



Designing a Model for Creation of Export Consortiain Business Cluster

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A B S T R A C T

Today, small and medium enterprises are considered as one of the main components of economic development for various reasons. To name a few, job creation, resource efficiency, the ability to enhance local technology, the ability to meet new needs, quick decision-making, and training successful managers will all lead to the growth and economic development of countries. Despite these benefits, small and medium enterprises face restrictions in areas such as human resources, specialist forces, and market access. To address these challenges, strategies need to be adopted to support and reinforce the enterprises. Creating a network of export consortium is one of the strategies that help providing a better access to the target market. In this study, first, we identified various dimensions in creating export consortiums and ranked them for small and medium enterprises. Second, based on the grounded theory research methodology, we proposed a model by examining the dimensions, components and categories affecting the establishment of successful export consortia. Accordingly, 26 subcategories are categorized into 6 main categories. Then, their relative importance in the success of the export consortia is determined by identifying the weights of each category and using the Hierarchical Analysis Method (AHP).

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1. INTRODUCTION

Small and Medium Enterprises (SME) are one of the most important factors of economic development and their importance in regional economic growth [1]. Small and medium enterprises refer to firms with fewer than fifty employees. They have many benefits such as high job creation, resource efficiency, high flexibility, high absorption capacity and technology localization, support for systematic and productive capacity building, high ability to respond to new needs, rapid decision making, education and training of successful managers, increased economic efficiency, use of local facilities, and establishment of industrial ties. On the other hand, these firms have limitations which can lead to their failure including lack of specialized staff, inadequate technical skills, poor access to markets, and lack of information and management capabilities. In order to address these restrictions, direct and indirect support and reinforcements are required to make them a good fit for

a country's economic development [2].

Despite the key role of small and medium enterprises in economic development and job creation in the global economy, one of the biggest problems for these businesses is their high failure rates. Therefore, special attention and support to small and medium industries are among the most important strategies of industrial policymakers. The developmental interventions of back-up institutions should be aimed to solve common problems of firms and creating the necessary framework for collective and group approaches that in addition to feasibility, including high efficiency and low costs [3]. In this framework, common issues often become relevant when firms operate in one discipline or are geographically close. Therefore, the focus on the development of business clusters has been specially considered. Given the breadth and variety of existing challenges, no small and medium-sized firms alone can afford to respond to the problems, and this requires new patterns of inter-firm relationships, cooperation, and

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coalitions. Few companies have all the resources to compete in today's vibrant environment. Therefore, firms are trying to get the necessary resources through alliances and networking [4, 5]. Thus, the organization of small enterprises in the form of networks in the context of industrial clusters is a way to better utilize collective capacity and economies of scale and market development and increase their impact in the field of export.

Past studies have examined the marketing networks of SMEs and the consequences of their formation on the marketing activities network's member. Thompson Business networks within industrial clusters have been studied by case study, however, the interactions and the nature of networks in terms of the concepts, motivations, expectations, and outcomes of network participation not fully understood. The answer to the complex and important issue of creating export consortia, regardless of cultural and social context, and its applicability, will not succeed. There is no comprehensive study to present a specific model of export consortium in the context of industrial clusters. So in this research, in order to reduce research gaps, provides a comprehensive approach to the study of the model for creating export consortia of SMEs with all of influencing factors and a combination of quantitative and qualitative methods has been used, so the present research is innovative in the subject and methodological aspects compare to past research.

Accordingly, the main objective of this paper is to provide a suitable model for creating an export consortium for small and medium enterprises and prioritizing them with limited resources. The categories and dimensions of the model will also be ranked by the Analytic Hierarchy Process (AHP) method.

2. MATERIALS AND METHOD

2.1. Export Consortia According to the definition of the trade development organization, the export consortium is a voluntary combination of several companies that aim to demonstrate the art of exporting to its members, as well as increase the export capacity, expand the sale of goods and services abroad, and facilitate the export of these products through a participatory activity [6-12]. An export consortium is a collaboration between companies that allows individual companies to take advantage of opportunities in international markets due to globalization in a competitive environment. The export consortium can be considered as a formal strategic, medium to long-term partnership between several companies that act as a service provider specializing in facilitating the access of firms to foreign markets. Under special circumstances and requirements, they can handle all or part of the export activities of enterprises, especially small and medium enterprises.

