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Assessment of Customs Brokerage Performance in Vietnam: A Study of the Analytic Hierarchy Process (AHP)

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This study aims to apply a fact-based methodology called the Analytic Hierarchy Process (AHP) to evaluate the performance of customs brokers in Vietnam. It involves weighting the importance of factors affecting the quality of customs brokerage service based on market rules and regulatory compliance. The significance of the factors was ranked through the AHP method, based on expert opinions gathered from semi-structured interviews with 10 senior managers with over five years of service among Vietnam's customs brokers. The results indicate that professional qualification, trade compliance and professionalism marked by high commitment, trustworthiness and adaptability with customers, are the most critical factors influencing the quality of customs brokerage service. Building upon the AHP model, the study formulates the Vietnam Customs Broker Scoring Criteria for the General Department of Vietnam Customs (GDVC).

1. Introduction

For a long time, customs brokers have been central actors in global supply chains, leveraging their professional expertise in international trade, customs transactions, worldwide networking, experience and regulatory compliance, to facilitate the movement of goods across national borders. Widely recognised as extensions of customs forces in many countries, customs brokers seamlessly connect with traders and customs declarants to ensure regulatory compliance and facilitate trade (World Customs Organization [WCO], 2018). Customs brokers are appointed to conduct partial or complete customs clearance procedures for imported and exported goods on behalf of the owners, in adherence with customs laws and regulations. In the context of a market economy, providing a customs brokerage service is a commercial activity and governed by market-driven rules.

Around 1,000 firms are established in Vietnam, who are legally accredited to act as qualified customs brokerage agents (herein called customs brokers) employing nearly 3,000 customs-licensed staff (General Department of Vietnam Customs [GDVC], 2022). In accordance with Vietnam's customs law and regulations, customs broker-licensed staff are officially recruited and appointed in long-term roles to handle export-import customs clearance for clients, serving as customs declarants under the terms of service contracts. With the objective of strengthening professionalism, efficiency and

effectiveness of customs brokerage in Vietnam, the GDVC periodically organises training programs and licence examinations for individuals who desire to participate as customs brokers in Vietnam.

According to the GDVC (2022), several factors explain the reasons behind the customs brokerage industry's failure to achieve growth and development in alignment with the targets and expectations set by the Vietnam Government, the GDVC and major players in global supply chains. First, many Vietnamese domestic exporters and importers continue to handle customs clearance independently, holding on to old-fashioned and traditional business practices. Changing their attitudes and persuading them to outsource to customs brokers proves challenging. On the other hand, the Vietnam-based foreign direct investment (FDI) enterprises often use customs clearance services provided by the customs brokers for exports and imports. Nevertheless, FDI enterprises highly value the professionalism and qualifications of international customs brokers operating as global logistics firms. This presents fierce competition for the Vietnamese customs brokers, even within the home country's market. Second, there are no preferential mechanisms and facilitating measures for declarations using customs brokerage service in Vietnam. In 2022, 73 Vietnamese enterprises were verified as Authorized Economic Operators (AEOs), entitled to several trade facilitation privileges and seamless customs clearance processes. However, no customs broker has obtained AEO status due to the requirement of a minimum of 20,000 customs declarations per year under their name. Third, most Vietnamese customs brokers come under the category of small and medium sized enterprises (SMEs) with limitations in legal and financial capacity, because of which they face challenges in fully representing clients for all customs procedures and providing comprehensive support to the customs force in regulatory compliance and trade facilitation. Finally, there are instances of unethical and dishonest behaviour among certain customs-licensed individuals. While they are officially employed as Vietnamese customs brokers and legally designated by the employers to provide customs clearance services, they conceal their legal status and customs-granted licences for private business and operate under the customers' name and status without service contracts as required by regulations. This phenomenon results in unqualified services and limited liabilities, as well as losses and damage to the clients, exporters and importers. In addition, it damages the partnerships between customs officers, business firms and customs brokers regarding trade facilitation and regulatory compliance.

The purpose of this paper is twofold: first, to evaluate the performance of customs brokers providing customs brokerage services with a focus on trade compliance and competitive capacity; and second, to develop a framework with measuring criteria to evaluate the performance of customs brokers in Vietnam. To narrow down the discussion, the problem formulated in this piece of research presents key questions for the customs brokerage industry in Vietnam. These questions are:

1. How to evaluate performance and customs service quality of the customs brokers in Vietnam?

2. What are the crucial factors affecting the performance of customs brokers in Vietnam?

3. What are the solutions and measures to enhance the roles of customs brokers in connection with customs forces and traders aiming to fulfil the missions of trade facilitation and compliance outlined by Vietnam Customs?

