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An Integrated WENSLO-WASPAS Model to Prioritize Factors Contributing to Learned Helplessness in Export Processes

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ABSTRACT

In the contemporary global economy, nations compete vigorously to strengthen their market positions, sustaining continuous production across industrial sectors to enhance comparative advantage. Within this competitive landscape, the present study examines the underlying causes of repeated export failure among firms by employing advanced multi-criteria decision-making techniques. Specifically, it analyses why certain firms, after experiencing multiple unsuccessful export attempts, refrain from independently re-engaging in international trade activities, conceptualising this phenomenon through the lens of learned helplessness within the export context. The empirical component involves seven experienced Decision-Makers (DMs) who had previously encountered recurrent export failures before ultimately establishing themselves as professional exporters. Primary data were obtained using a structured expert assessment instrument grounded in linguistic importance scales. The determinants associated with export process failure were identified through the application of the Weights by Envelope and Slope (WENSLO) method. Subsequently, the Weighted Aggregated Sum Product Assessment (WASPAS) technique was employed to prioritise policy alternatives designed to mitigate export-related failure. The findings reveal that "Customs Clearance and Logistics Operations" constitute one of the most influential contributors to export process breakdown. Furthermore, the most effective policy intervention is determined to be the formulation of sector-specific advisory mechanisms and electronic training modules focused on documentation preparation and customs procedures. The integrated analytical framework developed in this study provides a structured decision-support mechanism for policymakers and export promotion agencies, enabling the systematic identification of critical bottlenecks in export activities and the strategic prioritisation of corrective policy measures.

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1. Introduction

International trade functions as a catalyst for economic expansion by facilitating cross-border exchanges of goods and services. Countries derive reciprocal advantages by specialising in production according to their resource endowments and comparative competencies [62]. Beyond economic gains, international trade enhances global interconnectedness through the diffusion of technological innovation and the intensification of cultural interaction. For trade to operate effectively, two foundational mechanisms must be acknowledged: export and import. Import refers to the acquisition of goods from foreign markets for domestic use, whereas export denotes the sale of domestically produced goods or services to overseas buyers [25]. In the contemporary environment characterised by intensified competition, governments seek to generate higher value-added output and commercialise it internationally to strengthen macroeconomic performance. Consequently, export orientation has become a central component of national economic strategy.

Public authorities promote export activity to secure foreign exchange earnings and elevate national welfare levels. Such promotion frequently involves investments in capacity building, including the development of specialised human capital in both economic and export-related domains [40]. Nevertheless, despite institutional incentives and training initiatives, export engagement is typically driven by entrepreneurs aspiring to expand into global markets. These actors often rely on sectoral expertise, iterative trial-and-error approaches, or intermediary organisations to navigate foreign market entry [37]. Given the procedural complexity of exporting, the scarcity of experienced intermediaries, and limitations in formal training structures, a substantial proportion of initial export attempts culminate in failure. Empirical evidence indicates that entrepreneurs experiencing repeated export setbacks frequently abstain from further attempts [14]. This behavioural withdrawal reflects the emergence of learned helplessness within export activities. Learned helplessness, also described as acquired failure syndrome, represents a psychological condition in which individuals conclude that their actions are incapable of altering outcomes following repeated unsuccessful experiences [57].

Exporting constitutes a multidimensional commercial domain that integrates customs administration, logistics management, marketing strategy, and regulatory compliance, each presenting distinct operational challenges that necessitate comprehensive analysis [49]. Failed efforts to penetrate export markets often impose adverse psychological and financial consequences on entrepreneurs and small enterprises. These recurrent disappointments may originate from bureaucratic intricacies, knowledge deficiencies, or constrained access to institutional support frameworks. As unsuccessful experiences accumulate, they undermine self-efficacy and reduce motivation to re-engage in internationalisation. Persistent exposure to such setbacks can culminate in learned helplessness, whereby individuals develop the belief that sustained effort will not yield success [54]. This psychological barrier constrains entrepreneurial initiative and restricts participation in global commerce. The challenge is particularly acute in emerging economies, where insufficient advisory systems and institutional backing intensify vulnerability to repeated export failure [8]. Over time, entrepreneurs may internalise failure as an inevitable outcome, thereby weakening innovation capacity, resilience, and sustainable export growth.

The present study examines the determinants underlying learned helplessness within the export process. Considering that exporting involves sequential procedural stages, the analysis seeks to identify the specific phases at which unsuccessful entrepreneurs discontinue their efforts. An extensive review of the literature on both the export process and learned helplessness provides the theoretical foundation. The methodological framework incorporates advanced Multi-Criteria Decision-Making (MCDM) techniques grounded in expert judgement. Criteria associated with export-related helplessness were derived from both scholarly sources and sectoral insights and

subsequently operationalised in the empirical application. These criteria were evaluated by Decision-Makers (DMs) comprising managers of firms that had previously attempted exporting multiple times without success prior to engaging professional consultancy support. The DM group consisted of seven individuals, each representing a company with repeated unsuccessful export experience within its respective industry. Following these attempts, the firms proceeded with export activities under the guidance of specialised consulting organisations. Each DM possessed over a decade of professional experience in their sector. The identified criteria were analysed using the Weights by Envelope and Slope (WENSLO) method to calculate relative importance based on DM assessments. Subsequently, the Weighted Aggregated Sum Product Assessment (WASPAS) technique was employed to evaluate and rank policy alternatives in accordance with the derived criterion weights. This investigation is structured around five principal Research Questions (RQs):

RQ1: How do entrepreneurs often give up on exporting?

RQ2: What leads to helplessness in enterprises that export?

RQ3: Which export process phases require assistance from nations and governments to be better understood?

RQ4: What is the impact of technical and regulatory barriers on businesses' exporting motivation?

RQ5: How effective are training, mentoring, and consulting services in reducing entrepreneurs' learned helplessness during the export process?

The structure of the manuscript is arranged as follows. Section 2 provides a comprehensive review of the relevant literature. Section 3 outlines the conceptual and methodological framework underpinning the proposed model. Section 4 presents the empirical case application together with the analytical results obtained. Section 5 offers a validation of the findings to ensure robustness and reliability. Section 6 elaborates on the practical implications and managerial contributions derived from the study. Finally, Section 7 summarises the principal conclusions and proposes directions for subsequent research.

2. Literature Review

An extensive review of the relevant scholarship was undertaken and structured into five distinct subsections: investigations concerning learned helplessness, analyses of export behaviour, applications of MCDM techniques within export-related research, the specific research gaps targeted in this study, and the formulation of the criteria framework associated with export intention in the context of learned helplessness.

2.1 Learned Helplessness

A substantial body of scholarship has examined learned helplessness across diverse disciplinary contexts. Early experimental evidence provided by Seligman and Maier [55] demonstrated that dogs exposed to inescapable electric shocks subsequently refrained from attempting escape even when opportunities were later available, indicating behavioural passivity following uncontrollable adverse experiences. Expanding this perspective to environmental crises, Ramachandran and George [48] analysed the psychological and behavioural repercussions of recurrent flooding in Kerala. Drawing upon data from 374 households grouped according to flood exposure frequency and applying the Kruskal-Wallis test, their findings suggested that moderate risk exposure may foster adaptive resilience, whereas both excessive and minimal exposure undermine psychological well-being, underscoring the necessity of sustained psychological support within disaster management frameworks. Gunderson [22] further identified a gap between public awareness of ecological degradation and meaningful behavioural engagement, arguing that structurally embedded

helplessness, shaped by political and economic systems, obstructs the transformation of concern into collective action.

In organisational settings, Karani Mehta et al. [27] examined the consequences of psychological contract breach by integrating job stress, psychological empowerment, and learned helplessness into a unified model. Based on survey evidence from 239 employees of Indian public banks, the study revealed that perceived contract violations intensify job stress, thereby diminishing empowerment and overall well-being. Similarly, Xue et al. [66] investigated the association between learned helplessness and mental health among Chinese university students during COVID-19 lockdowns. Their results indicated strong positive relationships between helplessness and anxiety, depression, and stress, while identifying self-compassion as a mitigating factor.

