Marketing Risk Path Identification of Small and Medium-sized Energy Enterprises Based on ISM-MIMAC

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Abstract. To explore the path identification of marketing risk factors in small and medium-sized energy enterprises, this study extracts 16 factors influencing marketing from 3 aspects of the external environment, internal management and information feedback through literature analysis and expert interviews. In this paper, the interpretative structural model (ISM) is used to construct the multi-level structural diagram of influencing factors and the influencing factors are divided into three layers: direct factors, intermediate factors and fundamental factors. Then the matrix impact of cross multiplication applied to classification (MICMAC) is used to analyze the factors affecting the risk of small and medium-sized energy enterprises, and then the driving force and dependency classification diagram of marketing risk factors is drawn. The results show that the dependence and driving force of financing risk, partners, marketing personnel and other factors are relatively weak, and risk treatment can be prioritized. The factors such as lack of policies, sudden factors and organizational structure have high driving forces, which are the key factors that constitute the marketing risks of energy enterprises, and should be focused on. This study takes the marketing risk factors of small and medium-sized energy enterprises as the research object, and the research results have certain universality, which can provide new solutions for small and medium-sized energy enterprises to face marketing risks.

Key words: ISM; MICMAC; Marketing Risk Factors; Small and Medium-sized Energy Enterprises.

1. Introduction

As the world's largest energy producer and consumer, China has been facing the problems of oversupply of energy, structural imbalance, low efficiency and serious pollution, etc. It has become imperative to promote the sustainable development of China's energy industry. In such a context, it is of great practical significance to carefully discover and summarize the operation rules of the market, identify the marketing risk factors in the profit growth of energy enterprises, and strengthen the marketing of energy enterprises.

Many experts and scholars have conducted research around marketing risk. For example, Han[1] used a combination of hierarchical analysis weighting and fuzzy comprehensive judgment to assess the green marketing risk in the automotive industry and concluded that the green marketing risk value of the Chinese automotive manufacturing supply chain is high. Li[2] analyzed the electric power marketing risk management of Chinese electric power enterprises through three aspects: market risk, legal risk, and service risk. Zhao[3] used the rate of change of the main business income of electric power enterprises to measure marketing risk indicators and constructed a VAR model to derive the sources of risk and degree of influence in the marketing of Chinese electric power enterprises. Yang[4] analyzed the types and causes of service risk in China's electric power marketing business from the perspective of electric power marketing business management, and proposed measures to optimize the management system. He and other scholars[5] proposed the concept of the marketing business service risk index to measure the magnitude of marketing business service risk and to study marketing business service risk from the customer's perspective to guide marketing business activities. Fan[6] analyzed the dilemma of marketing management in Chinese electric power enterprises based on the background of big data and proposed reference strategies for reform and innovation of marketing management.

Previous studies have focused on the sources, management and control of marketing risk, and have used multiple sources of data to construct an index system of marketing risk influencing factors, but generally lacked analysis of the internal correlation between the factors of each dimension. Moreover, the research in the energy field has mainly focused on the power industry, which is difficult to be universal in the energy industry. Considering small and medium-sized energy enterprises are important but easily neglected, we focus on the research of marketing risk of small and medium-sized energy enterprises, using the ISM-MICMAC model to analyze the relationship between the factors and clarify the paths between the risk factors. We are aimed to provide suggestions to effectively reduce the occurrence of marketing risks and improve the profitability of Chinese small and medium-sized energy enterprises.

2. Marketing risk factor index system

Due to the increasing complexity of market risks, the economic interests involved in the process of encountering risks are complicated. Lack of strategic considerations in the formulation and implementation of marketing activities will lead to varying degrees of loss. Therefore, small and medium-sized energy enterprises should master the information related to marketing, effectively identify and control the influencing factors in each marketing link, and prevent possible risks.