To answer these questions, the study proposed a set of measuring criteria based on scientific and factual analysis, a national customs broker survey, and the application of the Analytic Hierarchy Process (AHP).

This paper comprises three main sections. The first section provides an overview of customs brokerage regarding trade in service and regulatory compliance in alignment with Vietnam's laws and regulations as well as international standards and practices. The subsequent section conducts AHP calculations for measuring and scoring the factors affecting the performance of customs brokers in Vietnam. The final section proposes a framework for the Vietnam Customs Broker Scoring Criteria for the purpose of evaluating customs brokers aiming to promote Vietnam's customs brokerage in alignment with Vietnam Customs' strategy, *Development Strategy Towards 2030* (Vietnam Government, 2022).

2. Theoretical framework

According to Vietnam's Customs Law of 2014 and regulations on customs brokerage:

> Trade in service of customs brokerage is a commercial activity that the customs broker represents the goods owner (herein known as the exporter/importer/cross-border transit service provider) to make the customs declaration; submit and present the customs documents relating to the exported/imported goods according to the regulations and carries out partially or completely the activities relating to customs procedures, and the goods owner makes payment according to the provisions in the service contract. (Vietnam's Ministry of Finance, n.d.)

In concrete terms, the customs broker (director, or individuals authorised by the director, according to the legal provisions) shall sign a brokerage contract with the goods owner; individuals issued with customs broker numbers shall submit the customs declarations and conduct procedures in accordance with the contract signed with the goods owner. The director of the brokerage agency or individuals authorised by the director in accordance with the law shall sign and affix seals on the customs declarations and the invoices included in customs documents during the execution of contracting

activities. The customs broker shall present the brokerage contract to the customs authority only when any violation against customs regulations is detected.

Vietnamese customs brokers are enterprises who meet all legal requirements and specialised regulations of customs brokerage operations. They are typically recognised by possessing a business registration certificate or an enterprise registration certificate, explicitly indicating the operation of goods forwarding or customs brokerage. Additionally, they recruit employees specifically for customs brokerage services and maintain an information technology infrastructure that meets the requirements for electronic customs declaration Furthermore, Vietnamese customs employees are verified and certified by the GDVC. A customs broker employee must be a citizen of Vietnam with a degree in economics, law or a relevant technical field; a certificate of training in customs declaration; and a customs employee code granted by a local customs department.

In the global trade ecosystem, customs brokers play a pivotal role in connecting business firms and customs forces with regards to trade compliance and supply chain management As mentioned in the Trade Facilitation Agreement (TFA) of the World Trade Organization (WTO), customs brokers are the main stakeholders in the international supply chains whose expertise and professionalised practices play a crucial role in facilitating and securing global trade. Viewed as the key partners of business enterprises, especially SMEs, customs brokers help to reduce time and costs associated with customs clearance. Their assistance ensures smooth cross-border trade, operational efficiency and effective competition (United States Customs and Border Protection, n.d.).

For businesses, customs brokers are customs-related service providers and their performance is qualified and verified by customers through a set of '10 Cs' as evaluating criteria, which include competency, capacity, commitment, control, cash, cost, consistency, culture, clean and communication (Carter, 1995). Cronin and Taylor's (1992) SERVPERF model focuses on five core pillars contributing to customer satisfaction that include physical appearance, commitment, adaptation, competency and empathy.

In principle, customs brokers are commercial service suppliers who are playing in a market-ruled game, and are assessed and selected by customers based on good quality, performance, effectiveness and efficiency.

According to the International Convention on the Simplification and Harmonization of Customs Procedures 1999 (also known as the Revised Kyoto Convention) (WCO, 1999), a customs broker is a legal entity or an individual engaged in conducting customs procedures under a service agreement with a customs declarant, either as another organisation or in a personal capacity (WCO, 2018). A customs broker must meet several core requirements regarding qualifications, business administration and customs-operated practices and standards such as legal status, customs-specialised

professionalism, a qualified human workforce and information technology (IT)-driven infrastructure (International Federation of Customs Brokers Associations, 2009).

