, the EU, and Singapore have joined the movement to regulate exporters in this new VAT 'vendor collection model' (Azcarra et al., 2022). As WCO recommends the model to customs administrations, more countries are expected to adopt it (WCO, 2015), raising government concerns about the model's adverse impact on exporters' compliance costs.

2.2. Customs Risk Management for Trade Facilitation

The principles for implementing trade facilitation instruments have been developed by combining theories from various academic fields. Among those, studies on risk management have the most fundamental role in enabling customs authorities to save administrative costs by increasing efficiency in resource allocation (WCO, 2022).

Widdowson (2005) defines 'risks' in the customs field as including the potential for noncompliance with customs law and failure to facilitate international trade. 'Risk management' is a principle widely applied to facilitate the customs investigation or inspection process. Risk management enables resources to be directed to where risks are assessed higher, while procedures requiring minimum customs resources are allocated to low-risk cargo.³ The customs risk management process is a cyclic method with three steps: risk information collection, risk assessment, and risk treatment.

Geourjon and Laporte (2005) emphasized the importance of risk information collection and systematic prerelease inspection in customs control. Risk data for customs control include import and export data collected by customs offices, partner government agencies that check import and export regulatory requirements, and customs offices in neighboring countries.

The risk data should be consolidated into the customs database or stored in a customs-accessible database to be used in risk management procedures (WCO, 2012). Customs authorities should also collect risk information on postal items and consignments from post offices and couriers. Preshipment cargo data collection enhances the accuracy of risk management. To manage these data in an integrated manner, the customs office must have appropriate authority to access the data by signing a memorandum of understanding or business agreement with the relevant parties.

Various statistical inference methods identify risks based on the collected data. Widdowson (2005) introduced an approach that combines four inference methods: (1) inspecting any 'new' declarations with no customs clearance record; (2) inspecting high-risk cargo selected through database analysis based on objective risk assessment criteria determined by statistical inference methods; (3) inspecting cargo considering the import value, the period after the last inspection, and other characteristics of transactions; and (4) a random inspection method to minimize the predictability of inspection patterns.

As described by Aven (2017), customs authorities utilize the 'Quantitative Risk Assessment' method to get the expected risk value (E value) by analyzing an identified individual risk along two dimensions: the likelihood (or probability, P-value) and severity of conse-

³ The WTO Trade Facilitation Agreement, which has been in force since 2014, in paragraph 4 of Article 7, also stipulates that customs control and risk assessment should be conducted based on the "risk management system."

quences (C-value). Based on the computed risk value, customs control is implemented at three different levels: (1) a green channel, with no or minimum control, (2) an orange channel, with in-depth paper inspection, and (3) a red channel, with both in-depth paper and physical inspections.

2.3. Voluntary Compliance for Trade Facilitation

Another critical concept applied to trade facilitation is tax compliance theories, which explain taxpayers' compliance decisions based on compliance costs. Researchers in this field have found that a tax system's complexity increases taxpayers' compliance costs, adversely affecting voluntary compliance (Evans and Tran-nam, 2010; Slemrod, 1996/2005). However, simplifying a tax system does not always result in higher compliance rates by taxpayers. Therefore, tax reforms typically aim not at streamlining the most complicated procedures but rather at the areas where complexity is least justified (Cuccia and Carnes, 2001).

The basic concepts of tax compliance studies have been applied to customs administration and developed as a system to reduce compliance costs and foster voluntary compliance by simplifying, harmonizing, and standardizing customs procedures (Clark and Bernard, 2022). This approach has increased customs risk management's effectiveness and is widely applied in general customs administration.

Against this backdrop, more advanced types of voluntary compliance programs have been devised and adopted, such as the self-assessment of taxpayers and postrelease controls. The WCO Voluntary Compliance Framework (VCF) shows the typical approaches in customs administration in implementing extensive voluntary compliance programs (WCO, 2019). In this framework, customs authorities categorize their clients into four groups based on compliance levels, ranging from type 1 as the most compliant group to type 4 as the least compliant group. Voluntary compliance is mainly expected from the first two types, while enforced or directed compliance is the strategy for the remaining two groups.

VCF presumes that voluntary compliance can be achieved by decreasing compliance costs, increasing incentives, and increasing the probability of exposure. Under VCF, therefore, specific cost reduction measures and incentives for compliance activities are allowed for traders with good compliance histories. In contrast, customs examinations and inspection rates increase for traders with low compliance. For example, the Authorized Economic Operation programs and other compliance programs provide the privilege of self-assessment and expedited cargo release for traders authorized as highly compliant (WCO, 2010).