This paper assesses the risk of marketing activities of energy enterprises from three aspects: external environment, internal management and information feedback. Initially, we screened the marketing risk factors of small and medium-sized energy enterprises. Based on literature analysis and expert interviews, this paper summarizes and refines risk factors, and finally constructs three first grade indexes and 16 second-grade indexes, including market environment risk factors, enterprise marketing risk factors and market information feedback risk factors.

a) Market environment risk. The rise of new energy in recent years in particular has attracted widespread attention in the policy, capital and technology markets. Changes in the macroenvironment will lead to changes in business policies, which will further affect changes in the marketing segment. The market environment risk includes six secondary indicators: policy deficiencies (S_1), industry competition (S_2), emergent factors (S_3), technology barriers (S_4), homogenization (S_5), technology iteration (S_6).

b) Enterprise marketing risk. The marketing risk within the enterprise comes from both the organizational structure and supply chain management of the enterprise, as well as from the whole process of procurement, production, transportation and sales to the final recall of marketing activities. Deviations in these processes may bring marketing risk. This level is divided into seven secondary indicators: financing risk (S_7), organization structure (S_8), partnership (S_9), marketing personnel (S_{10}), innovation capability (S_{11}), marketing efficiency (S_{12}), supply chain risk (S_{13}).

c) Market information feedback risk. Information is the flowing bloodline for enterprises. The ability to obtain and respond to market information after the acquisition, as well as consumers' willingness to purchase energy products, will directly affect the production and sales of energy products. This index includes three second-level indicators: information-based degree (S_{14}), information forecast rate (S_{15}), purchase intention (S_{16}).

The marketing risk evaluation index system of energy enterprises is shown in Table.1.

Table 1. Energy enterprise marketing risk evaluation index system

Tier 1 Indicators	mark	Tier 2 indicators	Connotation	References
Market Environment Risk	S_1	policy deficiencies	In the process of energy dispatch and market trading, the implementation of relevant policies is not regulated.	[7]
	S_2	industry competition	Energy investment is hot in the market and energy companies are facing fierce market competition.	[8]
	S_3	emergent factors	The development and use of energy are vulnerable to sudden natural environmental and social events.	[9]
	S_4	technology barriers	There is insufficient protection of energy intellectual property rights and SMEs have not built up their technological barriers	[10]
	S_5	homogenization	The homogenization of energy products is high and the distinctive products lack.	[11]
	S_6	technology iteration	Technology in the energy industry is accelerating, making it difficult for SMEs to keep up with the pace of market development.	[10]
Enterprise marketing risk	S_7	financing risk	Energy companies are highly dependent on bank credit financing and government subsidies.	[12]
	S_8	organization structure	The organizational structure of energy companies lacks adaptability and flexibility.	[7]
	S_9	partnership	Small and medium-sized energy companies are at risk of losing key partners.	[13]
	S_{10}	marketing personnel	Lack of professional marketing personnel and lack of effective incentive and restraint mechanism for marketing personnel training	[6]
	S_{11}	innovation capability	The energy technology innovation capacity of SMEs is low.	[8]
	S_{12}	marketing efficiency	Inefficient marketing of energy companies	[13]
	S_{13}	supply chain risk	Small and medium-sized enterprises are vulnerable to the supply chain.	[11]
Market information feedback risk	S_{14}	information-based degree	Insufficient information on the marketing system	[1]
	S_{15}	information forecast rate	Low responsiveness to market information, such as being able to capture marketing timing on time	
	S_{16}	purchase intention	Consumer groups may shift their purchasing goals, resulting in a decrease in willingness to purchase traditional energy sources.	[6]

3. ISM method

Interpretative structural modeling (ISM) was proposed by Warfield JW in 1974 to analyze the complex socio-economic system structure[14][15]. The model decomposes the complex system into several subsystems. Combined with the practical experience and professional knowledge of experts, it determines the relationship between the elements of each subsystem, uses matrix and computer technology to process the data of each element and its relationship, and then uses the directed graph to make the relationship between the elements hierarchical and organized, and finally forms a multi-level hierarchical structure model. This model is mainly based on qualitative analysis, which can transform the complex relationship between various factors in the system into an intuitive model with a good structural relationship. At present, it is widely used in energy, enterprise management, risk management and other fields. The specific steps of the model establishment are as follows:

Step1: Construct the set of elements S:

$$S = \{S_1, S_2, \dots, S_n\} \tag{1}$$

Step2: Construct the adjacency matrix A and reachable matrix M.