Through cooperation in an export consortium that combines the expertise and financial resources of several companies, small and medium enterprises can overcome the limitations of small firms and effectively reduce their costs and risks. In order to enter foreign markets, members can improve their profitability, increase productivity and gain knowledge [6]. Small firms, therefore, can significantly improve their export potential, and reduce the risk and cost of entering foreign markets by sharing their knowledge, financial resources, and communications.

2.2. Industrial Clusters Industrial clusters are new terms and concepts in the field of regional and industrial economics. In recent decades, industrial clusters have played a pivotal role in regional development in many developed and developing countries [7]. The industrial cluster was first introduced by Alfred Marshall in 1890. He stated that while small companies are natural competitors, they are members of an independent network [8]. Porter then introduced the term industrial cluster in 1990 and the term regional cluster in 1998. Porter is the most renowned scientific figure in the field of industrial clusters. He described how economic enterprises are located in the length and width of each other and the vertical and horizontal relationship between them, along with how to interact with national and local institutions and all factors involved in the production process in the form of a cluster [9].

An industrial cluster represents the geographical and regional focus of the industries that produce and sell a range of complementary or related products and face common challenges and opportunities. [10]. Therefore, these productive activities have common problems and opportunities that lead to economic savings and accelerate the development of specialized technical, managerial and financial services [11]. Porter's work have completed by providing a more meaningful concept of the cluster. They defined a cluster as a production network of interconnected and focused firms that are linked throughout a value creation chain. This chain embraces the earliest part of the work, such as basic research to marketing and sales [12]. Even the firms operating in a segment of the value chain that is linked horizontally to the value chain benefit from mutual learning and motivation. Even if these firms do not exchange directly with each other, they can benefit from carrying out the same activities in one area [13].

In the most complete definition of an industrial cluster, Li et al. [8] defined it as a set of commercial and non-commercial enterprises concentrated in a geographic location and in an economic region that establishes vertical and horizontal communications for the production of one or more similar end products for external economic gain. While competing with each other, they collaborate in many cases. The internal

connections of these firms will reduce costs and facilitate access to institutions, knowledge, and technology of production, sales markets, and provision of customer needs [8]. Since many of the enterprises that are active in industrial clusters are small and medium enterprises [14], industrial cluster features affect the functioning of active enterprises within the cluster, while facilitating the marketing and export activities.

2. 3. Analytical Hierarchy Process (AHP) The analytical hierarchy process is one of the most comprehensive systems designed for decision making with multiple criteria [15] and is a flexible method for solving multi-criteria issues and choosing options based on their relative performance compared to one or more criteria [16]. The AHP enables the decision maker to structure a complex problem in the form of a simple hierarchy [17]. This approach is an effective and operational approach that can take into account non-structural and complex decisions [18] and has been successfully used in diverse management applications.

The AHP, first introduced by Saaty [19], is an MCDM method for solving MCDM problems by setting their priorities. This method uses precise numbers in the rating of alternatives. The AHP uses objective mathematics to process the subjective and personal preferences of an individual or a group in decision-making [20]. The AHP works on a premise that decision making of complex problems can be handled by structuring it into a simple and comprehensible hierarchical structure. The solution of the AHP hierarchical structure is obtained by synthesizing local and global preference weights to obtain the overall priority [19, 20].

The analytical hierarchy process is one of the most comprehensive systems designed for decision making with multiple criteria and is a flexible method for solving multi-criteria issues and selecting options based on their relative performance compared to one or more criteria [21]. This approach is an effective and operational approach that can take into account non-structural and complex decisions [18, 22] and has been successfully used in diverse management applications.

Each issue of the analytical hierarchy process has three general levels: the first level is the overall problem objective, the second level is assessment criteria, and the third level is possible options. At each level of the hierarchy, components are compared two by two in order to determine the relative preference of each one [23]. In this method, the overall weight coefficient for each option is achieved according to the main goal. The option with the highest weight is chosen as the best option. To study more about the process steps, as well as the application and generalizations of it, we can refer to literature survey [17, 19, 24, 25].