Further empirical studies highlight the negative effects of helplessness learned across professional settings. Qourrichi et al. [46] found that higher helplessness among Moroccan healthcare personnel reduces well-being and increases psychological distress, affecting social cohesion and occupational harmony. Masoom [34], analysing 577 private-sector employees in Bangladesh, showed that stronger self-efficacy mitigates helplessness and perceived lack of control. Sarmah et al. [53] reported that internal and environmental constraints heighten learned helplessness among 209 individuals with physical disabilities, suppressing travel intentions and increasing reliance on destination support. Andrieu et al. [2] observed that repeated exposure to ineffective feedback fosters prolonged silence akin to learned helplessness. Yue et al. [68] found that self-directed learning mediates the effect of psychological capital on helplessness among graduate nursing students. Dolev and Ireni-Saban [13] noted that learned helplessness in public organisations diminishes collaboration by weakening perceived agency, especially during institutional change. Pham and Do [45] demonstrated that teacher support, self-efficacy, and cultural factors significantly influence learned helplessness development among 268 university students.

Conceptually, learned helplessness is characterised by a cognitive transition from encountering uncontrollable events to generalising the expectation that future outcomes will likewise remain beyond personal influence. Within the domain of international trade, exporting extends beyond technical procedures to encompass a succession of demanding stages that directly challenge entrepreneurs' perceived control. Recurrent failures in intricate processes, including customs clearance and logistics management, may represent objectively uncontrollable barriers that progressively weaken confidence and diminish self-efficacy. From a theoretical standpoint, learned helplessness arises when repeated experiences of non-contingency between action and outcome generate a perceived absence of control [57]. Applied to exporting, operational breakdowns, such as unsuccessful customs procedures, logistical interruptions, or limited access to foreign clientele, operate as persistent stressors. Accumulated setbacks gradually erode exporters' self-efficacy and reinforce the belief that future internationalisation efforts will prove futile irrespective of effort. Consequently, export readiness should not be conceptualised solely as a procedural or technical capability; rather, it constitutes a form of psychological resilience that determines whether firms persist in foreign markets or withdraw from them.

2.2 Export Behaviour

Export behaviour encompasses the patterns through which firms initiate participation in foreign markets and sustain their activities within those markets. It incorporates strategic choices including destination market selection, entry mode determination, and the scale and continuity of export engagement. Foundational research indicates that determinants such as organisational learning, perceived risk exposure, and resource endowment play a decisive role in shaping export conduct.

Crozet et al. [11] investigated how French exporting firms adjusted to international sanctions, demonstrating that newly imposed restrictions targeting Iran and Russia significantly lowered the probability of firms maintaining export operations in these destinations. Conversely, the removal of sanctions against Cuba and Myanmar did not generate a statistically meaningful expansion in trade flows. In a related analysis, Görg et al. [20] assessed the consequences of the 2014 EU sanctions against Russia, alongside Russia's retaliatory measures, on German firms' export patterns and performance using firm-level data. Their findings revealed a marked contraction in both the number of exporting firms and the overall export volume. Although firm-level effects were heterogeneous, the aggregate negative impact was largely concentrated among enterprises with substantial dependence on the Russian market.

From an innovation perspective, Yang [67] demonstrated that research and development investment exerts a multidimensional positive influence on export behaviour. Firms with stronger innovative capabilities tend to export larger quantities, diversify product offerings, and penetrate a broader range of destination markets, often serving economies at varying development levels while maintaining competitive pricing structures. More recent evidence further clarifies the innovation–export nexus. Trejo-Moya and Fernández-Sastre [61], using observational data, examined the influence of participation in innovation activities and the adoption of advanced technologies on export probability and export volume. Their analysis showed that technological innovation increases the likelihood of firms entering export markets; however, neither general innovation engagement nor technological adoption significantly enhanced export intensity. Additionally, Wu et al. [65] explored the role of global uncertainty in shaping export strategies among construction firms. The study indicated that rising economic policy uncertainty encourages greater caution in export decision-making and promotes risk management strategies, while simultaneously increasing the domestic value-added component within Chinese construction firms' export structures.

2.3 MCDM Approaches in Analysing Export Process

MCDM techniques have gained prominence as robust analytical instruments for addressing the multidimensional complexities inherent in export activities. These frameworks enable the structured evaluation of interrelated determinants, including logistics efficiency, customs procedures, and financial constraints. By transforming qualitative assessments into quantifiable and comparable outcomes, MCDM models enhance analytical rigour and inform evidence-based policy formulation for export-oriented stakeholders [39]. Monajemzadeh et al. [36] utilised the WASPAS technique to prioritise barriers affecting export sustainability. Their analysis identified export-specific obstacles, transportation infrastructure conditions, and managerial competence as the most critical impediments to maintaining steel exports. Hosseini et al. [24] combined the Delphi approach with fuzzy DEMATEL to determine and rank key determinants influencing export performance. Their findings indicated that exchange rate volatility exerts the strongest influence, whereas marketing factors contribute comparatively less to citrus exports to Russia. Sharkasi et al. [58] applied AHP alongside a modified CRITIC framework to assess determinants of Vietnam's bottled coconut water export potential.

Employing fuzzy VIKOR, Magableh [32] evaluated sourcing alternatives and concluded that Romania represents the most dependable and cost-efficient option due to geographic proximity and established trade relationships. Taghavi et al. [60] implemented ANP to examine export performance drivers, revealing that managerial factors exert greater influence than strategic, internal, or external dimensions. Their results emphasised that aligning innovative management practices with strategic marketing provides a systematic pathway for advancing knowledge-intensive exports. Özaytürk and Özekenci [42] adopted MABAC and MAIRCA methodologies to

assess trade competitiveness among the fifteen-leading textile-exporting nations. Market share emerged as the most influential determinant, while net export value demonstrated the lowest relative weight, with both models consistently identifying China and Italy as dominant performers.

More recently, Chen and Liu [9] integrated data-driven MCDM frameworks to manage escalating risks in global trade operations. Their study employed SWARA to derive criterion weights and COPRAS to rank strategic alternatives, concentrating on regulatory compliance, supply chain exposure, and cybersecurity vulnerabilities. By incorporating the IndetermSoft set to address uncertainty in criterion evaluation, they demonstrated how advanced analytics strengthens international trade decision-making. Similarly, Wang et al. [64] implemented an integrated Entropy-MAIRCA model to assess agricultural performance across 18 East African economies. Their findings identified export capacity and production instability as the most decisive determinants, classifying countries into four strategic groupings based on performance patterns. Table 1 presents a consolidated overview of prior studies employing MCDM techniques within the domain of export process analysis.

Table 1
Most Recent MCDM Studies on the Export Process

References	WASPAS	DEMATEL	AHP	ANP	MABAC	MAIRCA	SWARA	COPRAS	CRITIC
Monajemzadeh et al. [36]	✓								
Hosseini et al. [24]		✓							
Sharkasi et al. [58]			✓						✓
Taghavi et al. [60]				✓					
Özaytürk and Özekenci [42]					✓	✓			
Chen and Liu [9]							✓	✓	
Wang et al. [64]						✓			

Although numerous MCDM approaches have been applied in export research, none have utilised WENSLO. WENSLO is particularly effective for determining criterion weights because it integrates both slope and envelope properties of the dataset. By combining these two dimensions, the method mitigates subjective bias and produces a more balanced representation of the relative importance of each criterion. Unlike purely judgement-based techniques, WENSLO derives weights directly from the data distribution, enhancing both robustness and transparency. This combination of objectivity and sensitivity renders WENSLO especially suitable for complex decision-making contexts involving multiple interdependent criteria. For ranking alternatives, WASPAS presents notable advantages. By integrating WSM and WPM, WASPAS delivers results that are transparent and reliable. Unlike TOPSIS or VIKOR, which rely primarily on distance from an ideal solution, WASPAS incorporates additive and multiplicative perspectives, producing a more balanced evaluation of alternatives. Consequently, this study employs WASPAS to prioritise policy proposals, providing a comprehensive and dependable framework for addressing learned helplessness within the export process.

2.4 Research Gaps

Learned helplessness and export inclination behaviour have not been examined in an integrated manner. While both topics have been studied individually across different domains, comprehensive analyses combining the two are absent. Learned helplessness has been investigated in psychology [33], education [23], sociology [31], neuroscience [4], health sciences [41], and organisational psychology [56], reflecting its multidisciplinary applicability. The broad utilisation of learned helplessness across these areas underscores its relevance in diverse research contexts. Table 2

summarises selected key studies on learned helplessness. In contrast, research on international trade and export behaviour typically emphasises economic and quantitative analyses. Notable studies have focused on determinants influencing the decision to commence exporting [5], the firm internationalisation process [26], and the relationships between innovation and export behaviour [63] or technology and export behaviour [50]. A review of the literature indicates that these two fields—learned helplessness and export behaviour—have not been examined conjointly. Therefore, the present study seeks to bridge this gap and provide an integrated perspective.