3. Reexamining E-Commerce Export Facilitation Measures from SME Perspectives

This study adopts a qualitative approach using a case study method to understand the SME experience in e-commerce export compliance. A qualitative method was selected to answer research questions requiring an in-depth understanding of the regulatory procedures of customs administration and exporters' compliance burden. Moreover, since this study addresses the changing compliance environment for which there are insufficient statistical data, a quantitative method is considered inappropriate.

Data were collected using multiple sources, including an extensive literature review, interviews, and field observations. *A priori* coding was used to analyze the gathered data. In qualitative research, observations are considered valid when patterns observed from the current study match those of previous studies (Creswell, 2016). Thus, this study explored the answers to the research questions using thematic pattern matching.

This study examines Korean cases of e-commerce export clearance and their impact on the SME compliance burden. Korea has sought an export-driven growth strategy, but SMEs often export through large corporations and, thus, have little direct export experience. Even for exporting SMEs, e-commerce exports are still insignificant. For example, out of the total 2022 exports, direct exports by SMEs accounted for 17%, of which e-commerce exports were only 0.6% (Trade Statistics Service, 2023). Therefore, this study selected Korean SME cases to examine the compliance issues that SMEs encounter in e-commerce exports when lacking experience, knowledge, and compliance capacity.

Trade facilitation instruments in customs administration are successful when grounded in well-organized risk management and voluntary compliance procedures (WCO, 2012, 2019). Based on this assumption, this study's central research question on customs initiatives facilitating the e-commerce export clearance of SMEs has three related subquestions.

RQ 1. What instruments have been adopted to facilitate e-commerce export clearance procedures, and what are their pros and cons for SME e-commerce exports?

RQ 2. What risk management strategies are devised to facilitate e-commerce export clearance in Korea, and what are the constraints on risk data collection, assessment, and treatment?

RQ 3. What voluntary compliance programs have been devised to facilitate e-commerce export clearance in Korea, and what are the constraints on encouraging voluntary compliance by SMEs?

Two additional questions explore the limitations of current trade facilitation instruments in supporting e-commerce exports by Korean SMEs and suggestions for improvement.

RQ 4. What are the constraints on measures that facilitate cultivating SME compliance capabilities in a changed compliance environment for e-commerce exports?

RQ 5. What instruments are required to improve the risk and compliance management for SME e-commerce exports, and what are the implications of this for customs administration?

RQ1 to RQ3 address the administrative and regulatory procedures in the export clearance of e-commerce goods and, therefore, were analyzed by examining relevant provisions in the 'Customs Act,' 'Enforcement Decree of Customs Act,' and 'Public Notice for Administrative Procedures of Export Clearance' in Table 1. Specific provisions or articles were selected to analyze key stakeholders' compliance obligations and the administrative and regulatory procedures in e-commerce exports.

Interviews and field observations respond to RQ4 and RQ5, which require understanding factors and issues that encourage voluntary compliance with customs rules and regulations. Interviewees include four stakeholders in e-commerce exports, SMEs, freight forwarders, customs brokers, and program developers, to understand the limitations and needs for improvement in using trade facilitation measures based on their respective functions and interests.

Table 2 presents the interviewee profiles. Since the interview questions require relevant experiences and understandings of cross-border e-commerce customs clearance, the interviewees were selected using a nonprobability sampling method that aimed to interview the most representative individuals. Following the snowball sampling method, the designated person recommended other representative individuals for the following interviews (Babbie, 2013). Interviewees include SMEs who recently started e-commerce exports, freight forwarders who deal with international e-commerce, customs brokers who work with couriers, and program developers who provide e-commerce filing systems.

Field observations were designed to investigate data and administrative flows in e-commerce exports. They were conducted for subprocedures of compliance information gathering, filing export declarations, and completing their onboard liability.

Table 1. Provisions of National Laws and Regulations on Cross-Border E-Commerce

Laws / Regulation	Article No.	Descriptions of the Provisions or Regulations
Customs Act ¹	Article 94	Exemption from Customs Duties for Small-Sum Goods
	Article 254	Special Customs Clearance for E-Commerce Goods
	Article 254-2	Special Customs Clearance for Consignment
	Article 256 ~ Article 261	Customs Clearance for Parcel Postal Matter
Enforcement Decree of Customs Act ¹	Article 108 ~ Article 120	Reduction or Exemption
	Article 258	Special Customs Clearance for E-Commerce Goods
	Article 258-2~ Article 258-5	Inspection and Other Customs Clearance for Consignment
	Article 259-8 ~ Article 263	Customs Clearance for Parcel Postal Matter
Korea Customs Service Public Notice ²	No. 2022-19	Public Notice for Administrative Procedures of Export Clearance

Notes: 1. The English titles of provisions and regulations follow the descriptions used in the English language website of the Korean Law Information Center retrieved from <https://law.go.kr/LSW/eng/engMain.do> on October 24, 2022.

2. Author's translation for the English titles of provisions and regulations.

Source: Korean Law Information Center (2022).