2. 4. Method In this research, a model for the establishment of export consortia is presented using the grounded theory approach. The importance of each category and sub-category that were first identified by grounded theory in the final model has been prioritized using the views of experts and executive managers of the two stone and carpet consortia in Fars province. In this methodology, Saunders model entitled "Research Onion" has been used [26]. This model shows the processes of research. A study is composed of different layers in which each layer is affected by the higher layer. These layers are the research philosophy layer; the research approach layer; the research strategies layer; the research method selection layer; the research time horizon layer; and the layer of methods and procedures for data collection. The first layer, i.e. research philosophy, represents the worldview and researcher's view of the world. The philosophy of the present study is interpretivism. The second layer of the present research, i.e. research approach, is inductive. This is because the required data has been collected with the help of the experts who are familiar with the literature on industrial clusters and export consortia and experienced in this field and then, a comprehensive model is presented for establishing export consortiums by analyzing these data. The third layer, i.e. research strategy, is the use of grounded theory method. Grounded theory is an exploratory research method that allows the researcher to formulate a new hypothesis rather than using predefined hypotheses, in cases where there is no hypothesis. In other words, grounded theory is a method for gaining an understanding of the subject matter and the subject or subjects that have not been thoroughly investigated before, and our knowledge is limited [27]. In the methodology of grounded theory, the discovery or production of the theory is based on the existing facts and through the systematic collection of data, taking into account all potential aspects related to the subject matter of the research. The collected data evolve progressively step by step until the theory is achieved. In this method, along with collecting the research data using a semi-structured interview and with the help of the leading experts in the subject matter, qualitative data including interview texts and reports are analyzed using the three stages of open coding, axial coding and selective coding [28]. After analyzing (coding) the data obtained from each interview or report, by specifying the vague points or the weakness of the theory and the categories, the next sample is chosen to refine and richer the theory. Sampling continues so that the categories are saturated [29], that is, new ideas qualitative methods and in particular the grounded theory methodology. Then, the data needed to prioritize the concepts of the model are analyzed using quantitative methods and using a questionnaire and statistical tests.

The fifth layer is the time horizon of the research, which is of cross-sectional type because the present research has taken time to collect its required data.

The sixth layer is research techniques and procedures. The research population consists of all experts and executives with the experience of developing clusters and creating (successful or unsuccessful) networks, familiar with industrial clusters and export consortia. In general, two tools have been used for collecting data. These tools are a semi-structured interview, which plays a key role in the grounded theory methodology; a secondary role in other methods, such as participatory and non-cooperative observations, documents, visual and auditory cases, and use of the focal group [28, 32].

3. RESULT AND DISCUSSION

In this research, the grounded theory methodology has been employed to provide a model for the establishment of export consortia. Using a questionnaire and semi-structured interviews with 12 experts on the subject of industrial clusters and export consortia (CDA, manager/owner of enterprises that have had successful /unsuccessful network experience, also reports, documents and related articles have been used, the model concepts have been ranked to determine their level of importance.

3. 1. Open Coding The first step in analyzing qualitative data in a systematic approach between them in order to carry out "axial coding". It should be noted that in the course of these coding processes, the researcher compiles data on the problem using "theoretical sampling" and according to the concepts extracted from data, which will provide a richer image of the resulting concepts and categories. The main purpose of the axial coding step is to reduce the initial set of codes to the explanatory framework of high-level categories. This is done by linking the categories to one another, which can be done by breaking the categories into more controllable units and creating multiple codes from a concept. Finally, categories are refined by "selective coding" and the theoretical framework is created through these processes.

The fourth layer is the research method selection. In this study, mixed methods are used for data collection and data analysis. In the first step, a model is presented for creating export consortia using and concepts are not further explored in examining the latest samples and existing concepts are not challenged by further analysis of data [30]. In open coding, there are two key activities involving conceptualization and categorization. In this way, after collecting data from the source of the research materials, including interviews, documentation, and

organizational documents, the appropriate codes are first assigned to different parts of the data. These codes are defined in the form of a "concept" and take on a conceptual label during a specific process that is the second component of categories [31]. Categories are higher and more abstract compared to the concepts that they represent. Categories are in fact the result of the grouping of concepts and the cornerstone of theory. The classification of concepts in the form of categories is done during the open coding process. Then the researcher will investigate the different dimensions of these categories and find the links of grounded theory is open coding. Open coding is an analytical process through which the concepts and categories are identified and their features and dimensions are discovered in the data [33]. In the open coding process, the implicit concepts of the text of the interviews and documentation are identified by their deep examination and categorized as primary categories [8]. In the first step, the words and phrases related to the topic were extracted by studying each row, sentence or paragraph of the text of interviews and documents. Then, each of the words and phrases was assigned a name in the form of concepts and categories [34].