Table 1
Learned Helplessness-Related Studies

References	Subject Method	Method
Seligman and Schulman [56]	Organizational Psychology	Cross-Sectional Field Study
Meier et al. [35]	Psychology	Experimental Research
Nuvvula [41]	Health Sciences	Cross-Sectional Survey Study
He [23]	Education	Qualitative Research
Baratta et al. [4]	Neuroscience	Experimental Neuroscientific Research

Existing research on export readiness and internationalisation has largely neglected the psychological mechanisms by which recurrent operational setbacks prompt firms to discontinue exporting. The majority of studies attribute export failure primarily to constrained resources or external market barriers. By integrating learned helplessness theory into the export readiness framework, this study addresses this shortcoming, reconceptualising export failure as a cumulative cognitive and behavioural consequence of repeated procedural challenges rather than merely a structural limitation.

2.1 Criteria Set for Export Intention of Learned Helplessness

The export process has been examined in both sectoral and scholarly studies and is characterised by distinct, sequential stages, as illustrated in Figure 1. The research design of this study follows a structured, stepwise framework. It begins with a comprehensive literature review to establish the theoretical foundation and identify conceptual links between learned helplessness and industry dynamics. This stage situates the study within existing scholarship and highlights the research gap. Following this, an industry analysis is conducted to contextualise the theoretical framework within practical, sector-specific realities. Insights from both literature and industry analysis are integrated to conceptualise the interaction between learned helplessness and the specific industry context.

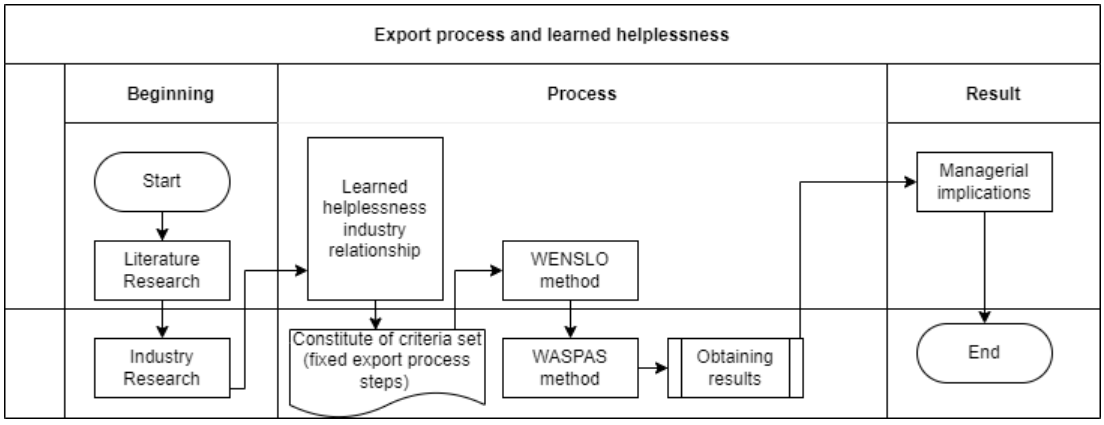

Fig.1: Export Process Application Flow

Subsequently, a set of evaluation criteria is developed through a structured expert-based process. Domain experts are consulted to define, refine, and validate the criteria employed in the MCDM analysis, ensuring methodological rigor and content validity. Once the criteria set is finalised, the analytical phase commences. WENSLO is first applied to determine the relative importance and weighting of each criterion, followed by WASPAS, which ranks the alternatives based on these weights.

The combined use of WENSLO and WASPAS facilitates a comprehensive and robust assessment of the problem. Finally, the results are interpreted, and managerial implications are derived, providing actionable guidance for industry stakeholders and informing strategic decision-making. The study concludes by summarising the key findings and highlighting their theoretical and practical contributions. These procedures underpin the establishment of the study's criteria, which were developed through extensive literature review and sector analysis. The final criteria set is presented in Table 3.

Table 3
Criteria Set for the Export Process

Criteria	Sub-Criteria	Description	Reference
C_1 (Obtaining Exporter Status and Organizational Preparation)	Registration with the tax authority and trade registry (C_{11})	Company registration for legal export activity.	[5; 12]
	Membership in an exporters' association (C_{12})	Required membership for official exports.	[18]
	Acquisition of required licenses and permits (C_{13})	Legal documents needed for specific exports.	[17]
	Establishment of an internal export management structure (C_{14})	Designating export-responsible staff or unit.	[30]
C_2 (Market Research and Establishing Customer Relations)	Analysis of target country and market conditions (C_{21})	Studying foreign market potential.	[21]
	Identification of potential customers and distribution channels (C_{22})	Identifying buyers or intermediaries.	[52]
	Initial communication and proposal submission to the customer (C_{23})	Sending product and price proposals.	[29]
	Negotiation of terms and conclusion of the export agreement (C_{24})	Agreeing on terms and signing the contract.	[29]
C_3 (Product and Documentation Preparation)	Production or procurement of export goods (C_{31})	Producing or procuring goods.	[10]
	Packaging and labelling in compliance with standards (C_{32})	Preparing items per international rules.	[19]
	Preparation of commercial documents (C_{33})	Issuing invoices, packing lists, etc.	[47]
C_4 (Customs Clearance and Logistics Operations)	Submission of customs declaration (C_{41})	Filing export data to customs.	[59]
	Completion of customs clearance procedures (C_{42})	Getting goods approved for export.	[28]
	Organization of transportation and logistics (C_{43})	Planning transport and delivery.	[51]
	Delivery of goods to the freight forwarder or carrier (C_{44})	Delivering goods to the transporter.	[38]
C_5 (Finalization of Export and Closure of Commitments)	Post-delivery document verification (C_{51})	Ensuring goods are reached by the buyer.	[3]
	Closure of foreign exchange commitment procedures (C_{52})	Collecting the export payment.	[16]
	Security Certificates (C_{53})	Reporting to close export commitments.	[70]

3. Proposed Model of WENSLO and WASPAS

The export procedure demonstrated the presence of learned helplessness through the combined application of WENSLO and WASPAS methodologies.

3.1 WENSLO Method

In this study, WENSLO was employed to determine the criteria weights. The method is distinguished from others by its contemporary relevance in the literature and has been successfully applied in several innovative studies [43]. Its computational sensitivity renders the procedure more complex than alternative approaches. Fundamentally, WENSLO comprises seven sequential steps.

Step 1. Creation of Decision Matrix

The evaluation matrix consists of m distinct alternatives and n criteria, each of which may be associated with either a maximization or minimization objective. Alternatives are denoted as A_1 through A_m, while criteria are labeled C_1 to C_n. Here, ζ_{ij} refers to the assessed performance of the i^{th} alternative with respect to the j-th criterion.

$$\left[\zeta_{ij}\right]_{mxn}=\begin{bmatrix} A/C & C_1 & C_2 & \cdots & C_1 \\ A_1 & \zeta_{11} & \zeta_{12} & \cdots & \zeta_{1j} \\ A_1 & \zeta_{21} & \zeta_{22} & \cdots & \zeta_{2j} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ A_1 & \zeta_{i1} & \zeta_{i2} & \cdots & \zeta_{mn} \end{bmatrix}. \quad (1)$$

Step 2. Normalization of Data

Each criterion possesses a unique dimension, transforming the decision matrix into a complex, multidimensional space. To simplify calculations, normalization is applied to the (A, C) matrix to convert it into a dimensionless form using a linear normalization formula.

$$z_{ij} = \frac{\zeta_{ij}}{\sum_{i=1}^{m} \zeta_{ij}} \qquad \forall j \in \{1,2,\dots,n\}. \quad (2)$$

Step 3. Calculation of Criteria Class Interval

The class interval for the j-th criterion, denoted as Δz_j, is determined by applying Sturges' rule, as described in Eq. (3); this calculation establishes the range divisions necessary for the classification of criterion values within the decision matrix.

$$\Delta z_j = \frac{\max z_{ij} - \min z_{ij}}{1+3.322\times\log(m)} \quad \forall j \in \{1,2,\dots,n\}. \quad (3)$$

Step 4. Calculation of the Criteria Envelope

The criteria envelope is calculated by first taking the squares of two consecutive normalized values for a given criterion, summing these squared values along with the term Δz_j, and then finding the square root of this total.

$$E_j = \sum_{i=1}^{m-1} \sqrt{(z_{i+1,j} - z_{i,j})^2 + {\Delta z_j}^2} \quad \forall j \in \{1,2,\dots,n\}. \quad (4)$$