Table 2. Interviewee Profiles

Group	Interviewees	Date / Location	Interviewee Profiles
Group 1	SME A	November 25, 2022 / Seoul	<ul style="list-style-type: none"> - A startup producing and exporting retro-design general household appliances, such as keyboards, mouses, and pointers. - B2B project-based business model using cloud funding, such as Makuake (Japan), Kickstarter (US), Wadiz, and Indiegogo (US). - Deliver products to customers using DHL and FedEx.
	SME B	November 25, 2022 / Seoul	<ul style="list-style-type: none"> - A startup producing and exporting fashion helmets for bikes. - Export through online shops at Amazon (US, Europe, and Japan), eBay (US), Qoo10 (Asia), and Shopee (Asia). - Delivery to consumers using third-party logistics or the e-commerce platforms' fulfilment service.
	SME C	November 25, 2022 / Gyungki	<ul style="list-style-type: none"> - A startup producing and exporting body care and cosmetics. - B2B project-based business model in cooperation with other well-known brands, such as Kakao and Hotel K. - Deliver products using freight forwarders and customs brokers.
Group 2	Customs Broker A	October 17, 2022 / Pyungtaek	- Filing export declarations for e-commerce cargo clients of freight forwarders.
	Customs Broker B	October 20, 2022 / Seoul	- Filing export declarations for e-commerce cargo clients of freight forwarders.
Group 3	Program Developer A	October 21, 2022 / Seoul	- A program developer for customs clearance software for couriers handling e-commerce cargo.
	Program Developer B	November 11, 2022 / Seoul	- A program developer for customs clearance software for couriers handling e-commerce cargo.
Group 4	Courier	October 21, 2022 / Seoul	- A courier specializing in cross-border e-commerce between Japan and Korea.

Source: Author.

4. Facilitating Korean SME E-Commerce Exports

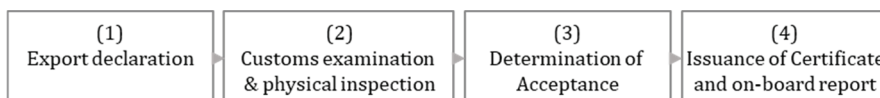
4.1. Pros and Cons of E-Commerce Export Facilitation Measures for Korean SMEs

Korea Customs Service (KCS) has developed and adopted various trade facilitation instruments to simplify and rationalize customs duty collection and customs clearance procedures in line with trade facilitation studies (Staples, 1998). Trade facilitation instruments for e-commerce exports have also been devised and adopted by simplifying the

existing export clearance procedures.

As shown in Figure 1, a typical export clearance comprises a series of procedures, including (1) the exporter's declaration filing, (2) customs examination and physical inspection, (3) customs determination of acceptance, and (4) the issuance of export declaration certificate and exporter's on-board report of goods. Exporters are primarily liable for (1), while customs authorities are responsible for (2) and (3). In particular, KCS has focused on streamlining procedure (1) by applying the 'immediate release' measure (Elliott & Bonsignori, 2019; Sowinski, 2017), which has simplified export clearance yet still has some limitations. We will now discuss the first research question.

Fig. 1. Major Procedures for Formal Export Clearance



RQ 1. What measures have been adopted to facilitate e-commerce export clearance procedures, and what are their pros and cons for SME e-commerce exports?

A formal export declaration requires 57 datasets⁴, some of which require some expert knowledge, such as the product's HS codes⁵ and customs values⁶. Therefore, exporters mostly rely on customs brokers who provide the necessary compliance information and advice for customs clearance. Two critical goals of simplifying procedure (1) in Figure 1 in Korea have been reducing the required datasets and making compliance information more accessible for SME exporters.

A 'release from the manifest' or a 'simplified export declaration' have been adopted to expedite the formal procedure. While the former is an exceptional procedure for personal articles not included in the export statistics⁷, the latter is a formal declaration procedure with a simplified declaration form⁸. As shown in Table 3, they only require 17⁹ and 27¹⁰ datasets, respectively. Furthermore, they are more straightforward than standard procedures, providing a clear benefit of expediting the export clearance procedures.

E-commerce exporters prefer a release from the manifest mainly because it does not require expert knowledge or engagement for customs clearance procedures. Most customs clearance procedures under the scheme are replaced by express couriers or post offices submitting the

⁴ Attached Form Export Declaration Guide, Public Notice for Administrative Procedures of Export Clearance

⁵ This refers to the classification system for goods under the "International Convention on the Harmonized Commodity Description and Coding System," which went into effect in January 1988. The system was developed to unify the classification of products on the tariff table globally, but it has complicated rules that requires expert knowledge to be compliant.

⁶ "Customs value" refers to a tax base for customs duty computed in compliance with the rules set by "WTO Customs Valuation Agreements." This also requires expert knowledge about the agreement and pricing practice of the industry.