3. 2. Axial Coding In the second step, the similarities and differences between the initial codes were revealed by reviewing and comparison [35]. Moreover, the codes with the same content and concept were classified under the same concept. These concepts are more abstract than the initial codes and have broader meanings [36]. After classifying the initial codes in the form of concepts, links between the classes of concepts were made by continuously comparing concepts and codes with each other so as to classify the concepts in the form of categories of the model. In other words, by continuously comparing the concepts with each other and with initial codes, the common concepts were identified and categorized as one category [37]. The categories are more abstract compared to the concepts and provide the foundation for theory formulation by which the theory can be presented in a coherent way [38]. Based on the systematic approach of Strauss and Corbin [31], the categories extracted from open coding step are categorized in terms of causal condition (causes of consortium creation), the main phenomenon (consortium creation), strategy (strategies for the creation of the consortium), confounding factors (specialized conditions affecting consortium creation strategies), underlying factors (the general and widespread conditions affecting consortium) and consequences (the consequences of consortium creation) [39] as indicated in Table 1. The categories are identified according to the analytical hierarchy process method using questionnaires completed by an expert based on priority.

3. 3. Selective Coding In the third step of qualitative data analysis, links were made between the categories on the level of attributes and dimensions using selective coding by a comparative study of related categories and concepts. Selective coding is the most important stage of theorizing, in which the researcher relates the main category to other categories, approves the correlation between them, and corrects the categories that need to be improved and reviewed.

Using the above triple analysis, the theory of the phenomenon under study (the creation of a consortium in the industrial cluster) was developed (Figure 1). In order to examine the importance of each of the 205 concepts extracted in this research, the opinion of member and executives of two consortiums of stone and carpet in Fars province have been used through a questionnaire. Friedman test has been also used to evaluate the results. The results of this test, including subcategory of each category, is shown in Table 2. The arrangement of the concepts in the tables determines the order of their importance.

3. 3. Prioritization of Model Categories In this research, the categories have been prioritized using AHP and Fars province consortium members (stone and carpet cluster) and manager’s opinion through a structured questionnaire. In this method, the final weight of each

category indicates its importance, so the higher the final weight, the greater the importance of that category (Table 2).

3. 4. Model Validation To determine the validity of the extracted pattern in the qualitative section of the research, a template was developed for the experts in the field of industrial policy and business clusters. After receiving feedback and making the proposed amendments, the final model was developed in the qualitative section of the research. The research outcomes in this section are the results of semi-structured interviews with 10 experts. This process was an interactive process and resulted from the accurate evaluations of the experts and the improvement of the process and the results of the work. In this way, feedback loops are formed, and the generated contradictions are specified and corrected by making the necessary adjustments. Furthermore, to strengthen the credit, the following elements are applied [40]:

- Pluralism: Using the views of different people and collecting data from several sources of information (CDA cluster developers, small and medium-sized enterprise managers in industrial clusters with experience in business networks, experts in active cluster support institutions, academic and industrial experts, and those who have had unsuccessful experiences in collaborative activities).
- Semi-structured interviews: Proposing open questions to the target respondents.
- Abandoning prejudices: not interfering with the prejudices and desires of the researcher and using different experts for analysis.

TABLE 1. Coding

Open Codes	Axial Codes
The desire for strong presence and empowerment in the export markets, the common strengths and weaknesses of the potential members of the consortium, the costs, and risks, the inherent constraints of small and export firms, the external environment of industry (domestic and international)	Causal Conditions
Consortium structure, consortium approach, consortium goals, consortium types	Main Phenomena
Actions after the creation of a consortium, actions were taken during the creation of a consortium, measures taken prior to the creation of a consortium	Strategies
Economic Infrastructure, Management Infrastructure, Legal Infrastructure, Political / Governmental Infrastructure, Cultural / Social Infrastructure, Technology Infrastructure	Underlying Factors
characteristics of consortium members, characteristics of consortium agent/manager, characteristics of product and service marketing mix, supporting institutions, costs associated with creating a consortium	Confounding Factors
Empowering consortium member companies, improving performance, coordinating and collaborating, reducing costs and risks	Consequences