Step 5. Determination of the Criteria Slope

The sum of the normalized values for each criterion is taken, and this total is then divided by the result of one minus the product of the number of alternatives and the value of Δz_j, ensuring that the calculation accounts for both scale and alternative variation.

$$tan\varphi_j = \frac{\sum_{i=1}^{m} z_{ij}}{(m-1)\,\Delta z_j} \qquad \forall j \in \{1,2,\dots,n\}. \quad (5)$$

Step 6. Define the Envelope Slope Ratio

At this stage, a numerical value is defined by calculating the ratio of the total Euclidean distance among alternatives to the slope associated with the corresponding criterion, capturing both spatial dispersion and sensitivity within the decision matrix.

$$q_j = \frac{E_j}{tan\varphi_j} \qquad \forall j \in \{1,2,\dots,n\}. \quad (6)$$

Step 7. Calculation of Criteria Weights

The total envelope-slope ratio is proportionally allocated across the sum of all criterion ratios, enabling each criterion to receive an objective and distinct weight that reflects its relative

importance within the overall decision matrix.

$$w_j = \frac{q_j}{\sum_{j=1}^{n} q_j} \qquad \forall j \in \{1,2,\dots,n\}. \tag{7}$$

3.2 WASPAS Method

WASPAS was initially proposed by Zavadskas et al. [69] and combines the principles of WSM and WPM to enhance the accuracy and reliability of decision-making. By integrating these two assessment models, WASPAS provides more consistent and dependable outcomes in complex decision contexts [44]. The WASPAS procedure consists of six systematic steps [7]:

Step 1. Construction of the Initial Decision Matrix

The process begins with the construction of a decision matrix that captures the performance of each alternative relative to the established hierarchical criteria structure. This matrix is formulated using Eq. (8), where the performance of the i-th alternative with respect to the j-th criterion is denoted by x_{ij}:

$$X = \begin{bmatrix} x_{11} & \cdots & x_{1j} & \cdots & x_{1n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ x_{21} & \cdots & x_{2j} & \cdots & x_{2n} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mj} & \cdots & x_{mn} \end{bmatrix} \quad (i = 1,2,\dots,m;\ j = 1,2,\dots,n) \tag{8}$$

Step 2. Creation of the Normalized Decision Matrix

It is widely acknowledged that some criteria function as benefit criteria while others serve as cost criteria. This distinction is accounted for during the normalization process, with Eq. (9) specifying the formulation for cost criteria and Eq. (10) for benefit criteria:

$$x_{ij}^{*} = \frac{x_{ij}}{\max_i x_{ij}}, \tag{9}$$

$$x_{ij}^{*} = \frac{\min_i x_{ij}}{x_{ij}}. \tag{10}$$

Step 3. Calculation of the Relative Performance of the Alternatives for WSM

The first aggregated relative importance value, denoted as $Q_i^{(1)}$, is calculated using the weighted summation method based on Eq. (11):

$$Q_i^{(1)} = \sum_{j=1}^{n} \overline{x}_{\iota j}\, w_j. \tag{11}$$

Step 4. Computation of the Relative Performance Values of the Alternatives for WPM

Employing the Additive Comparison Method (ACM) and Eq. (12), the second aggregated relative importance value, denoted as $Q_i^{(2)}$, is computed for each alternative:

$$Q_i^{(2)} = \prod_{j=1}^{n} (\overline{x}_{\iota j})^{w_j}. \tag{12}$$

Step 5. Calculation of the Final Relative Performances of Alternatives

The final relative performance of the alternatives is calculated using Eq. (13), where equal weighting is assigned to both ACM (Aggregate Closeness Measure) and ATM (Aggregate Trade-off Measure) within the evaluation process.

$$Q_i = 0.5 Q_i^{(1)} + 0.5 Q_i^{(2)} = 0.5 \sum_{j=1}^{n} \overline{x}_{\iota j}\, w_j + 0.5 \prod_{j=1}^{n} (\overline{x}_{\iota j})^{w_j}. \tag{13}$$

Step 6. Ranking of Alternatives

At this point, the options are ranked in accordance with their final performance scores. Every alternative is assessed according to its optimality value (Q_i) computed by Eq. (14), which is the main factor used to determine where it falls in the overall ranking:

$$Q_i = a Q_i^{(1)} + (1-a) Q_i^{(2)}. \tag{14}$$

4. Case Study Problem and Findings

Information on helplessness learned within the export process, a critical aspect of international trade, was collected through a case study. Drawing on sectoral research and a thorough literature review, the key components of the export process were systematically identified. Essential elements, such as market research, document preparation, logistics, and customs procedures, were highlighted as pivotal factors. By applying a method that accounts for selection margins of error, the study aims to accurately determine the stages of the export process at which business owners have trouble, become stuck, and ultimately abandon their export attempts.

4.1 Description of Case Study

The case study section is structured into specific stages to provide a clearer understanding of the research. These stages are as follows.

4.1.1 Formation of the Decision-Making Group

To ensure an accurate analysis of learned helplessness in the export process, DMs were selected from diverse sectors in Turkey. Selection criteria required that each expert possess extensive professional experience, with all DMs having a minimum of 10 years in their respective fields. The study includes seven expert DMs, as follows:

Academician: He has accumulated over seven years of experience in academia before venturing into international trade by exporting a product in the spare parts sector. Despite initiating the export process three times, all attempts failed. He subsequently collaborated with a professional consultancy firm, which enabled him to complete his first export transaction. He is now actively engaged in export operations.

SME Owner: The company has manufactured and supplied damper glasses domestically for 17 years. In response to declining local demand, it strategically pursued international markets. Its first two export attempts were unsuccessful, but with guidance from a professional consultancy firm, the company successfully launched export operations and gained access to foreign markets.

Young Entrepreneur: A young entrepreneur established a business selling eco-friendly cleaning products for homes and businesses. After domestic success, he attempted international expansion via e-commerce. His first two export attempts failed due to limited knowledge of export regulations and logistical challenges. He later partnered with a trade consulting firm, which facilitated the creation of profitable export channels. He now exports to multiple European markets.

Textile Manufacturer: A mid-sized textile producer with extensive domestic experience aimed at entering export markets after declines in local wholesale contracts. Early export attempts failed due to insufficient market research and pricing errors. After engaging an export consulting firm to support buyer compliance, pricing optimisation, and packaging adaptation, the company has been successfully exporting to North America.

Tech Start-Up: A software start-up specialising in logistics automation attempted global expansion via direct B2B outreach. Initial interest from European clients did not materialise in successful deals due to limited legal knowledge on cross-border contracts and misaligned service expectations. After hiring an international trade advisor experienced in technology exports, the start-up successfully closed its first overseas contract and now serves clients in the Middle East and Europe.

Furniture Manufacturer: A family-run business exporting handcrafted wooden furniture faced delays and returned shipments due to customs classification errors and packaging issues, despite having identified distributors in Central Asia. Engaging a specialised consulting firm resolved compliance challenges, allowing the business to resume regular exports to Uzbekistan and

Kazakhstan.

Cosmetic Brand Founder: A natural skincare entrepreneur, known locally through boutique stores and online channels, attempted exports to Europe. Initial failures occurred due to missing product certifications and non-compliance with EU cosmetic regulations. After updating labelling, obtaining CPNP and GMP certifications, and consulting an international trade and regulatory firm, she successfully entered the European market, exporting to France, the Netherlands, and Germany.

It should be noted that the primary objective of this study is analytical generalisation via expert-based decision modelling, rather than statistical generalisation. In MCDM applications, employing a small panel of highly experienced DMs is methodologically appropriate when complex operational and experiential knowledge is required. All DMs in this study possess over ten years of export experience and have encountered multiple failures prior to achieving success. Using an expert panel emphasises depth of insight, contextual understanding, and reliability of judgments rather than numerical representativeness.

4.1.2 Alternative Policy Proposals

For business owners and entrepreneurs encountering challenges in the export process, the study proposes alternative policy recommendations aimed at preventing learned helplessness and facilitating successful export completion. These recommendations comprise four proposed activities.

Alternative Policy Proposal 1: Digital pre-registration and permit processes for exporters should be combined into a one-stop system.

Companies seeking to initiate exports incur significant time and financial costs during the initial phase, which includes registration, document preparation, and permit applications. Multiple submissions to different institutions, document tracking, and bureaucratic delays reduce export incentives. Implementing one-stop digital platforms that integrate tax registration, exporter union membership, licenses, and certification applications can address this issue. Such a system minimises time loss by allowing the entire process to be completed online through a centralised platform and facilitates easier access for SMEs.