⁷ Section 5 of Article 2, Public Notice for Administrative Procedures of Export Clearance

⁸ Section 4 of Article 2, Public Notice for Administrative Procedures of Export Clearance

⁹ Attached Form 6, Public Notice for Administrative Procedures of Export Clearance

¹⁰ Attached Form 12, Public Notice for Administrative Procedures of Export Clearance

manifest to the customs office¹¹. In contrast, a simplified export declaration requires all the mandatory datasets for a formal export declaration, such as HS codes, a declarant identifier, a manufacturer, and more detailed transaction data¹², used mainly by customs brokers.

Table 3. Exporter's Declaration Process

	Release From The Manifest	Simplified Export Declaration	Formal Export Declaration
Requirements	<ul style="list-style-type: none"> • Export value (FOB) under KWon 2 M • Goods requiring export permits or licenses are not applicable 		<ul style="list-style-type: none"> • Applicable for all cases
Required Datasets	17	27	57
Mandatory Dataset Composition	Courier, exporter, consignee, product descriptions, price, etc	Declarant identifier, business registration number, buyer, HS codes and customs value of products, manufacturer. etc	
Declarant	Post Office / Courier	Exporter / Customs Brokers	

Source: Public Notice for Administrative Procedures of Export Clearance.

Considering the required datasets, a release from the manifest scheme is also the simplest and easiest to access for SMEs lacking expert knowledge and experience for formal export clearance. According to the 2019 and 2020 reports of Incheon Customs, over 80% of e-commerce exports were released from the manifest, as shown in Table 4; the portion for other customs offices is not significantly different (KCS, 2021).

Table 4 Use of E-Commerce Export Clearance Processes (Incheon Customs Office)

Types of Filing Process	2019		2020	
Export Declaration	124	(1.0%)	969	(3.7%)
Simplified Export Declaration	2,064	(16.0%)	3,012	(11.6%)
Release From The Manifest	10,686	(83.0%)	21,914	(84.6%)
Total	12,874	(100.0%)	25,895	(100.0%)

Source: Korea Customs Service (2021).

Although largely favored by e-commerce exporters, a release from the manifest scheme has disadvantages due to its simplicity. Because exporters cannot obtain export declaration certificates under the scheme, exporters with the procedures can neither use their export history for export loans nor apply for duty drawbacks or exemptions for reimport (KCS, 2021).

The simplified declaration procedures do not facilitate e-commerce exports because the customs authority cannot collect the necessary information for risk management and voluntary compliance management. This point will be further clarified in the next section.

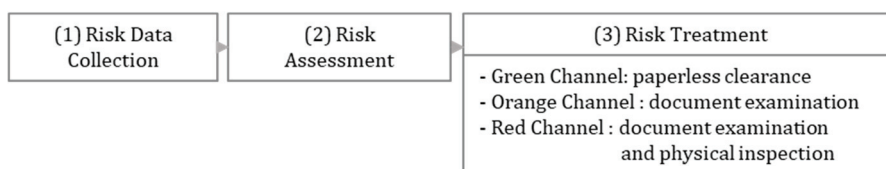
¹¹ Article 36, Public Notice for Administrative Procedures of Export Clearance

¹² Attached From 1-2, Public Notice for Administrative Procedures of Export Clearance

4.2. Risk Management Under Facilitation Measures for Korean E-Commerce Exports

Risk management processes for a formal export clearance are simplified and mostly skipped when a release from the manifest is applied. As shown in Figure 2, customs risk management comprises three steps: data collection, risk assessment, and risk treatment (Widdowson, 2005). KCS collects risk data from the export declaration and supporting documents in a formal export clearance.¹³ By assessing the collected data according to the risk criteria, KCS determines the treatment for export declaration in three levels: a paperless clearance (green channel), document inspection (orange channel), and physical inspection (red channel).¹⁴ KCS usually does not inspect cargo during export clearance except when selected for physical inspection by the cargo selectivity system.¹⁵

Fig. 2. Risk Management for Formal Export Clearance



Source: WCO (2012) Risk Management Compendium.

The existing risk management is inappropriate for a release from the manifest since detailed transaction data required for the risk management, such as product HS codes, declarant ID, and manufacturers, are not submitted to the customs office. As such, trade facilitation by simplifying existing customs procedures causes changes in the following risk management and voluntary compliance. Research question 2 explores the consequences of adopting trade facilitation measures related to e-commerce export risk management.

RQ 2. What risk management strategies are devised for facilitation measures for e-commerce export clearance in Korea, and what are the constraints on risk data collection, assessment, and treatment?