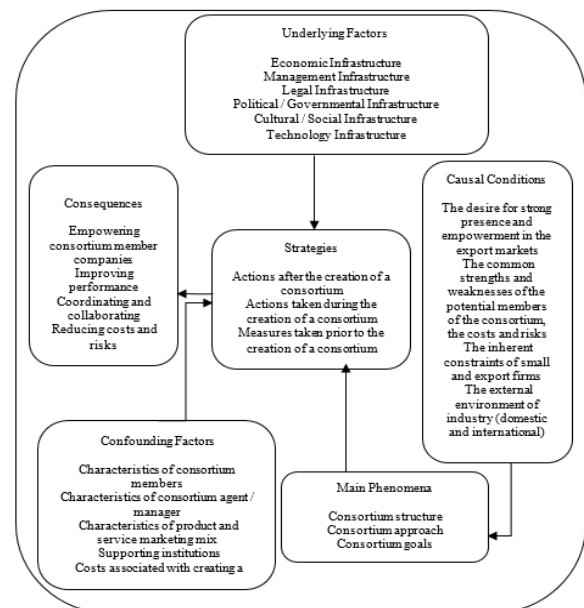


Figure 1. Model of export consortia creation

TABLE 2. Prioritization of categories based on AHP

Category Axial codes	Sub Categories Open codes	Weight/ Rating (AHP)	Ranking AHP
Main Category	Consortium Structure	0.31	1
	Consortium Approach	0.30	2
	Consortium Goals	0.29	3
Causal Conditions	The Desire for Strong Presence and Empowerment in the Export Markets	0.24	1
	The Common Strengths and Weaknesses of the Potential Members of the Consortium	0.21	2
	The Costs and Risks	0.21	3
	The Inherent Constraints of Small and Export Firms	0.19	4
	The External Environment of Industry (Domestic and International)	0.16	5
Underlying Factors	Economic Infrastructure	0.25	1
	Management Infrastructure	0.20	2
	Legal Infrastructure	0.18	3
	Political / Governmental Infrastructure	0.14	4
	Cultural / Social Infrastructure	0.14	5
	Technology Infrastructure	0.12	6
	Characteristics of Consortium Members	0.30	1
Confounding Factors	Characteristics of Consortium Agent/ Manager	0.21	2
	Characteristics of Product and Service Marketing Mix	0.21	3
	Supporting Institutions	0.14	4
	Costs Associated with Creating a Consortium	0.14	5
	Actions After the Creation of a Consortium	0.41	1
Strategies	Actions Taken During the Creation of a Consortium	0.34	2
	Actions Before the Creation of a Consortium	0.25	3
	Empowering Consortium Member Companies	0.30	1
Consequences	Improving Performance	0.29	2
	Coordinating and Collaborating	0.21	3
	Reducing Costs and Risks	0.20	4

In order to determine the content validity of the questionnaire and the importance level of the concepts, the questionnaire has been verified and then approved by the expert of the industrial clusters and the export consortiums. Additionally, for measuring the reliability of the questionnaire, Cronbach's alpha and the two-half (Gutmann) coefficient test have been used.

4. CONCLUSION

Despite the critical role of small and medium enterprises in the economic development of the regions and the significant number of these firms and their strengths, their impact on exports is not significant in comparison with large firms due to the limited available resources

such as financial resources, professional human resources, and market access. One solution for utilizing collective capacity in the industrial clusters is to create export networks and consortiums. For designing the model of export consortiums, the grounded theory method was used. To obtain concepts and categories, in addition to a literature review, theoretical sampling method, interviews with managers and cluster agents, export consortia, and organizational documents were used. The concepts and categories were obtained using open, axial and selective coding to develop a model for creating export consortium. The model was designed in the form of 205 concepts, 26 subcategories and 6 main categories according to the grounded theory method where the categories have been prioritized using AHP.

This study shows that the desire for strong presence and empowerment in the export markets and the common strengths and weaknesses of the potential members of the consortium are one of the most important incentives for small business enterprises to appear in the export consortium. In creating a consortium, attention to the structure of the consortium and, in particular, the provision of a legal and organizational structure for the creation of a consortium is crucial.