Alternative Policy Proposal 2: Free target market analysis support and customer finding platforms should be provided for new exporters.

Conversely, understanding what products to sell, in which markets, and how to identify potential buyers represents a major challenge for companies beginning to export. Firms without access to professional guidance on market research, customer analysis, and regulatory requirements may abandon export efforts to avoid risk. To address this, target market analysis centres or export intelligence platforms—established through government support or private sector partnerships—should provide businesses with free reports, market matches, and potential customer databases. This support enables firms to overcome the abandonment behaviour caused by insufficient information.

Alternative Policy Proposal 3: Sector-based guidance and e-training systems should be developed for document preparation and customs procedures.

Due to uncertainty regarding when and how to prepare the necessary documents, first-time exporters often make errors that result in goods being delayed or returned at customs. To address this, sector-specific digital guides, sample documents, and e-learning modules with step-by-step instructional videos should be developed. For example, tailored manuals covering customs procedures and document preparation should be made available for the food, automotive, and textile industries. Implementing this approach allows export companies to avoid operational mistakes and acquire prior knowledge of the technical requirements they may encounter during the

export process.

Alternative Policy Proposal 4: Post-export foreign exchange commitment closing procedures should be simplified and made traceable through automatic systems.

The process of settling foreign exchange obligations with the Central Bank after completing exports is often complex and time-consuming, especially for small businesses. System incompatibilities, manual approval requirements, and document flows between banks extend processing times and may occasionally lead to administrative penalties. Implementing a digital closing module integrated with banking and customs systems would allow exporters to automatically track and finalise transactions, addressing these challenges. This solution helps businesses avoid errors and fulfil their obligations more efficiently and transparently.

4.2 Obtaining the Weights of Criteria by the WENSLO Method

To identify the stages of the export process where learned helplessness occurs, an assessment tool was developed for the DMs. The factors listed in Table 3 formed the basis of the evaluation form. DMs used the linguistic evaluation scale presented in Table 4 to rank the significance of the obstacles encountered during the export process. According to the linguistic scale (Saaty, 1980), DMs assigned 1 point to the criterion they considered most significant and 9 points to the criterion they deemed least important. For example, criteria identified as major barriers in the export process were given 1 point, whereas aspects of the export procedure that posed minimal or no challenges were assigned 9 points.

Table 2
Linguistic Variables and their Corresponding Crisp Value

Linguistic Terms	**Crisp Value**
Absolutely More Important (AMI)	9
Much More Important (MMI)	8
More Important (MI)	7
Slightly More Important (SMI)	6
Equally Important (EI)	5
Slightly Less Important (SLI)	4
Less Important (LI)	3
Much Less Important (MLI)	2
Absolutely Less Important (ALI)	1

Among the four proposed policy options, the most appropriate export preparedness component was identified using the methodological framework applied in this study. Table 3 presents a comprehensive set of selection criteria, comprising five primary criteria and eighteen sub-criteria. Subsequently, expert DMs conducted linguistic evaluations based on the primary criteria listed in Table 5.

Table 3
Linguistic Ratings of Main Criteria

DMs	C_1	C_2	C_3	C_4	C_5
Exp1	MI	MLI	EI	MLI	MMI
Exp2	MMI	LI	SMI	LI	AMI
Exp3	MI	SLI	EI	SLI	MI
Exp4	MMI	LI	SMI	LI	MMI
Exp5	AMI	MLI	EI	MLI	MI
Exp6	MI	MLI	SLI	SLI	MMI
Exp7	MMI	MLI	EI	MLI	MMI

A detailed account of each WENSLO processing step, aligned with the primary criteria, is provided, while the DMs' linguistic assessments of these criteria are presented in Table 5. First, the linguistic assessments are converted into numerical values, as shown in Table 5. These values are then used to generate the normalized decision matrix by applying Eq. (2). The resulting normalized decision matrix is presented in Table 6.

Table 4
Normalized Decision Matrix

DMs	C_1	C_2	C_3	C_4	C_5
Exp1	0.130	0.111	0.139	0.100	0.145
Exp2	0.148	0.167	0.167	0.150	0.164
Exp3	0.130	0.222	0.139	0.200	0.127
Exp4	0.148	0.167	0.167	0.150	0.145
Exp5	0.167	0.111	0.139	0.100	0.127
Exp6	0.130	0.111	0.111	0.200	0.145
Exp7	0.148	0.111	0.139	0.100	0.145

To assess the degree of separation between criteria, representing the relative advantage or difference of one criterion over another, the delta value is calculated. Eq. (3) is used to compute the delta values for each criterion, which are presented in Table 7.

Table 5
Delta Values of the Main Criteria

	C_1	C_2	C_3	C_4	C_5
Δz_j	0.010	0.029	0.015	0.026	0.010

Eq. (5) is subsequently applied to determine the tangent values for each criterion. The tangent slope values for the primary criteria are presented in Table 8.

Table 6
Tangent Slope Value of the Main Criteria

	C_1	C_2	C_3	C_4	C_5
$tan\varphi_j$	17.1334	5.7111	11.4222	6.3457	17.4507

Eq. (4) is used to calculate the envelope values. The total of these envelope values is then presented in Table 9.

Table 7
Envelope Values of the Main Criteria

	C_1	C_2	C_3	C_4	C_5
	0.0209	0.0628	0.0314	0.0565	0.0205
	0.0209	0.0628	0.0314	0.0565	0.0376
	0.0209	0.0628	0.0314	0.0565	0.0205
	0.0209	0.0628	0.0314	0.0565	0.0205
	0.0383	0.0292	0.0314	0.1034	0.0205
	0.0209	0.0292	0.0314	0.1034	0.0096
Total	**0.1429**	**0.3094**	**0.1883**	**0.4327**	**0.1293**

The envelope slope ratio q_j is calculated using Eq. (6). Table 10 displays the envelope slope ratio values.

Table 8
Envelope Slope Ratio of the Main Criteria

	C_1	C_2	C_3	C_4	C_5
q_j	0.0083	0.0542	0.0165	0.0682	0.0074

Eq. (7) is then applied to calculate the final weights of the primary criteria. The resulting criterion weights, as determined through these computations, are presented in Table 11.

Table 9
Final Weight of the Main Criteria

	C_1	C_2	C_3	C_4	C_5
w_j	0.0539	0.3504	0.1066	0.4411	0.0479

The results indicate that C_4: "Customs Clearance and Logistics Operations" is the most critical criterion contributing to learned helplessness in the export process. The weights for each criterion were calculated independently at the sub-criterion level using Eqs. (1)–(7), with the outcomes presented in Table 12.

Table 10
Weights of All Criteria

Main Criteria		Sub-Criteria	Weights	Global Weight	Rank
C_1 (Obtaining Exporter Status and Organizational Preparation)	0.054	Registration with the tax authority and trade registry (C_{11})	0.085	0.0046	18
		Membership in an exporters' association (C_{12})	0.530	0.0286	11
		Acquisition of required licenses and permits (C_{13})	0.169	0.0092	16
		Establishment of an internal export management structure (C_{14})	0.213	0.0115	15
C_2 (Market Research and Establishing Customer Relations)	0.350	Analysis of target country and market conditions (C_{21})	0.328	0.1153	4
		Identification of potential customers and distribution channels (C_{22})	**0.350**	**0.1226**	**3**
		Initial communication and proposal submission to the customer (C_{23})	0.111	0.0392	9
		Negotiation of terms and conclusion of the export agreement (C_{24})	0.209	0.0733	6
C_3 (Product and Documentation Preparation)	0.107	Production or procurement of export goods (C_{31})	0.081	0.0087	17
		Packaging and labelling in compliance with standards (C_{32})	0.288	0.0308	10
		Preparation of commercial documents (C_{33})	0.629	0.0671	7
C_4 (Customs Clearance and Logistics Operations)	0.441	Submission of customs declaration (C_{41})	0.257	0.1134	5
		Completion of customs clearance procedures (C_{42})	**0.290**	**0.1280**	**2**
		Organization of transportation and logistics (C_{43})	**0.345**	**0.1525**	**1**
		Delivery of goods to the freight forwarder or carrier (C_{44})	0.107	0.0472	8
C_5 (Finalization of Export and Closure of Commitments)	0.048	Post-delivery document verification (C_{51})	0.331	0.0159	13
		Closure of foreign exchange commitment procedures (C_{52})	0.319	0.0153	14
		Security Certificates (C_{53})	0.348	0.0167	12

Analysis of the global weights and ranks derived from the decision matrix reveals that "Organization of transportation and logistics" (C_{43}) is the most significant sub-criterion, with the highest global weight of 0.1525, ranking first among all eighteen sub-criteria. This underscores the strategic importance of effective logistics planning and coordination in achieving timely and successful international deliveries. The finding aligns with operational realities, as the efficiency of logistics directly affects overall export performance. Other notable sub-criteria include "Completion

of customs clearance procedures" (C_{42}) and "Identification of potential customers and distribution channels" (C_{22}), with global weights of 0.1280 and 0.1226, ranked second and third, respectively. These results highlight that export success relies not only on internal process readiness but also on procedural efficiency at customs and comprehensive market knowledge. Collectively, these criteria represent the primary obstacles causing business owners and entrepreneurs to abandon their export efforts.