Furthermore, the WCO suggests that legal capacity, customs-related knowledge, practices and a skilled workforce are the best competitive advantages for a customs broker in the realm of global trade and customs (WCO, 2018). In the era of digitalisation, advanced IT infrastructure and smart technology, a highly digitalised network and administrative systems are the most capitalised items of customs brokerage services to be considered as key stakeholders in the customs-connected ecosystem and global supply chains.

In most countries, including Vietnam, ongoing performance assessment is most frequently linked with licence renewal and relies on self-reporting (WCO, 2016). Neither customs broker audits nor other assessment methodologies are widely used. Even if IT system capabilities provide for specific data on a variety of customs broker interactions with the customs authority, it does not appear that customs administrations consider the collection and assessment of those data as a worthy pursuit. There are two likely reasons, namely 1) the ultimate liability of the importer and the dependence of the customs broker on data received from the importer that directs audit attention to the importer or exporter; 2) the customs broker value proposition, which is neither exclusively nor heavily weighted on the data points that exist within customs IT systems (United States Agency for International Development [USAID], 2022). Performance measurement is further complicated when a licensed individual is an employee of a licensed or otherwise regulated customs brokerage company or when there is more than one licensed individual within a customs brokerage service. In the first instance, any assessment must be able to distinguish between the acts of the licensed entity and the acts of an individual licence holder within its employment. In the latter case, defined areas of responsibility may exist, as opposed to the broad scope of work that a licensed customs broker could undertake (USAID, 2022).

3. Methodology and Data

3.1. Analytic Hierarchy Process

In socioeconomic research, the assessment of objects (countries, cities and organisations) for complex phenomena (sustainable development, quality of life, and quality of services) is carried out through questionnaire studies and ordinal measurement scales (most often, the Likert scale). As complex phenomena are subject to assessment, an unambiguous assessment is difficult. The solution to this may involve using multi-criteria decision-making methods (MCDM) that allow the consideration of the influence of many partial criteria (sub-criteria) on complex phenomena (Badulescu et al., 2021).

Table 1. Matrix fulfilment

	C_1	C_2	C_3	...	...	C_n		Criteria weight (w_i)
C_1	1	a_{12}	a_{13}	...	...	a_{1n}		w_1
C_2	a_{21}	1	a_{23}	...	...	a_{2n}		w_2
C_3	a_{31}	a_{32}	1	...	...	a_{3n}		w_3
...	...	...	...	...	...	...		...
...	...	...	...	...	...	...		...
C_n	a_{n1}	a_{n2}	a_{n3}	...	...	1		w_n

Note: All $a_{ij}{}^*a_{ji}$ equal 1; C = criteria
Source: Authors

There are several approaches to the supplier of the solution in current literature, which include AHP, Fuzzy AHP, Data Envelopment Analysis, Mixed Integer Programming, Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), Fuzzy TOPSIS, Quality Function Deployment (QFD), Fuzzy QFD, Analytic Network Process and Expert Systems.

Within the scope of this study, a fuzzy AHP solution was designed for the assessment of Vietnamese customs brokers' performance. According to Saaty (1980) and Doloi (2008), this approach involves six essential steps, which are elucidated below.

Step 1. Define the problem and clearly state the objectives and results.

Step 2. Decompose the complex problem into a hierarchical structure with decision elements (criteria and alternatives).

Step 3. Employ pairwise comparisons among decision elements and form comparison matrices with fuzzy numbers.

Step 4. The priority vectors for each matrix in the hierarchy would then be created using a prioritisation technique. The eigenvector equal to the largest eigenvalue of the considered matrix is then used to determine the weights of each comparison matrix.

Step 5. Where 'w' is the priority vector and 'A' is a consistent pairwise comparison matrix, the separate weights are added to determine the weight of each option at the bottom of the hierarchy. The matrix fulfilment is tabulated in Table 1.

Step 6. After calculation, a consistency check is run to ensure that the pairwise comparison matrix judgements are made properly and thoroughly. The consistency ratio (CR) of a pairwise comparison matrix is calculated using equation:

$$CR = CI/RI$$

Where CI means the consistency indicator,

$$(CI = \lambda \max - n)/(n - 1)$$

λmax is the highest value in the pairwise comparison matrix, by using the calculation:

$$\lambda_{\max} = \sum_{i=1}^{n} wi * \sum_{j=1}^{n} a\mathring{\imath} j$$

Table 2. Random Inconsistency Index (RI)

N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.54	1.56	1.57	1.59

Note: 'n' refers to the dimension of the pairwise comparison matrix
Source: Saaty (1980)

Wi is the weight of criteria i after calculation. RI corresponds to the random inconsistency index and is extracted from Table 2.

