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Identification and Analysis of Prominent Indicators in the Evaluation of Export Strategies in the Cement Industry

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ABSTRACT

As part of its export strategy, the country aims to reduce raw material exports and develop non-oil goods exports. As one of the major producers of non-oil products, the cement industry has tremendous export potential. This article identifies the appropriate indicators for evaluating export strategies in cement industries and evaluates and determines their importance based on these indicators. For the purpose of assessing export strategies in the cement industry, the importance coefficients of indicators were calculated based on the opinions of cement industry experts. The data was then analyzed using the Shannon technique. Studies and analyses of the data obtained in this research suggest that Government and customs laws and export laws are the best and most crucial criteria, and cost savings are the most effective indicators.

1. Introduction

In decision-making, priority is important because decision-makers seek to identify the impact level of each variable on the system they are managing. Similarly, given the available resources,

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he makes decisions that, with the lowest cost, achieve the greatest level of desired change [1,2]. Today's world is knowledge-based, and intellectual capital is considered one of the most important assets of any organization [3].

Exporting can be done in several ways. Indicators evaluate these strategies. It is possible to evaluate different strategies based on indicators and choose the one that best suits the company's needs. It can be identified which is the most beneficial if it is implemented.

2. Literature review

Global trade is becoming increasingly important: Small and medium enterprises with advanced technologies are increasingly exposed to global export and trade opportunities. Understanding performance is essential [4]. The use of advanced technology from the inception and operation of small and medium-sized enterprises to gain a significant competitive advantage in the use of resources and the use of international export and sales capabilities Reni (1993). He first identified and introduced this new form of company that responds to environmental change through rapid internationalization. Due to difficulties in accessing information about developing companies due to access to information about large and small companies, new international investments in developing countries are studied and analyzed. Global and multinational companies are the subjects of many studies and their analysis [5]. According to Sierra & Ghana et al. (2020), international investment companies are at risk of resource constraints.

International marketing and international trade study export performance as one of their key areas of study. The increasing desire for economic globalization, increased market liberalization, and economic and monetary union have made the export performance one of the most prestigious and extensive international marketing areas. Economic growth relies heavily on export performance for many countries. Researchers, general managers, and policymakers should focus on this management field. According to researchers, performance is a multi-dimensional phenomenon encompassing three dimensions: effectiveness, efficiency, and compatibility.

Compared to its competitors, a company's effectiveness measures its success. A company's policy determines its productivity. Compatibility is determined by how the company responds to environmental changes compared to other sources in its implementation [6]. According to researchers, exports play an important role in determining the organization's ability to use its resources and capabilities internationally. Exports can significantly bring a product to the foreign market by planning and implementing a functional export marketing strategy. A variety of

criteria are used to measure export performance. Financial performance and strategic effectiveness can be used to measure export performance. These export decisions, the number of markets, the number of products sold, and the value of exports can all contribute to export performance. A number of studies have divided these criteria into two groups; economic/financial (such as profit and sales profit) and non-financial / non-financial [7]. To evaluate export performance, both internal and external variables are considered: Internal variables are hourly and include the following;

- A manager's personality, level of education, attitude, international experience, commitment to corruption initiatives, global expertise, support, and other characteristics;
- An organization's characteristics are according to its resources, capacities, capabilities, and goals, including the international identification of elections and market divisions.
- Construction company characteristics, size, capabilities, and resources.
- Combining pricing, advertising, and description strategies
- Currently, the market direction is being reviewed.

There are external variables that relate to environmental factors, i.e., those that cannot be controlled by the company, as well as the internal environment and domestic and international markets, and these include Legal regulations, cultural similarities and differences, local trade conventions, access to channels, and competition in foreign markets. There are external environmental characteristics, such as cultural similarities and differences, as well as political and legal aspects. Domestic market characteristics include export subsidies and environmental aspects. Politicians and corporate policymakers place a high value on achieving a successful export as a strategic decision-making goal. Essentially, simple performance success indicates that a company's goals, both economic and non-economic, are achieved in an international context. Since exporting is a strategic choice for the company, the company's chosen export strategy should be tailored to the company's environment, considering that it is a strategic choice. The company's goals will vary depending on its industry, national context, and organizational horizons [8].