In the area of executive strategies, executive measures after the establishment of the consortium are more important than steps taken before and during the creation of the consortium in order to consolidate the consortium. These measures include branding (joint brand registration), the provision of a diverse range of products, the design of an export strategy, ongoing research in the field of international marketing and establishing a specialized and agile team in the field of sales and exports. In the category of underlying factors, the existence of infrastructures for economic, management, and law have become more prevalent. Concerning the category of confounding factors, characteristic definition of the consortium members, including their commitment to respect the ethics of the business, consistency of members' goals, similarity in terms of investment capability, amount of motivation, brand, experience in international markets, having distribution channels, personal credentials, personality and production ability and observance of these points, are important in choosing members of the consortium in order to strengthen it and reduce the inconsistencies. In addition, the features of the consortium's agent/manager and having special capabilities are of great importance. Finally, empowering member firms and improving their performance are the most important expectations of the project.

The findings of this study will be useful for small and medium enterprises' managers and industrial policymakers and government managers to improve the effective guidance of export consortium and increase the probability of success. Therefore, the proposed model for managers, investors, and industrial sector planners are important for identifying all effective factors in creating successful export consortia in a comprehensive way and to use their opportunity to grow and develop. Furthermore, considering resource constraints, identifying effective factors and prioritizing them can result in better allocation of resources.

The most important innovation of this research can be summarized as follows:

- Providing a comprehensive and integrated model covering all factors affecting the formation of export consortia in industrial clusters. Previous studies mostly focus on a specific aspect of this area and there is no specialized conceptual model. The proposed model is comprehensive which refers to all the different issues of

a phenomenon such as the causes and necessities, conditions, and factors of, definition and dimensions of the phenomenon, mechanisms and the consequences of using the phenomenon. In this research, we try to present a new look at market development in business clusters, by conducting research and propose the results in the form of a model, which shows how the phenomenon of creating export consortia in the context of industrial clusters would help.

- Using different and new methodologies in the field of industrial cluster market: Considering that, so far, comprehensive research with the combination of qualitative and quantitative methods in Iran has not been observed for the phenomenon of creation of export networks in business clusters, the power of the current research, as compared to the relevant literature, was considered to be an innovation. In addition, the methodology used by previous researchers is either a quantitative methodology or a qualitative methodology. To solve and respond to such complex issues as the phenomenon of establishing export networks, the use of mixed-methods approach was rather scarce, hence the present study moved a step forward vis-à-vis methodological advancement in the field.

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Designing a Model for Creation of Export Consortiain Business Cluster

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امروزه بنگاه‌های کوچک و متوسط یکی از مؤلفه‌های اصلی در توسعه اقتصادی محسوب می‌شوند و با توجه به مزایایی از جمله اشتغال زایی، بهره‌وری منابع، توانایی رشد و بومی‌سازی فناوری، توانایی پاسخگویی به نیازهای جدید، تصمیم‌گیری سریع و آموزش مدیران موفق موجب رشد اقتصادی کشورها می‌شوند. در کنار این مزیت‌ها، بنگاه‌های کوچک و متوسط با محدودیت‌هایی در حوزه‌های مختلف از جمله منابع انسانی، نیروی متخصص و دسترسی به بازار مواجه‌اند. از این رو با توجه به اهمیت آن‌ها در رشد و توسعه اقتصادی کشورها، استراتژی‌هایی باید در راستای حمایت از آن‌ها اتخاذ شود. ایجاد شبکه‌ها و کنسرسیوم اقتصادی یکی از راه‌های دسترسی به بازار است. در این پژوهش ابعاد، مولفه‌ها و مقوله‌های مؤثر بر ایجاد کنسرسیوم‌های صادراتی موفق مطابق روش تحقیق داده‌بنیاد شناسایی شده و مفاهیم در قالب ۲۶ زیر مقوله و ۶ مقوله اصلی دسته‌بندی گردیدند، سپس با شناسایی وزن‌های هر یک از مقوله‌ها و مفاهیم با استفاده از روش تحلیل سلسله‌مراتبی، اهمیت نسبی آنها در موفقیت کنسرسیوم‌های صادراتی تعیین گردید.

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