Determine the adjacency matrix $A = \left(a_{ij}\right)_{n\times n}$ between the influencing factors based on whether there is a direct influence relationship between factors S_i and S_j. Its definition formula is:

$$a_{ij} = \begin{cases} 1 & S_i \ has \ direct \ influence \ on \ S_j \\ 0 & S_i \ has \ no \ direct \ influence \ on \ S_j \end{cases} \tag{2}$$

By adding the adjacency matrix A with the unit matrix I and performing the power operation on it, the reachable matrix M of matrix A is obtained if the matrix M satisfies the following conditions.

$$\mathrm{M} = (A + I)^{\lambda+1} = (A + I)^{\lambda} \neq (A + I)^{\lambda-1} \tag{3}$$

Step3: Hierarchy division.

Factor division can judge the hierarchical relationship between each other more clearly, which is conducive to building a scientific hierarchical model. According to the obtained reachability matrix M, the reachability set $R(S_i)$, the antecedent set $A(S_i)$, and the intersection set $C(S_i)$ are obtained. Among them, $R(S_i)$ is a set of all factors affected by the factor S_i, which can reach the set of elements in matrix M which is composed of elements corresponding to the column of each row element ' 1 '; $A(S_i)$ is the set of all factors that can affect S_i, which can reach the set of elements in matrix M composed of rows corresponding to elements of each column whose elements are ‘1’; $C(S_i)$ is the intersection of $R(S_i)$ and $A(S_i)$. Based on the above, according to the principle that the reachable set is equal to the intersection set, the set formed by the factors at the highest level is determined, and then the rows and columns corresponding to the factors in the set in the reachable matrix are removed to obtain a new reachable matrix.

Step4: Explain the structural modeling.

Through the calculation and analysis of steps 1-3, and the reduction and hierarchical processing of the classification results, the hierarchical structure model of system elements is obtained.

4. MICMAC method

Matrix impact of cross multiplication applied to classification (MICMAC) [16] is a variable proposed by DUPERRIN and GODET in 1973 to identify systems with high dynamic performance and high dependence. The reachability matrix constructed by ISM is used to calculate the driving force and dependence of each factor, and then the influencing factors are divided into four quadrants by MICMAC analysis, namely, the autonomous cluster in quadrantI, the dependent cluster in quadrant II, the linkage cluster in quadrant III and the independent cluster in quadrant IV. Horizontal coordinates represent dependence and ordinates represent driving forces, so it is also called the driving-dependence matrix.

The specific analysis steps of MICMAC are as follows: calculate the driving force $D(S_i)$ and dependence $R(S_j)$ of each factor in the reachability matrix, namely:

$$D(S_{ij}) = \sum_{j=1}^{n} S_{ij} \ (i = 1,2,3 \dots \dots) \tag{4}$$

$$R(S_{ij}) = \sum_{j=1}^{n} S_{ij} \ (i = 1,2,3 \dots \dots) \tag{5}$$

Then, the average values of driving force and dependence are calculated, which are taken as the quadrant boundary. According to the reachability matrix, the driving force and dependence are calculated, and all factors are divided into four quadrants in the driving-dependence space.

Among them, the influence factor dependence and driving force in quadrantIare weak, and these factors and systems are disconnected, belonging to the autonomous cluster. The influencing factors located in quadrant II have strong dependence but a weak driving force, which is easily affected by other factors and belongs to the dependence cluster. The impact factors in quadrant III are strongly dependent and driven, and any change in them will affect other factors and have a feedback effect on themselves; however, these factors are not stable and belong to the linkage cluster. The influence factors of quadrant IV have a strong driving force but weak dependence and belong to independent clusters. Usually, factors with a strong driving force are called key factors.