The ratings and weights of the criteria are known precisely in classical Multi-Criteria Decision Making (MCDM). A decision-maker or expert's knowledge and delegation are not so precise in the real world, which is an imprecise and uncertain environment. A Decision Maker (DM) cannot assess his preferences with exact numerical values, for instance, because human judgment includes often vague preferences. It is difficult or impossible to determine the exact value of the attributes in these situations. In a decision difficulty, imprecise and uncertain elements are often

described and treated using fuzzy and stochastic approaches. A number of works on fuzzy decision-making have been published in the literature [9,10]. The membership functions of fuzzy parameters are known, and the probability distributions of fuzzy parameters are assumed to be known in stochastic decision-making [11,12]. In reality, to a DM, defining the membership function or possibility distribution is not always easy. At least in some cases, it is possible to use interval numbers instead of whole numbers. Intervals can be viewed as extensions of actual numbers and subsets of the real line R [13,14].

When the firm's high-level marketing capabilities are interconnected to identify channel members' critical needs, operational plans, and competitors and to meet market demand, it is hypothesized that its DMC can reflect complementary strengths since little is known about the main dimensions of the higher level structure of DMC. The purpose of this article is to provide a comprehensive overview of DMC's main dimensions.

3. Research methodology

A descriptive-survey type of research is used in the current study. Researchers conduct descriptive research to interpret variables and their relationships. Collecting information from a large group of people directly through the survey method is also possible.

Steps for implementing research

Examining sources and research background, collecting and compiling sources of research theory

- Analysis, indicators, and strategies
- Designing a decision matrix
- Conduct research and collect data
- Data analysis (Shanon)
- Summary of results and discussion

Information was collected using the library method in this study. The available documents, such as books, articles, and databases will be compiled and extracted using notes and desired points. The questionnaire will be used as a data collection tool once the research has reached the field stage. The researcher collects data through the design of the decision matrix. Twenty experts

from West Kermanshah Cement Company participated in the current research. Sampling was conducted using a selective and non-probability method in this study. The data was analyzed using the Shanon technique.

4. Analysis results

4.1. SHANON process

Step 1. Effective indicators on the selection of export strategies The index was used to evaluate and review export strategies, which include the following:

Table 1

Effective indicators on the selection of strategies.

Row	Indicators
1	Certainty (risk reduction)
2	Export goals of the company
3	Economic conditions of the destination country
4	Political factors of the destination country
5	Competition status
6	Increase sales and profitability
7	State and customs laws of the country (export laws)
8	Government and customs laws of the destination country
9	Cost savings

4.2. The importance coefficient of the rating criteria

The following questionnaire was designed to determine the weight and importance of the rating criteria and was provided to at least 18 experts and experts.

Step 2. Decision matrix designed**Table 2**
Decision matrix.