4.3 Ranking of Alternative Policy Proposals: WASPAS Method

Using a predefined linguistic scale, the DMs' judgments formed the basis for applying the WASPAS approach. The scale included the following categories: More Important (AMI), Much More Important (MMI), More Important (MI), Slightly More Important (SMI), Equally Important (EI), Slightly Less Important (SLI), Less Important (LI), Much Less Important (MLI), and Absolutely Less Important (ALI). Eq. (8) was then used to convert the verbal evaluations in Table 13 into corresponding numerical values.

Table 11
Linguistic Assessments of the WASPAS Alternative Policy Proposal Selection

	C_{11}	C_{12}	C_{13}	C_{14}	C_{21}	C_{22}	C_{23}	C_{24}	C_{31}
PP_1	EI	EI	EI	EI	MI	EI	EI	SMI	EI
PP_2	AMI	MI	MMI	MMI	MMI	MI	MI	AMI	AMI
PP_3	MI	MMI	AMI	MMI	AMI	MMI	AMI	AMI	MI
PP_4	EI	SMI	EI	EI	SMI	EI	SMI	SMI	EI
	C_{32}	C_{33}	C_{41}	C_{42}	C_{43}	C_{44}	C_{51}	C_{52}	C_{53}
PP_1	SMI	EI	SMI	EI	SMI	EI	EI	EI	EI
PP_2	SMI	MI	MI	MMI	MMI	MI	MMI	MMI	AMI
PP_3	MMI	MMI	MMI	MI	MMI	AMI	AMI	AMI	MMI
PP_4	SMI	EI	SMI	EI	SMI	SMI	EI	MI	EI

The normalized decision matrix in Table 14 is produced by applying Eq. (9) to convert the DMs' assessments into normalized values.

Table 12
Normalized Decision Matrix for Policy Proposal

	C_{11}	C_{12}	C_{13}	C_{14}	C_{21}	C_{22}	C_{23}	C_{24}	C_{31}
PP_1	0.556	0.625	0.556	0.625	0.778	0.625	0.556	0.667	0.750
PP_2	1.000	0.875	0.889	1.000	0.889	0.875	0.778	1.000	0.750
PP_3	0.778	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PP_4	0.556	0.750	0.556	0.625	0.667	0.625	0.667	0.667	0.750
	C_{32}	C_{33}	C_{41}	C_{42}	C_{43}	C_{44}	C_{51}	C_{52}	C_{53}
PP_1	0.625	0.750	0.625	0.750	0.556	0.556	0.556	0.556	0.556
PP_2	0.875	0.875	1.000	1.000	0.778	0.889	0.889	1.000	0.889
PP_3	1.000	1.000	0.875	1.000	1.000	1.000	1.000	0.889	1.000
PP_4	0.625	0.750	0.625	0.750	0.667	0.556	0.778	0.556	0.556

The relative performances of the alternative policy proposals are calculated using Eq. (11). These performance values are presented in Table 15.

Table 13
Calculation of the Relative Performance of the Alternative Policy

	PP_1	PP_2	PP_3	PP_4
$Q_i^{(1)}$	0.628	0.902	0.982	0.669

The relative performance of the alternatives using the WSM approach was determined by applying Eq. (12). The resulting values are presented in Table 16.

Table 14
Performance of the Alternative Policy Proposals for WSM

	PP_1	PP_2	PP_3	PP_4
$Q_i^{(2)}$	0.647	0.898	0.981	0.666

The numerical weights and rankings of the alternative policy proposals were determined using Eqs. (13) and (14). The calculated values are presented in Table 17.

Table 15
Alternative Policy Proposals' Value and Ranking

Q_i	Value	Rank
PP_1	0.637	4
PP_2	0.899	2
PP_3	0.981	1
PP_4	0.667	3

Aligned with the study's aim of identifying the most effective policy interventions to reduce failure points in the export process, the Q_i ranking results offer important insights. The highest-scoring policy proposal, PP_3 (Q_i = 0.981, Rank 1), focuses on developing sector-specific guidelines and e-learning platforms for documentation and customs procedures. This outcome highlights that procedural complexity and limited sectoral knowledge are among the main obstacles causing entrepreneurs to abandon exporting. Addressing these challenges through specialised educational materials is therefore the most effective way to enhance exporter readiness and reduce operational errors. The second-highest priority, PP_2 (Q_i = 0.899, Rank 2), involves providing new exporters with free market analysis support and tools for customer identification. This aligns with early-stage decision-making challenges, where uncertainty in market selection and buyer acquisition significantly influences export hesitation. Strengthening the informational infrastructure at this stage is thus highly beneficial. Also ranked relatively high is PP_4 (Q_i = 0.667, Rank 3), which proposes automating and streamlining the closure of foreign exchange commitments. Although this addresses a post-export phase, it reduces administrative burden and ensures compliance, supporting long-term export continuity. Finally, PP_1 (Q_i = 0.637, Rank 4), which advocates integrating licensing and pre-registration procedures into a single-window digital system, received the lowest score. This lower ranking suggests that while structural registration procedures are necessary for granting exporter status, they are considered less critical compared to operational complexities and market-related challenges.

5. Validation

Identifying learned helplessness in the export process is crucial for improving overall outcomes. Accordingly, sensitivity analysis is conducted to determine which alternative policy proposals

remain optimal under varying conditions. The analysis generates alternative scenarios based on 180 different conditions. These scenarios were constructed by applying Eqs. (15)–(17):

$$w_{fv}^{1} = w_{pv}^{1} - \left(w_{pv}^{1} \times m_{v}\right). \quad (15)$$

The adjusted weight of the j^{th} component is represented by the w_{fv}^{1} value, which is determined by Eq. (16):

$$w_{nv}^{2} = \frac{\left(1-w_{fv}^{1}\right)}{n-1} + w_{pv}^{2}. \quad (16)$$

In Eq. (17), n is the number of criteria, w_{nv}^{2} is the new value of the remaining criteria, and w_{pv}^{2} is the prior value of the remaining criteria:

$$w_{fv}^{1} + \sum w_{nv}^{2} = 1. \quad (17)$$

5.1 Sensitivity Assessment Based on Variations in Criteria Weights

A comprehensive sensitivity analysis of the policy recommendations for addressing learned helplessness in the export process was conducted in this study. By systematically varying the weights of each primary criterion, 180 distinct scenarios were generated. In each scenario, the weight of one criterion was increased by 10%, while the weights of the remaining criteria were proportionally reduced to maintain a constant total. This approach enabled observation of how changes in the relative importance of criteria affect the final ranking of the alternative policy proposals. The results of the sensitivity analysis revealed that, across all 180 scenarios, Alternative 3 consistently ranked highest. This outcome underscores the critical importance of providing industry-specific guidelines and online training programmes for documentation and customs procedures to mitigate learned helplessness in exporting. In every scenario, Alternative 2 maintained the second rank, indicating that offering new exporters free support with target market analysis and client identification platforms is of secondary importance. These findings suggest that government and local authority initiatives focused on export training and information provision can substantially enhance the effectiveness of these two policy measures. The sensitivity analysis results are illustrated in Figure 2.