5. Empirical analysis

5.1 ISM calculation and analysis

There is a direct correlation between the various influencing factors of the development of small and medium-sized energy enterprises in the market. By using the method of literature analysis and expert interviews, nine experts in related fields compare the factors that affect the marketing of small and medium-sized energy enterprises to produce an adjacency matrix. Only the direct influence relationship is considered, and the adjacency matrix is established through Equation (2), as shown in Table.2.

Table 2. Adjacency matrix A

Factors	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}	S_{11}	S_{12}	S_{13}	S_{14}	S_{15}	S_{16}
S_1	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0
S_2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
S_3	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
S_4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
S_5	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1
S_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S_7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
S_8	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0
S_9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
S_{10}	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
S_{11}	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
S_{12}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
S_{13}	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
S_{14}	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
S_{15}	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
S_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The reachability matrix was determined with Equations (3), as listed in Table.3.

Table 3. Reachability matrix M

Factors	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}	S_{11}	S_{12}	S_{13}	S_{14}	S_{15}	S_{16}
S_1	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
S_2	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
S_3	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1
S_4	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
S_5	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
S_6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
S_7	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1
S_8	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1
S_9	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1
S_{10}	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1
S_{11}	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
S_{12}	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
S_{13}	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
S_{14}	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
S_{15}	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
S_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

The level of each element is determined according to Table.4, and the iterative results are shown in Table.5.

Table 4. Hierarchical classification of influencing factors

Factors	$R(S_i)$	$A(S_i)$	$C(S_i)$
S_1	1,2,4,5,6,7,11,12,13,14,15,16	1,2,3,4,5,11	1,2,4,5,11
S_2	1,2,4,5,6,7,11,12,13,14,15,16	1,2,3,4,5,11	1,2,4,5,11
S_3	1,2,3,4,5,6,7,11,12,13,14,15,16	3	3
S_4	1,2,4,5,6,7,11,12,13,14,15,16	1,2,3,4,5,11	1,2,4,5,11
S_5	1,2,4,5,6,7,11,12,13,14,15,16	1,2,3,4,5,11	1,2,4,5,11
S_6	6	1,2,3,4,5,6,11	6
S_7	7,12,13,14,15,16	1,2,3,4,5,7,11	7
S_8	8,9,10,12,13,14,15,16	8	8
S_9	9,12,13,14,15,16	8,9	9
S_{10}	10,12,13,14,15,16	8,10	10
S_{11}	1,2,4,5,6,7,11,12,13,14,15,16	1,2,3,4,5,11	1,2,4,5,11
S_{12}	12,16	1,2,3,4,5,7,8,9,10,11,12,13,14,15	12
S_{13}	12,13,14,15,16	1,2,3,4,5,7,8,9,10,11,13,14,15	13,14,15
S_{14}	12,13,14,15,16	1,2,3,4,5,7,8,9,10,11,13,14,15	13,14,15
S_{15}	12,13,14,15,16	1,2,3,4,5,7,8,9,10,11,13,14,15	13,14,15
S_{16}	16	1,2,3,4,5,7,8,9,10,11,12,13,14,15,16	16

The level of each element is determined according to Table.4, and the iterative results are shown in Table.5.