Cost savings	Government and customs laws of the destination country	State and customs laws of the country (export laws)	Increase sales and profitability	Competition status	Political factors of the destination country	Economic conditions of the destination country	Export goals of the company	certainty (risk reduction)	Criteria
Export strategies									
3.5556	3.1111	2.2222	4.1111	4.3333	3.2222	4.1111	7.555556	6.111111	Agents (direct exports)
3.1111	2.6667	3.2222	2.8889	5.4444	4.4444	4.77778	6.333333	6	Distributors (direct exports)
3.6667	3	4.7647	4.5556	6.1111	4.4444	5.11111	5.111111	7.333333	Awarding points (direct exports)
4.5556	3.6667	4.5556	3.5556	5.8889	4.5556	5.33333	6.222222	5.777778	Management contract (direct export)
4.4444	2.7778	5.3333	4.3333	5.4444	3.5556	4.66667	7	6.888889	Direct marketing (direct export)
3	2.8889	2.7778	4.2222	4.7778	6.2222	4.55556	6.111111	5.555556	Domestic sales (indirect exports)
3.4444	2.4444	4.2222	4.4444	4.7778	4.7778	6.33333	5.555556	6.111111	Sales by other sellers (indirect exports)
3.4444	2.8889	4	4	5.3333	4.8889	6.22222	5.888889	5.666667	Export management companies (indirect exports)
3	3.2222	4.8889	3.7778	5.2222	4.1111	5.66667	5.777778	5.666667	Commercial companies (indirect exports)
2.5556	1.8889	3.2222	3.6667	3.6667	4.5556	5.11111	4.222222	5.333333	Export brokers and agents (indirect exports)
2.7778	2.5556	3.3333	4.2222	4	4.1111	4.66667	5.777778	5.555556	Production contract (production abroad with indirect investment)
2.2222	3.3333	2.8889	3.8889	4.6667	3.5556	5.44444	4.333333	5	Bachelor's degree (production abroad with indirect investment)
2.7778	1.8889	3.4706	3.1111	4.1111	4	4.66667	4.888889	5	Assembly (production abroad with direct investment)
1.6667	3.7778	2.7778	5	4.8889	3.2222	4.55556	5.222222	6.777778	Ownership of production unit (production abroad with direct investment)
2.4444	3.4444	3.4444	4.6667	6.1111	3.2222	3.88889	4.888889	6.333333	joint venture (production abroad with direct investment)

Step 3. At this stage, the final weight W_j of the criteria should be extracted from the data of the decision matrix based on the Shannon software. Next, the outputs of K and d_j entropy E_j are displayed.

Table 3
 K and d_j outputs of entropy E_j are displayed.

	Cost savings	Government and customs laws of the destination country	State and customs laws of the country (export laws)	Increase sales and profitability	Competition status	Political factors of the destination country	Economic conditions of the destination country	Export goals of the company	certainty (risk reduction)
	-2.6786	-2.69	-2.6797	-2.698	-2.697	-2.6915	-2.6991	-2.69568	-2.70212
K	0.3693	0.3693	0.3693	0.3693	0.3693	0.3693	0.36927	0.369269	0.369269
E_j	0.9891	0.9933	0.9895	0.9965	0.996	0.9939	0.99668	0.995432	0.997811
d_j	0.0109	0.0067	0.0105	0.0035	0.004	0.0061	0.00332	0.004568	0.002189
	0.0518	0.0518	0.0518	0.0518	0.0518	0.0518	0.05182	0.051815	0.051815

The Final Step

In this step, the final matrix consisting of the entropy value E_j , the degree of deviation d_j , and the final weight W_j for all criteria is obtained. Final weight W_j of criteria based on Shannon software.

Table 4
 The importance coefficient of the rating criteria.

Importance percentage	Cost savings	Government and customs laws of the destination country	State and customs laws of the country (export laws)	Increase sales and profitability	Competition status	Political factors of the destination country	Economic conditions of the destination country	Export goals of the company	certainty (risk reduction)
W_j	0.209671	0.12994	0.201776	0.06844	0.07775	0.11795	0.064056	0.0881675	0.0422463

Table 5 shows the importance coefficients of the indicators.

Table 5
The importance coefficient of the rating criteria.

Criteria	Importance percentage
Government and customs laws (export laws)	0.209671
Cost savings	0.12994
State and customs laws of the country	0.201776
Political factors of the country	0.06844
Export goals of the country	0.07775
Competition status	0.11795
Increase sales and profitability	0.064056
Economic conditions of the country	0.0881675
certainty (risk reduction)	0.0422463
Sum	100%