In a release from the manifest procedure, risk data are collected from the manifest submitted by couriers and post offices to the customs office. Different procedures are applied to assess the risk of couriers' and post offices' manifests. Regardless, the an examination and physical inspection are not mandatory and are generally skipped.¹⁶

In the case of manifests submitted by couriers, a customs officer selects cargo for examination and inspection using random sampling or a manual selection method. When random sampling is used, the inspection ratio is determined taking account of the courier's compliance levels and should be less than 5%. Risk assessment criteria for the manual selection are structured mainly to decide whether the cargo and its export purpose are

¹³ Article 7, Public Notice for Administrative Procedures of Export Clearance

¹⁴ Article 10, Public Notice for Administrative Procedures of Export Clearance

¹⁵ Article 17, Public Notice for Administrative Procedures of Export Clearance

¹⁶ Article 39, Article 40, Public Notice for Administrative Procedures of Export Clearance

applicable for a release from the manifest.¹⁷

In the case of postal items, risk management processes become more superficial. They do not require submission of the manifest¹⁸ to the customs office because the customs office and post office use different forms and data models; thus, they cannot share risk information. Although the WCO and the Universal Postal Union have introduced the CN22 and CN23 forms to unify customs declaration forms, much of the information is still handwritten, which is insufficient for risk management (WCO, 2015).

The limitations of risk management for a release from the manifest scheme begin with the (1) data collection stage in Figure 2, where the existing risk management process is difficult to apply due to the limited range of input data. To address this deficiency, WCO has recommended cooperating with couriers and post offices to share risk information (WCO, 2018b). However, cooperation for risk data collection is only available for couriers' import clearance, not for export clearance or post offices.¹⁹

Due to the lack of risk data, precise criteria cannot be applied in the subsequent risk assessment stage. Using a random risk assessment or the checking requirements for a release from the manifest, there is a high likelihood that unreliable results will be provided. Furthermore, without declarant ID, product HS codes, or manufacturer data, risk data for a declarant, the products, and the manufacturers cannot be stored for future use. This adversely influences the following risk treatment stage, where customs inspection and examination cargo is selected irrationally based on the couriers' compliance levels, not the exporter's.

4.3. Voluntary Compliance Under Facilitation Measures for Korean E-Commerce Exports

The risk management issues caused by the release from the manifest continue in the exporters' voluntary compliance in e-commerce export clearance. As shown in Fig. 3, a compliance management program is structured based on (1) four levels of client categorization and (2) differentiated treatments based on these categories. Such programs include reducing costs and increasing incentives to motivate compliance while increasing pressure on noncompliant clients (WCO, 2019).

Research question 3 examines why there is no voluntary compliance program for the release from the manifest procedures, discouraging exporters' compliance efforts.

RQ 3. What voluntary compliance programs facilitate e-commerce export clearance in Korea, and what are the constraints on encouraging voluntary compliance by SMEs?

As reviewed in the previous section, any voluntary compliance program is fundamentally imperfect under the release from the manifest procedures, because the risk management stage provides insufficient data for the process (1) and the exporter (client) categorization process. Thus, there has been no such program for e-commerce exports. Instead, courier exporters rely predominantly on couriers to obtain compliance information under the release from the

¹⁷ Article 38, Public Notice for Administrative Procedures of Export Clearance

¹⁸ Article 42, Public Notice for Administrative Procedures of Export Clearance

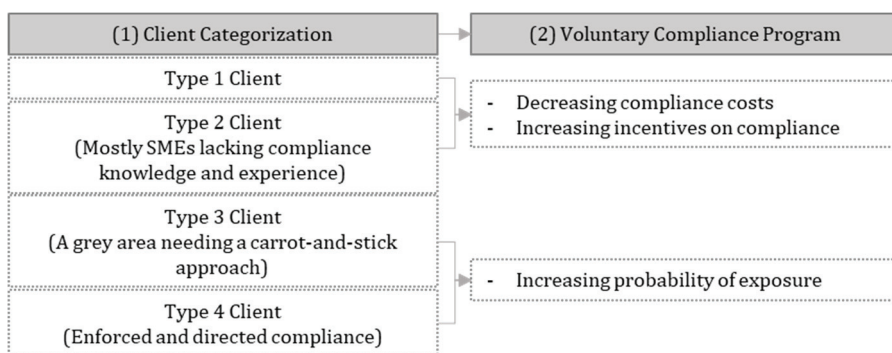
¹⁹ Article 254-2 Paragraph 9 of the Customs Act (No.1876).

manifest process.²⁰

Some e-commerce mall operators also provide seller training for customs clearance; however, in catering to many e-commerce exporters, such operators and couriers provide no specialized legal information tailored to exporters' specific circumstances. Alternatively, when e-commerce exporters seek detailed information on export customs clearance, they may search for information on the KCS website²¹ or request information through the KCS Help Desk.²²

Against this backdrop, a release from the manifest procedure adversely influences exporters' compliance with customs laws. While the procedure dramatically incentivizes all exporters by expediting the customs clearance process, it provides a minimum probability of exposure even for noncompliant exporters. This compliance management structure signals to exporters that compliance is not required, sometimes even encouraging exporters to try to split their shipments into small parcels and illegally being applicable for the release from the manifest procedures.²³

Fig. 3. Voluntary Compliance Management for Formal Export Clearance



Source: WCO (2019) Voluntary Compliance Framework.