Table 5. Hierarchical decomposition results

Level	Factors
L1	S_6,S_{16}
L2	S_{12}
L3	S_{13},S_{14},S_{15}
L4	S_7,S_9,S_{10}
L5	S_1,S_2,S_4,S_5,S_{11}
L6	S_3

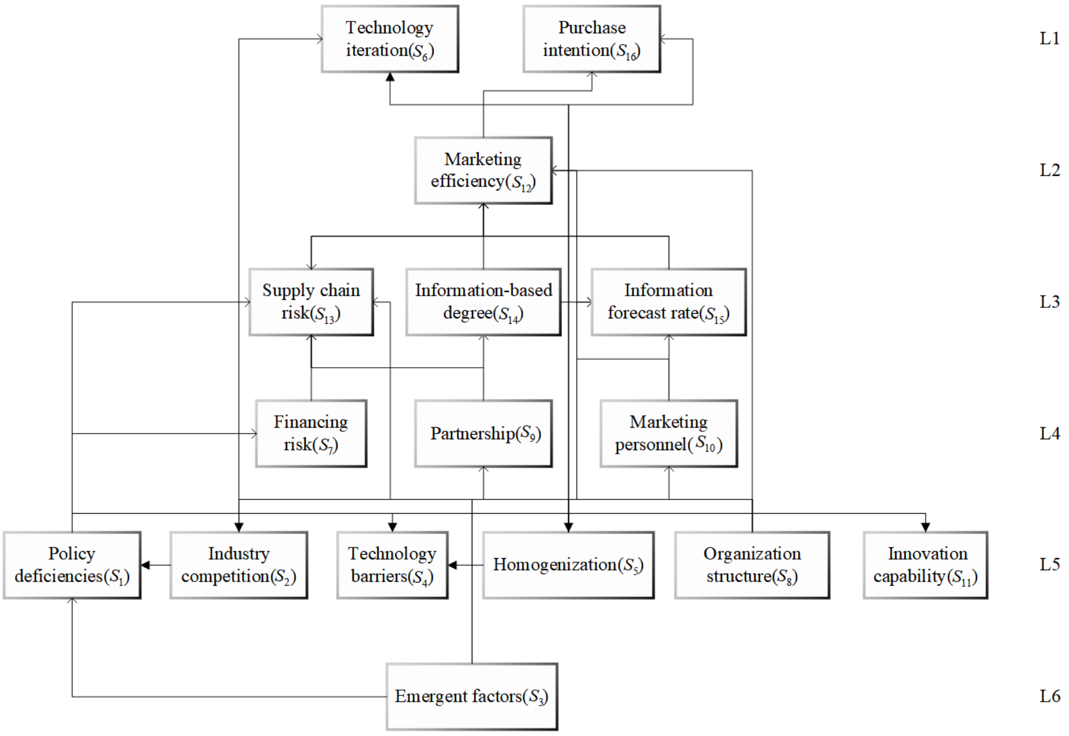

Fig. 1 ISM of marketing risk factors for small and medium energy enterprises

According to the influence factors set of each level divided by reachability matrix M, the ISM model of marketing risk factors for small and medium-sized energy enterprises is formed, as shown in Figure 1. The influencing factors level from L1 to L6, from surface to deep transition. Therefore, the factors affecting the marketing risk of small and medium-sized energy enterprises can be attributed to the direct factor layer, the intermediate factor layer and the fundamental factor layer. The direct factor layer includes L1 and L2 (S_6,S_{16},S_{12}), the intermediate factor layer includes L3 and L4 (S_{13},S_{14},S_{15},S_7,S_9,S_{10}), and the fundamental factor layer includes L5 and L6 (S_1,S_2,S_4,S_5,S_8,S_{11},S_3).

The fundamental factor layer is located at the bottom of the system, including policy deficiencies (S_1), industry competition (S_2), technology barriers (S_4), homogenization (S_5), organization structure (S_8), innovation capability (S_{11}) and emergent factors (S_3) at the L5 level. These factors are source risks in the risk factor system, some of which are beyond the control of enterprises and can be called external risks. For example, the emergent factors at the bottom (S_3), China's energy industry is highly dependent on overseas supply in some core raw materials and parts, and the development and utilization of energy are easily affected by harsh natural climate. Small and medium-sized enterprises are more likely to be passively affected by the upstream and downstream because of their small influence. Therefore, natural disasters and the continuous global novel coronavirus epidemic in recent years are all fatal blows to small and medium-sized energy enterprises.