If the CR is less than 0.1, the pairwise comparison matrix is within an acceptable range of consistency; otherwise, the judgements are to be revised. Calculations were performed based on the answers obtained via the designed questionnaire (Yager, 1981).

3.2. Application of Fuzzy AHP to Assessing Vietnamese Customs Brokers

This research focused on analysing the quantitative factors influencing the performance and service quality of customs brokers. Ten customs brokers situated in various regions of Vietnam took part in this study, all of whom were highly rated by Vietnam Customs due to their excellent performance in customs clearance value, customs declarations, regulatory compliance, customs tax, effectiveness and efficiency. Among the customs brokers analysed, 20 per cent had 100 per cent state ownership, 20 per cent had 100 per cent foreign ownership and the private sector accounted for 60 per cent. In terms of working capital, 30 per cent had a range of VND20–50 billion and from VND100–300 billion, while 40 per cent fell within the range of VND50–100 billion.

This research was divided into five main phases for the AHP analysis, as described below.

Phase 1: Comprised of an extensive literature review of the research papers written on customs brokerage, trade compliance, customer satisfaction and service provider selection. The authors synthesised 11 major factors, namely: competency, adaptation, capacity, commitment, control, capital, costs, consistency, culture, business communication and international integration (see Appendix 1). An online questionnaire was developed using Google forms and sent to participants as a link. This initial survey aimed to collect views and opinions of customs experts and customs officers about factors affecting the quality of customs service and the performance of customs brokers in Vietnam. The responses were mathematically measured with Cronbach's Alpha indicators (University of California Los Angeles [UCLA], n.d.) to finalise reliable, consistent and realistic factors.

Phase 2: Compilation of a list of factors (including six major criteria and 18 sub-criteria) from the desk-based study and the first survey, represented in Table 3.

Table 3. Factors affecting customs brokerage performance and service quality in Vietnam

No.	Major criteria	Sub-criteria	Reference
1	Professional Qualification (PQ)	Specialised Certificates	GDVC, 2022
		Specialised Activities	GDVC, 2022
		Work Quality	GDVC, 2022
		Innovation and Creativeness	GDVC, 2022
2	Business Administration (BA)	Organisational Structure	Carter, 1995
		Professional workforce	WCO, 2018
		International Connecting Network	WCO, 2018
		Governance Awards	GDVC, 2022
3	Customs-centric Professionalism (CP)	Commitment	Carter, 1995
		Credibility	Carter, 1995
		Adaptiveness	Cronin & Taylor, 1992
4	Organisational Culture (OC)	Branding	Cronin & Taylor, 1992
		Cultural Value	Cronin & Taylor, 1992
5	Trade Compliance (TC)	Database	WCO, 2018
		Risk Management	GDVC, 2022
		Customs-Business Partnership	WCO, 2018
6	Business Communication (BC)	Customer Relations	Cronin & Taylor, 1992
		Business Partnership	WCO, 2018

Source: Authors

Phase 3. Design of the Fuzzy AHP questionnaire: the questionnaire was designed in accordance with the factor areas highlighted in Table 3. The design involved comparing two factors and selecting the most preferred factor based on responses from the interviewed staff. The scale between the sub-criteria and the major criteria was marked from the 17 values (1/9; 1/8; 1/7;...; 1; 2; 3; 4; 5; 6; 7; 8; 9) as Judgement or Preference Numerical Rating, which are Extremely Preferred, Very Strongly Preferred, Strongly Preferred, Moderately Preferred and Equally Preferred, as depicted in Table 4.

Phase 4: Data collection: the data was collected from a field trip together with a delegation of customs officers from the GDVC in 2022. Direct interviews were conducted with senior management of the top 10 customs brokerages in the northern, central and southern regions of Vietnam, each with more than 10 years of working experience and a wide range of clients in Vietnam and beyond. They were requested to fill out a questionnaire based on the AHP to provide their responses (see Appendix 2). In conjunction with the AHP questionnaire survey, the authors conducted several qualitative open-ended interviews with senior managers and directors to gain comprehensive insights into Vietnam's customs brokerage sector.