4.4. Challenges to Voluntary Compliance in Changed Cross-Border E-Commerce Environment

As shown in Figure 4, until 2012, e-commerce primarily served to import personal use goods, and e-commerce imports were 46 times larger than exports (Trade Statistics Service, 2023). Measures to facilitate e-commerce exports were insignificant due to the small volume of exports. Therefore, despite the clear disadvantages in its risk and compliance management

²⁰ Interviews with SMEs A, B, and C (November 25, 2022), Interview with Freight Forwarder (October 21, 2022)

²¹ The KCS provides services through several web portals. For electronic clearance, traders use UniPass website <https://unipass.customs.go.kr/>, where people can access customs rules and laws, including HS codes and tariffs. The KCS Customer Support Centre provides telephone counseling and online and offline support through a dedicated website <https://www.customs.go.kr/call/main.do?mi=10640..>

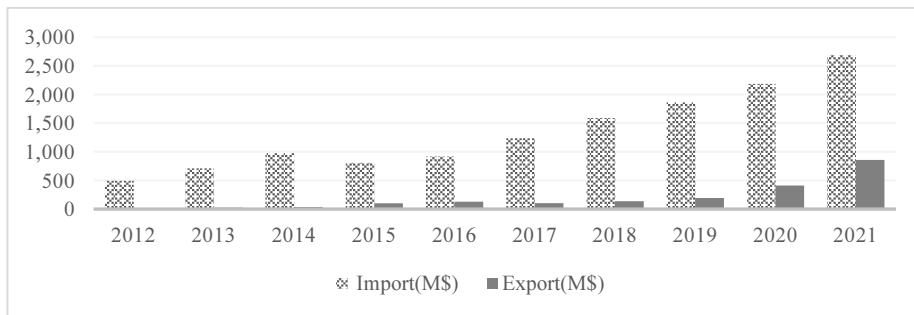
²² Interviews with SMEs A, B, and C (November 25, 2022), Interview with Freight Forwarder (October 21, 2022)

²³ Interviews with SMEs A, B, and C (November 25, 2022), Interview with Freight Forwarder (October 21, 2022)

structure, it has provided more benefits in many countries, facilitating international e-commerce.

Ten years later, in 2021, however, the volume of cross-border e-commerce increased enough to attract the attention of many governments. Some countries adopted the vendor collection model to address revenue losses. Research question 4 explores the changed compliance environment, in which more compliance activities and experience are required for e-commerce exporters.

Fig. 4. Import vs. Export through Cross-Border E-Commerce



Source: Trade Statistics Service (2022).

RQ 4. What are the constraints on measures facilitating SME compliance capabilities in a changed compliance environment for e-commerce exports?

SMEs agree they have more export opportunities with increased e-commerce²⁴ since export transaction costs have fallen considerably. However, e-commerce exports are not always profitable.²⁵ Many SMEs start their e-commerce exports based on the direct-to-consumer (D2C or B2C) model, where vendors export to individual consumers, delivering goods in small quantities or shipping many packages to scattered consumers. The model's small volume and high transaction costs result in modest profits. Although the value of each export is marginal, exporters' time and expense do not decrease accordingly, lowering the profits from exports.

Thus, SMEs often use business-to-business (B2B) models for their e-commerce exports, utilizing e-commerce platforms.²⁶ B2B e-commerce is an online version of traditional wholesale transactions in which businesses purchase products online and resell them to consumers through retail outlets (OECD, 2014). B2B transactions have a significant advantage in the global e-commerce market over D2C, as transaction volume is typically higher, inducing economies of scale.²⁷

SMEs weigh their compliance burden differently depending on the model they employ for

²⁴ Interviews with SMEs A, B, and C (November 25, 2022).

²⁵ Interviews with SMEs A, B, and C (November 25, 2022).

²⁶ Interviews with SMEs A, B, and C (November 25, 2022).

²⁷ Owing to these characteristics, B2B e-commerce makes up most of global e-commerce (OECD, 2014). Statista (2022) reported that the global B2B e-commerce market was valued at \$17.9 trillion in 2021, which was more than five times larger than the B2C market.

e-commerce exports.²⁸ Using the D2C model, SME exporters predominantly rely on couriers and e-commerce programs to access compliance information and comply with customs laws and rules. While exporters feel that obtaining information about the *de minimis* threshold or immediate release in importing countries is cumbersome, essential in pricing, they rarely feel a compliance burden for export clearance. Their compliance is often decided not by their compliance activity but by the linkage among the programs used in the e-commerce supply chains. This minimizes human intervention and errors and provides supply chain visibility.²⁹ Therefore, SMEs often choose D2C exports.