The intermediate factor layer, the intermediate link between the deep factor layer and direct factor layer, namely the L3 layer and L4 layer, includes supply chain risk (S_{13}), information-based degree (S_{14}), information forecast rate (S_{15}), financing risk (S_7), partnership (S_9), marketing personnel (S_{10}). These factors are indirect influencing factors and have hierarchical relationships, which can be passed to the top through the solution of the underlying factors. It can be seen that the relationship between middle-level factors is complex, and most of them are manageable risks, which is the focus and difficulty of enterprise management and control. For example, supply chain and financing risk (S_{13}, S_7), China's energy enterprises are highly dependent on bank credit financing and government subsidies. Once subsidies are not in place or loans are not approved, projects are often shelved and difficult. Small and medium-sized enterprises in the remote supply chain often have less fixed assets collateral shortage, small business scale, weak management ability, the internal system is not perfect, lack of management ability and other shortcomings, so the holders of funds are generally unwilling to provide financial support for them. The intermediate factors are regulated, supported and influenced by the deep factors, acting on the direct factors.

The direct factor layer is located at the top of the ISM model diagram, namely the L1 layer and L2 layer, including technology iteration (S_6), marketing efficiency (S_{12}), purchase intention (S_{16}). These factors are the most direct factors affecting the marketing risk of small and medium-sized energy enterprises and are also the result of the final effect of the system. For example, as the main purchasing power of small and medium-sized energy enterprises, mainstream consumer groups play a supporting role in the development of enterprises. If their purchase intention is reduced (S_{16}) and their sales are reduced, the most direct impact on enterprises is produced. Direct factors are the result of the operation and function of the underlying factors, and most of these problems need to be solved through the underlying and intermediate factors.

5.2 MICMAC calculation and analysis

Based on the ISM model, MICMAC is used for further analysis. The basic data of reachability matrix M are brought into Equations (4) and (5) for calculation, and then the driving force and dependence classification diagram of energy marketing risk factors for SMEs are drawn, as shown in Figure 2. The 16 factors are divided into the following four categories:

Autonomous clusters (I): S_6,S_7,S_9,S_{10}. Among them, S_7, S_9 and S_{10} are the intermediate factors of the L4 layer, which have a stronger driving force than S_6, and are related to lower-level risk factors. The factors in this quadrant are relatively dependent and less driven, but they play a connecting role in shallow and deep factors. Therefore, targeted risk control strategies should be proposed and prioritized.

Dependent cluster (II): S_{12},S_{13},S_{14},S_{15},S_{16}. Such factors cover the L1, L2, and L3 layers, in the ISM model in the upper layer. Such influencing factors are highly dependent and weakly driven, and often need to be solved by solving other problems. For example, to ensure a stable consumer group's purchase intention, it is necessary to grasp each link in the whole process from the early production to the late marketing, so that the risk will not be superimposed.

Linkage cluster (III): There is no such influencing factor, indicating that the selected factors have a relatively stable influence on other factors.

Independent clusters (IV): S_1,S_2,S_4,S_5,S_8,S_{11},S_3. These factors belong to the deep factors of the ISM model, with the high driving force and low dependence, which is the most fundamental factor to constitute the energy marketing risk of small and medium-sized enterprises, so it should be focused on governance.