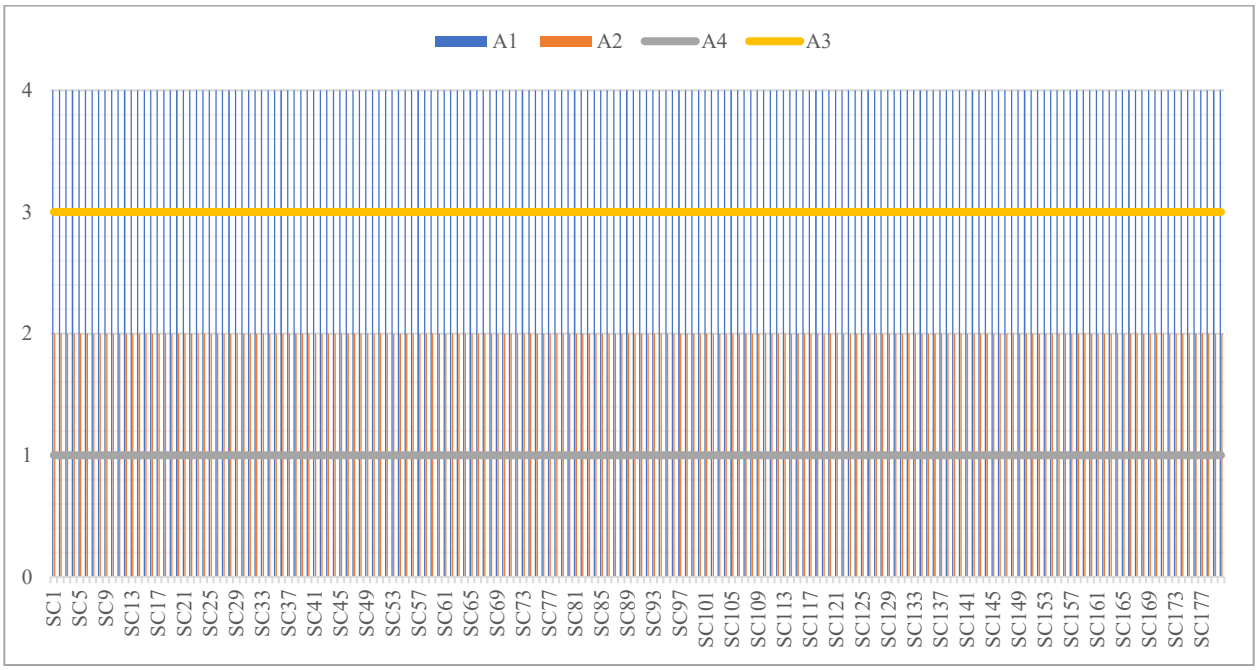

Fig.2: Sensitivity Analysis of the Criteria Weights

5.2 Comparative and Spearman's Correlation Analysis

To validate the study's findings and ensure the robustness of the conclusions, the application section incorporates additional comparative methods. Specifically, COPRAS, TOPSIS, and VIKOR were applied to reanalyse the data and assess the consistency of the results. The outcomes of this comparative analysis are presented in Table 18 and illustrated in Figure 3.

Table 16
Results of the Comparative Analysis

Alternatives	**Methods**			
	WASPAS	COPRAS	TOPSIS	VIKOR
PP_1	4	3	4	4
PP_2	2	2	2	2
PP_3	1	1	1	1
PP_4	3	4	3	3

The comparative assessment of the alternatives using COPRAS, TOPSIS, and VIKOR indicates a largely consistent prioritization pattern, with minor variations in rank positions. Specifically, PP_3 is consistently identified as the least favourable option across all methods, while PP_2 maintains a stable mid-level ranking, reflecting a methodological consensus regarding its moderate performance. In contrast, PP_1 and PP_4 exhibit slight positional shifts: COPRAS ranks PP_4 as the highest alternative, whereas TOPSIS and VIKOR place PP_1 ahead. This variation suggests that, although the overall ranking framework is broadly consistent, the relative standing of PP_1 and PP_4 depends on the specific method applied, highlighting the sensitivity of these approaches to their computational mechanisms. Overall, the results demonstrate both the robustness and the subtle variability of MCDM techniques in evaluating alternative policy performances.

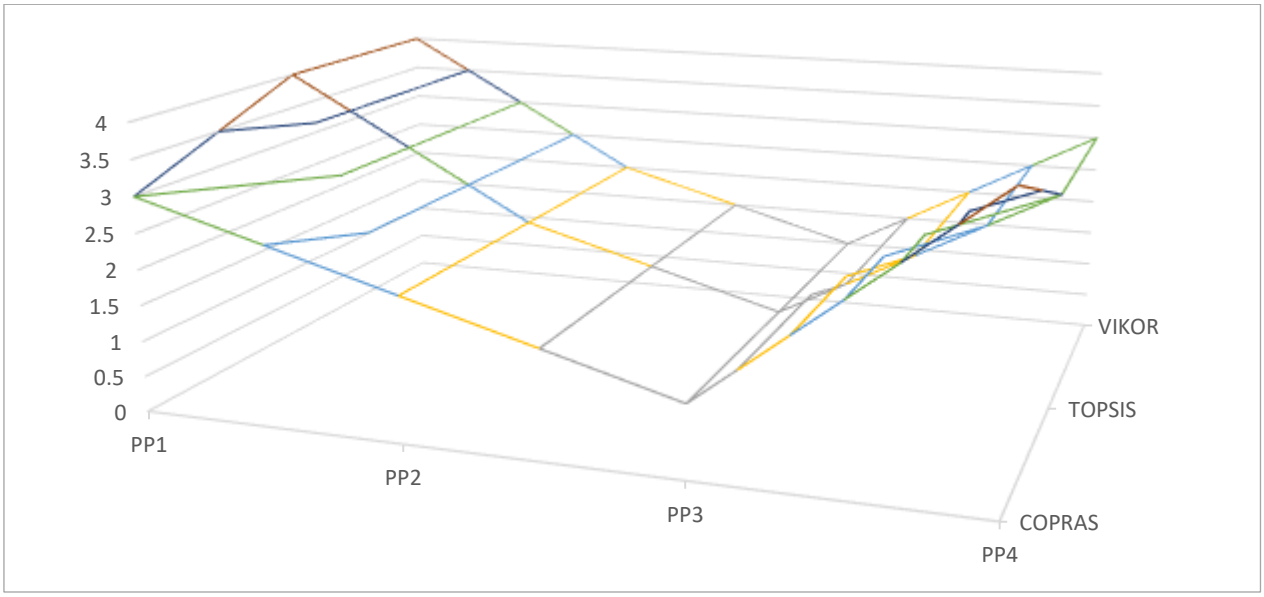

Fig.3: Comparative Analysis

The Spearman's correlation analysis in Table 19 demonstrates a strong alignment among the applied MCDM methods. WASPAS exhibits a perfect positive correlation (ρ = 1.000) with both TOPSIS and VIKOR, indicating that these three techniques produce identical or nearly identical ranking results under the study conditions. This high concordance confirms the stability and robustness of the decision-making outcomes across different methodological frameworks. In

contrast, the correlation between WASPAS and COPRAS is moderate (ρ = 0.600), reflecting some differences in how COPRAS prioritizes the alternatives. This variation highlights the methodological sensitivities inherent in MCDM approaches, while the overall agreement between WASPAS, TOPSIS, and VIKOR reinforces confidence in the reliability of the evaluation results.

Table 17
Spearman's Correlation Coefficient Values

	COPRAS	**TOPSIS**	**VIKOR**
WASPAS	0.600	1.000	1.000

6. Discussion and Managerial Implications

This study offers both methodological and managerial contributions by integrating WENSLO for criteria weighting and WASPAS for ranking, providing a nuanced understanding of export readiness that extends beyond conventional technical assessments. The inclusion of sensitivity analysis further strengthens the robustness and validity of the findings. The results are particularly relevant for emerging economies, where limited institutional support, insufficient experience, and psychological barriers among first-time exporters frequently hinder successful export operations.

The findings emphasise the critical importance of customs brokerage and logistics operations (C_4). Within this category, the organization of transportation and logistics (C_{43}) and the completion of customs clearance procedures (C_{42}) hold the highest global weights. These outcomes corroborate prior research by Ahmadi et al. [1], which highlights that operational fluidity post-shipment, rather than initial administrative preparation, is the primary constraint on successful international deliveries. Similarly, the World Trade Organization's Trade Facilitation Agreement (TFA) indicates that enhanced logistics infrastructure and reduced customs clearance times are strongly associated with increased trade volumes, particularly in developing countries [15]. Conversely, criteria associated with Exporter Status and Organizational Preparation (C_1)—including tax authority registration (C_{11}), obtaining licenses and permits (C_{13}), and establishing internal export management structures (C_{14})—showed minimal global weights and low rankings. Despite being the initial focus for many new exporters, these activities contribute little to operational success, often leading to overinvestment in bureaucracy, limited progress, and a state of learned helplessness.