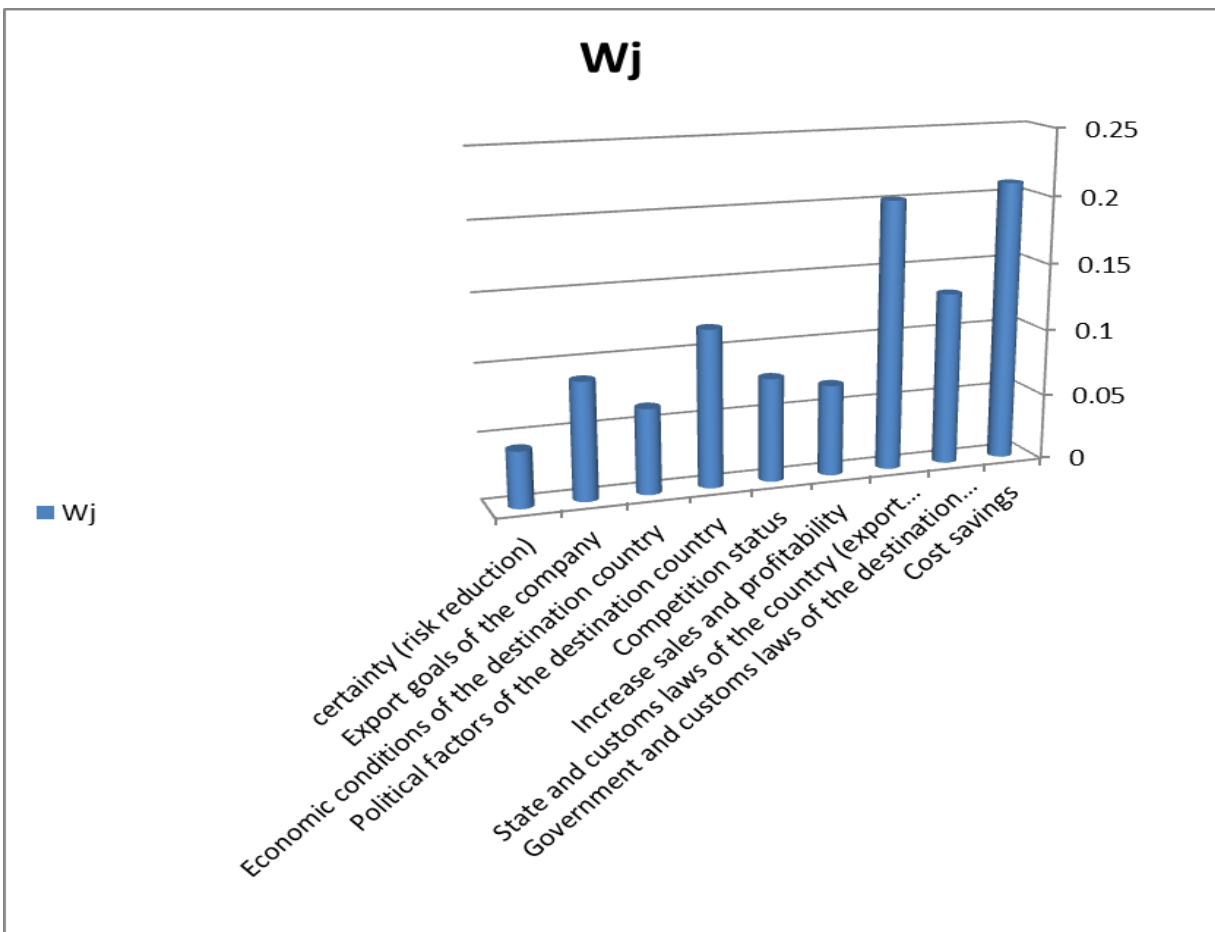


Fig. 1. Final weight :Wj The importance coefficient of the rating criteria.

According to the studies and analyzes of the data obtained in this research, Government and customs laws and export laws as the most optimal and best criterion or, in other words, the most important criterion, and then cost savings are ranked as effective indicators respectively.

5. Conclusion

Among the non-oil producers, the cement industry has a very high export potential. It is essential to identify and utilize the best export strategy to succeed. To determine the best approach for evaluating the cement industry's export strategies, it is necessary to specify the indicators and their importance coefficients. In light of this, this article aims to identify and evaluate the appropriate indicators for evaluating export strategies in the cement industry and to determine the importance of these indicators. To evaluate export strategies in the cement industry, the opinions of cement industry experts were utilized to calculate the importance coefficient of indicators. The data was then analyzed using the Shannon technique.

The study and analysis of the data obtained indicate that Government and customs laws and export laws are the most optimal and best criteria, or, in other words, the most important criteria, and then cost savings are ranked as effective indicators.

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