Table 4. Saaty's scales of comparison

Intensity of preference	Definition	Explanation
1	Equally Preferred	Two activities contribute equally to the objective
3	Moderately Preferred	Experience and judgement slightly favour one activity over another
5	Strongly Preferred	Experience and judgement strongly favour of one activity over another
7	Very Strongly Preferred	An activity is favoured very strongly over another; its dominance demonstrated in practice
9	Extremely Preferred	The evidence favouring one activity over another is of the highest possible order of affirmation
2,4,6,8	For compromise between the above values	Sometimes one needs to interpolate a compromise judgement numerically because there is no good word to describe it

Source: Saaty (1980)

Table 5. Importance of factors affecting the performance of customs brokers

Major criteria	Subcriteria	Priority		Ranks	
		Major	Subcriteria	Major	Subcriteria
Professional Qualification	PQ1	0.128	0.017	3	14
	PQ2		0.012		16
	PQ3		0.031		10
	PQ4		0.068		5
Business Administration	BA1	0.111	0.027	4	11
	BA2		0.057		6
	BA3		0.016		15
	BA4		0.011		17
Customs-centric Professionalism	CP1	0.206	0.048	2	7
	CP2		0.136		2
	CP3		0.022		13
Organisational Culture	OC1	0.043	0.037	6	9
	OC2		0.006		18
Trade Compliance	TC1	0.447	0.085	1	4
	TC2		0.110		3
	TC3		0.252		1
Business Communication	BC1	0.067	0.041	5	8
	BC2		0.026		12

Source: Authors

Phase 5: The questionnaire analyses employed multi-criteria decision-making techniques to transform qualitative data on criteria preference into quantitative data, allowing for the prioritisation of factors accordingly. The AHP is used to calculate the influence factors from the provided criteria list.

4. Results and discussion

Calculations were made based on the answers obtained through the questionnaire. The criteria priorities were determined through a focused group discussion involving the three parties (researcher, customs officer and customs agent). All CRs were less than 0.1, indicating the consistency of the responses. The AHP analysis is illustrated in Table 5.

The number one ranking of trade compliance reveals that Vietnamese customs brokers acknowledge the importance and obligation of complying with laws and regulations in conducting customs clearance activities for exports and imports. This factor is necessary not only for fulfilling service contracts but also for verification and recognition by Vietnam Customs under the risk management program. It aligns with the global standards on customs brokers of the WCO and the Customs Broker Association of the US and Canada.

The score of customs-centric professionalism and professional qualification with sub-criteria of credibility, commitment, specialised activities, creativity and innovation, specialised certificates and work quality are second and third, underscoring the importance of the certified human workforce who cleared the Vietnam Customs' exams to become highly qualified experts. Furthermore, customs-centric professionalism receives a score of 0.206, which underlines the central role of customs brokers as key stakeholders in international supply chains connecting traders and customs forces.

Furthermore, business administration, organisational culture and business communication rank at the bottom of the list of influential factors according to the perspective of Vietnamese customs brokers. This explains the main concerns of clients about business ethics and integrity. In particular, the sub-criteria of professional workforce (under the criteria of business administration) gained a score of 0.057, which highlights the valuable contribution of the customs broker-licensed staff who directly handle export-import customs clearance for clients, serving as customs declarants under the terms of service contracts.

5. Conclusion and recommendations

For the GDVC, the study provides a framework to evaluate and categorise Vietnamese customs brokers based on scoring criteria and sub-criteria that influence performance and quality service. This is fact-based, reliable and feasible because the Vietnam Customs IT system capabilities could provide for big data on a range of interactions between customs brokers and the customs authority.

For the Vietnamese customs brokers, the study emphasises the requirements of trade compliance, customs-centric professionalism and professional qualifications for better customs brokerage performance and service quality. This study also delivers the key message that Vietnamese customs brokers should gain the loyalty and satisfaction of their clients, exporters and importers by developing organisational culture and customer relations. By fulfilling all these objectives, developing a professional workforce of customs broker staff who are verified and certified by the GDVC is the top priority for the Vietnamese customs broker sector.

This research would be more comprehensive if further direct surveys and interviews were conducted with Vietnam's customs brokerage service providers, particularly SMEs who account for a large proportion of the customs brokerage community in Vietnam. In addition, engaging with other

government agencies would be valuable, as their expertise, professionalism and recommendations on trade compliance and business administration for customs services are greatly needed. Other studies, from the perspectives of clients who are exporters and importers, should be considered in future research for delivering comprehensive insights into customs brokerage.

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Supplementary Materials

Appendices

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