Market research and customer relationship management (C_2), particularly identifying potential customers and distribution channels (C_{22}) and analysing target country and market conditions (C_{21}), ranked third and fourth overall, indicating their high impact on export success. These findings align with global export success models [6; 33], which highlight the necessity of targeted buyer engagement and market intelligence. However, first-time exporters often lack access to structured intelligence platforms and rely on intermediaries or passive trade fairs, resulting in suboptimal commercial relationships. Technical and procedural competencies, including preparation of commercial documents (C_{33}) and submission of customs declarations (C_{41}), ranked fifth and seventh, underscoring the importance of these capabilities in ensuring transaction completion and regulatory compliance. The increasing digitization of trade, incorporation of blockchain in customs processes, and evolving data security standards heighten the consequences of technical errors, which can lead to shipment delays, fines, or reputational damage, further reinforcing learned helplessness among exporters. In contrast, post-export activities, such as finalization of exports and closure of foreign exchange commitments (C_5), although lower in weight, highlight a common blind spot in policy and export promotion: post-delivery risk management is frequently under-supported, despite its critical role in sustaining long-term trade engagement.

The results can be interpreted through the lens of learned helplessness theory. Repeated

operational failures at key stages, particularly in logistics and customs coordination, erode exporters' perceived behavioural control. Accumulated setbacks foster the belief that additional effort will not improve outcomes, reduce motivation and leading to withdrawal from exporting. The predominance of logistics- and customs-related criteria in the WENSLO analysis empirically supports this mechanism, demonstrating that export failure is not solely operational but also a psychological consequence of repeated procedural barriers. The WASPAS rankings further validate these structural insights. The top-performing policy alternative (PP_3, Q_i=0.981) prioritises buyer engagement, customs fluency, and logistics orchestration, closely reflecting the highest-weighted WENSLO criteria. Conversely, the lowest-ranked alternative (PP_1), focusing predominantly on registration and compliance, indicates that overemphasis on administrative preparedness without concurrent market activation yields suboptimal outcomes.

From a policy perspective, these findings imply that governments risk promoting ineffective practices if export promotion is limited to administrative registration and association memberships. Public-private collaboration should prioritise strengthening trade logistics, digital documentation, customs procedure capacity, and industry-specific market intelligence. Policies must incorporate mechanisms for early success experiences, streamlined initial transactions, and mentoring to enhance exporters' confidence and mitigate psychological barriers. Early-stage simulations and mentoring programs offered through local export offices can create low-risk learning environments, fostering a more resilient and globally integrated business ecosystem, improving export performance, and reducing the learned helplessness that often inhibits first-time exporters.

6.1 Theoretical Implication

From a theoretical standpoint, this study illustrates that the integration of WENSLO and WASPAS provides a refined mechanism for capturing expert judgments, particularly in high-uncertainty contexts such as export planning. The structured prioritization of sub-criteria produces stable and interpretable outcomes even within complex decision spaces, thereby advancing current MCDM methodologies. By relying on measurable and reproducible computations, this approach mitigates subjective biases in evaluating trade processes. Moreover, the findings highlight the necessity for export decision-making frameworks to account for practical operational realities, rather than focusing solely on formal regulatory procedures.

6.2 Practical Contributions for Exporting Firms

In practical terms, the model offers businesses, particularly SMEs and first-time exporters, a clear roadmap for strategic prioritization. A key implication is that many business owners initially overemphasize low-impact tasks, such as official registration or obtaining licenses, because these are visible and easily executed. However, as early efforts in these areas seldom translate into tangible trade outcomes, this focus can reinforce learned helplessness. By redirecting attention toward logistics preparedness, customs proficiency, and proactive market engagement, businesses can achieve early successes, enhancing motivation, long-term export capability, and confidence.

6.3 Policy and Governance Implications

Moreover, this study provides guidance for national export promotion agencies and local governments. The misalignment between exporters' perceived priorities and the actual determinants of export success underscores the need to reorient public support programs. Rather than focusing primarily on regulatory formalities and compliance, government bodies should prioritise:

- Documentation and logistics training programmes,

- Industry-specific market intelligence platforms,
- Export simulations and mentoring schemes to help first-time exporters overcome psychological barriers.

Furthermore, by establishing practical export clinics and facilitating guided access to customers, shipping channels, and customs procedures, chambers of commerce and municipalities can act as local facilitators. Such regional initiatives can reduce early-stage export dropout rates and effectively strengthen the broader national export strategy.

7. Conclusion

In this study, a novel integrated group decision-making model was developed to assess and prioritise the key elements of the export process. The findings from the WENSLO-WASPAS framework revealed that market engagement, customs procedures, and logistics coordination—areas often underestimated by new exporters—are critical determinants of success in international trade. The model provides a corrective mechanism that helps firms avoid early-stage inefficiencies and psychological withdrawal by highlighting this misalignment. For practitioners and policymakers, it offers a strategic tool to design more flexible and export-ready business ecosystems. Based on these results, the study provides practical and policy recommendations. For exporting firms, particularly SMEs and first-time exporters, the findings emphasise the need to redirect strategic focus from low-impact administrative formalities toward operational readiness, encompassing logistics coordination, customs procedures, and proactive market participation, which are crucial for early export success. From a policy standpoint, the evidence suggests that export promotion initiatives should extend beyond registration incentives to prioritise sector-specific training, digital customs facilitation, logistics capacity building, and access to market intelligence platforms. Aligning managerial focus and public support with the actual determinants of export performance identified in this study can reduce early exporter dropout rates and foster more resilient and sustainable engagement in international markets.

8. Limitations

This study has certain limitations, despite providing valuable insights into the psychological and operational factors contributing to export difficulties. Firstly, the potential for statistical generalization is limited because the analysis relies on an expert-based MCDM framework rather than large-scale survey data. This design choice was intentional, as the focus is on capturing decision-making logic and experiential knowledge rather than population-level behaviours. To improve contextual generalizability, future research could extend the WENSLO-WASPAS framework by incorporating cross-national expert panels or applying it across multiple industry sectors for comparative analysis. Moreover, hybrid methodologies that integrate expert-based MCDM with large-scale surveys or secondary trade statistics could further enhance and validate the robustness of the findings.

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Data Availability Statement

Data will be provided upon a request from the corresponding author.

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Appendix

Notations		Acronyms	
A	Set and index of alternatives; $i = 1, 2, \dots, m$	ACM	Aggregate Closeness Measure
C	Set and index of criteria; $j = 1, 2, \dots, n$	AHP	Analytic Hierarchy Process
x_{ij}	Performance of the i^{th} alternative with respect to the j^{th} criterion	ALI	Absolutely Less Important
E_j	Envelope value of the j^{th} criterion	AMI	Absolutely More Important
S_j	Slope value of the j^{th} criterion	ANP	Analytic Network Process
Δ_j	Class interval of the j^{th} criterion	ATM	Aggregate Trade-off Measure
R_j	Envelope slope ratio of the j^{th} criterion	CRITIC	Criteria Importance Through Intercriteria Correlation
w_j	Weight of the j^{th} criterion	DM	Decision-Maker
$Q_i^{(1)}$	Relative performance of the i^{th} alternative	EI	Equally Important
$Q_i^{(2)}$	Second aggregated relative importance value of the i^{th} alternative	LI	Less Important
Q_i	Optimality value of the i^{th} alternative	MCDM	Multi-Criteria Decision-Making
ζ_{ij}	Raw (initial) performance value of the i^{th} alternative with respect to the j^{th} criterion	MI	More Important
z_{ij}	Normalized value of the i^{th} alternative under the j^{th} criterion	MLI	Much Less Important
Δz_j	Class interval of the normalized values for the j^{th} criterion (based on Sturges' rule)	MMI	Much More Important
φ_j	Slope angle associated with the j^{th} criterion	SLI	Slightly Less Important
q_j	Envelope-slope ratio of the j^{th} criterion	SME	Small and Medium-sized Enterprise
a	Aggregation coefficient balancing WSM and WPM ($0 \le a \le 1$)	SMI	Slightly More Important
wpv_1	Prior weight value of the perturbed criterion	TOPSIS	Technique for Order Preference by Similarity to Ideal Solution
wfv_1	Final adjusted weight of the perturbed criterion	VIKOR	VlseKriterijumska Optimizacija I Kompromisno Resenje
wpv_2	Prior weight value of the remaining criteria	WASPAS	Weighted Aggregated Sum Product Assessment
wnv_2	New adjusted weight of the remaining criteria	WENSLO	Weights by Envelope and Slope
mv	Magnitude of weight variation applied in sensitivity analysis	WPM	Weighted Product Model
PP_i	i^{th} policy proposal (alternative)	WSM	Weighted Sum Model