In contrast, when using the B2B model, SMEs blame the compliance burden on customs clearance mechanisms that act as an entry barrier to the global market.³⁰ The B2B model, where the release from the manifest scheme is not applied, may pose greater risk and uncertainty for SMEs lacking the resources to access compliance information. Additionally, they feel the burden is more onerous because they often require compliance information from importing countries.³¹ Despite e-commerce shopping mall operators and couriers providing information for SMEs on their websites, it is often too complex for SMEs, where just a handful of individuals handle manufacturing, marketing, packaging, and customer service.³²

Program developers have identified the problems related to diverse user programs for e-commerce exports. Because express delivery companies and postal services are not unified, exporters must be familiar with several different systems when using multiple companies and services. Managing export records in an integrated manner is very challenging. In addition, since couriers and e-commerce shopping mall operators develop user programs, it is difficult for exports to reflect their demands on system development.

In this context, Australia, New Zealand, Norway, the United Kingdom, the EU, and Singapore have adopted the vendor collection model, where VAT exemption on the sales of low-value goods has been abolished and importing countries require exporters to pay VAT on the sales of goods in their territory to their tax authorities (Brondolo & Konza, 2021). In this model, exporters must compute and pay the VAT for all imported goods whose value is equal to or below the *de minimis* threshold for customs duties. Since the VAT tax base is based on the customs value³³ (WCO, 2015), e-commerce exporters require expert knowledge about customs values and VAT laws in importing countries.

Customs brokers who participated in the interviews expressed deep concern about the compliance burden this vendor collection model will impose on SMEs in e-commerce exports.³⁴ The model requires exporters to register in the importing countries, and compute and pay VAT based on the customs value. These requirements complicate the export procedures and entail compliance knowledge and experience that SME exporters do not have and cannot afford. Furthermore, the new model makes trade facilitation measures to simplify

²⁸ Interviews with SMEs A, B, and C (November 25, 2022), Interview with Freight Forwarder (October 21, 2022), Interviews with Program Developer A (October 21, 2022) and B (November 11, 2022)

²⁹ Interview with Freight Forwarder (October 21, 2022), Interviews with Program Developer A (October 21, 2022) and B (November 11, 2022)

³⁰ Interviews with SMEs A, B, and C (November 25, 2022).

³¹ Interviews with SMEs A, B, and C (November 25, 2022).

³² Interview with Freight Forwarder (October 21, 2022), Interview with Customs Brokers A (October 17, 2022) and B (October 20, 2022), Interviews with SMEs A, B, and C (November 25, 2022).

³³ "Customs value" refers to a tax base for customs duty computed in compliance with the rules set by "WTO Customs Valuation Agreements."

³⁴ Interview with Customs Brokers A (October 17, 2022) and B (October 20, 2022)

e-commerce export clearance procedures useless.

As such, certain levels of compliance capabilities are required for SMEs to scale up and continue their e-commerce exports. However, current trade facilitation measures are primarily limited to minimizing the involvement of exporters and simplifying procedures. The next chapter discusses trade facilitation instruments that help SMEs develop independent compliance capabilities.

5. Conclusion: Facilitation Measures Bridging Compliance Capacity Gaps

The immediate release and *de minimis* were effective measures, while international e-commerce volume was insignificant. However, as international e-commerce and revenue controls have increased, they have become less compelling, with many other limitations in risk management and voluntary compliance emerging. Furthermore, adopting vendor collection models in importing countries implies additional procedures, complicating the overall e-commerce export process and requiring enhanced compliance capabilities for exporters. Developing the compliance capacity necessary for the model can be exorbitant for SMEs.

Research question 5 explores how to reduce SME compliance costs while motivating them to build compliance capacity by improving risk and compliance management under e-commerce export facilitation measures.

RQ 5. What instruments are required to improve the risk and compliance management for SME e-commerce exports, and what are the implications of this for customs administration?

This study shows that, in the changed cross-border e-commerce environment, a fundamentally different effort for trade facilitation is required for exporters to be in compliance with the law. Measures to reduce compliance costs in e-commerce exports by simplifying procedures and reducing exporters' involvement give certain satisfaction in the short term. Still, even a slight change in the compliance environment makes the measure useless. However, ensuring exporters have the necessary competencies to be in compliance with the law allows them to continuously respond to changing circumstances. As the proverb says, giving a man a fish feeds him for a day, but teaching him to fish feeds him for a lifetime.