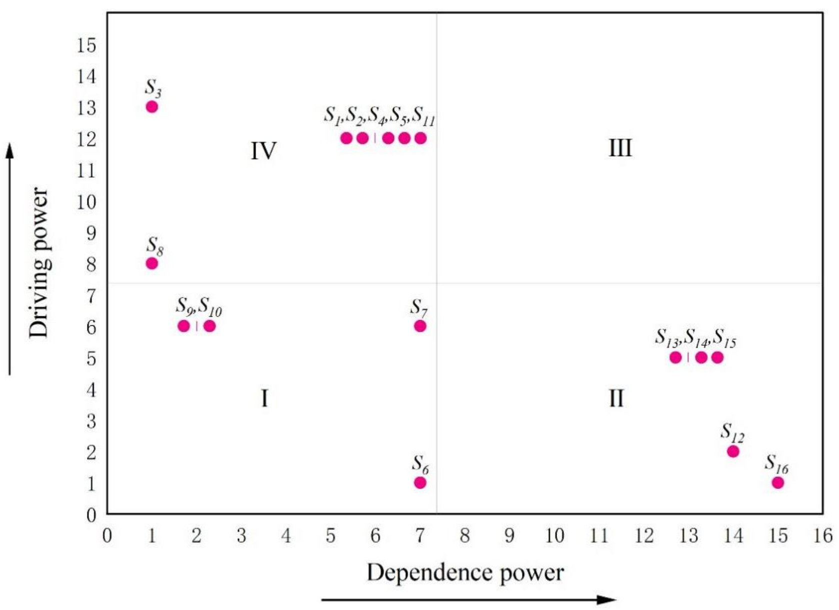

Fig. 2 Driving-dependence power diagram

5.3 Suggestions and discussion

According to the ISM model and MICMAC analysis, there are different degrees of correlation between risk factors of small and medium-sized energy enterprises. Combined with the nature of small and medium-sized enterprises and the particularity of the energy industry, the following suggestions are put forward based on risk factor analysis:

a) Encourage small and medium-sized energy enterprises to improve their management ability and promote the informatization of the marketing system. Small and medium-sized enterprises are relatively backward in management, technology and production mode, and have a poor ability to resist risks. Therefore, small and medium-sized enterprises should be encouraged and guided to strengthen the construction of modern enterprise system, standardize the enterprise governance structure, property rights system, management system, etc. Encourage using various digital means of information management, training professional marketing personnel, improve the efficiency of information flow between departments, and promote SMEs to achieve cost reduction and efficiency.

b) Financial institutions increase their support for SMEs. Advocate all kinds of financial institutions to actively contact and visit small and medium-sized enterprises, in-depth understanding of the financial needs of small and medium-sized enterprises, according to the industry characteristics of small and medium-sized energy enterprises, tailor-made financial service schemes, provide financing help for small and medium-sized enterprises.

c) Advocate enterprises for supply chain risk control, and timely response to changes in the external environment. Small and medium-sized energy enterprises should form a dynamic and stable supply chain ecosystem by establishing a supply chain information-sharing platform. Enterprises should get rid of the dependence on single suppliers and dealers. Through multi-channel information and resource sharing, select the appropriate partners. Promote the standardization of upstream and downstream enterprises, and reduce supply chain risk.

6. Conclusions

Through literature analysis and expert interviews, this paper identifies 16 risk factors affecting the marketing of small and medium-sized energy enterprises. The ISM method is used to construct the interpretative structural model of marketing risk factors of small and medium-sized energy enterprises. MICMAC analysis is used to study the path of marketing risk factors of small and medium-sized energy enterprises, and corresponding countermeasures and suggestions are given. The conclusions are as follows:

a) By constructing the ISM model, 16 factors are divided into the direct factor layer, intermediate factor layer and fundamental factor layer. Direct factors directly affect the marketing risk of small and medium energy enterprises. Intermediate factors play a key role in enterprise marketing through the indirect reachable path, which is the focus of enterprise management control. The fundamental factor is the basic condition affecting small and medium-sized energy enterprises, which should be given enough attention to carry out effective risk prevention and control from the root.

b) Using MICMAC analysis, the risk factors are divided into autonomous clusters, dependent clusters, linkage clusters and independent clusters to determine their mutual dependence and drive. Factors such as financing risk (S_7), partnership (S_9), marketing personnel (S_{10}) are relatively weak in dependence and driving force. They can be prioritized for risk treatment. Policy deficiencies (S_1), emergent factors (S_3), organization structure (S_8) and other factors have high driving forces, which are the key factors that constitute the energy marketing risk of SMEs, and should be paid more attention to.

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