This study suggests that trade facilitation efforts should balance the technological aspects and the need to build a cooperative risk management and voluntary compliance system among stakeholders for international e-commerce. In the technical area, efforts are needed to improve the quantity and quality of risk data. Risk management, the foundation of trade facilitation, also supports traders' voluntary compliance (WCO, 2010). Planning and implementing a voluntary compliance program requires individual traders' compliance history created through risk management. However, as discussed in research questions 2 and 3, a release from the manifest scheme has risk management deficiencies, particularly in risk data collection, jeopardizing the effective implementation of voluntary compliance programs. Therefore, trade facilitation measures for e-commerce exports can be improved first by enhancing the risk data collection process.

As Geourjon and Laporte (2005) suggested, the quantity and quality of risk data must be considered to address risk management issues without complicating trade procedures. Risk

data under the release from the manifest scheme can be enhanced based on more data sources, including e-commerce shopping malls, couriers, and postal operators, as WCO (2018a) suggested. The relevant customs laws must also include data-sharing provisions among e-commerce export stakeholders.³⁵ Technical issues in sharing information with postal operators must also be addressed by harmonizing datasets required for export clearance processes. By improving risk management for release from the manifest scheme, customs authorities can enhance export controls and the exposure probability for noncompliant exporters.

Improvements in data quantity also contribute to increased risk data quality, such that data omissions and human errors can be corrected by comparing data from different sources. However, the overriding advantage is that they provide a sound base for the effective operation of voluntary compliance programs (WCO, 2019). Government information assistance via online media, not customized to individual traders' needs, often causes information overload. However, with the quality risk data by individual traders, customs can provide exporters with the relevant compliance information, training, and consultation. Therefore, customized voluntary compliance programs incentivize participation by reducing compliance costs.

The explanation that SMEs have low compliance capabilities due to a lack of resources only tells part of the story. A more fundamental reason for the poor ability of SMEs to comply with regulations is that other stakeholders have no incentive to help them comply. For example, a courier or a customs broker does not earn direct profits by guiding or consulting on export declarations of individual exporters. Furthermore, the export declaration user program is dominated by one or two small developers, and there is little incentive for new developers to participate, forming a monopolistic market. For this reason, it is unrealistic to expect a system that complements the needs of individual exporters or the ability to be in compliance with laws and regulations.

To ameliorate this situation, the government should help develop and support programs for e-trade export consulting, providing services to couriers and customs brokers to aid exporters in developing compliance capabilities. In particular, the current private services for customs clearance are mainly focused on importing, and customs brokers provide services only at the domestic level. Therefore, trade facilitation measures should include research and education programs that focus on legal compliance requirements for international e-commerce exports to be shared with exporting SMEs.

In addition, the government should encourage private program developers to develop programs that help SMEs comply with e-commerce-related regulations. Competition for better system development should be encouraged by introducing an evaluation and accreditation system for developed private programs.

With the changes in the international e-commerce export environment, exporters' compliance capacity will determine the competitiveness of e-commerce exports. Trade facilitation measures focused on simplifying procedures are increasingly ineffective for many SMEs without solid support systems to build their compliance capacity to survive in the global

³⁵ Article 254 Customs Act (effective as of April 1, 2023) provides that The Commissioner of the KCS may separately prescribe matters necessary for customs clearance for exported or imported goods traded through digital documents, including export or import declarations and the inspection of goods and other relevant matters. However, Article 3 of the Public Notice on Special Customs Clearance Procedures for E-Commerce Products clarifies that the scope of the such information sharing is limited to "import products."

market. Therefore, this study argues that trade facilitation measures for e-commerce export clearance must be reexamined and reformed for compliance capacity building by enhancing risk and compliance management.

This study examined ways to support SMEs in the changed e-commerce export compliance environment. Facilitation measures for e-commerce exports have contributed to SME access to global markets, simplifying export clearance procedures and saving compliance costs. However, such efforts have limitations in cultivating SME compliance capabilities to cope with intensified competition and strengthened controls over foreign exporters in cross-border e-commerce. This study highlights the importance of reshaping facilitation measures to provide ways to improve exporters' e-commerce compliance capacity based on risk and compliance management theories. By establishing technical improvements in risk data systems and cooperative networks among stakeholders for e-commerce exports, this study suggested that trade facilitation efforts should aim at measures that are akin to teaching individuals how to fish.

This study's academic significance derives from examining the relationship between trade facilitation measures and risk and compliance management through an actual case in Korea. It is also of practical importance in navigating improved facilitation measures for e-commerce exports in a changed compliance environment.

Recent advances in information and communication technologies (ICTs) have influenced the overall performance of trade facilitation measures in customs administration. There were limitations in examining the impact of ICTs in trade facilitation, risk management and voluntary compliance in e-commerce export clearance. It is hoped that the subject can be covered in future research and that the frameworks presented in this study can advance this critical undertaking.

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