

IDENTIFYING AND PRIORITIZING THE FINANCING METHODS (A HYBRID APPROACH DELPHI - ANP)

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Abstract

Financing is a major challenge for businesses today face. Financing and investment are important factors of development .Access to finance is a major obstacle to economic actors. The purpose of this study is to identifying and prioritizing the financing method. In this study of 18 experts in the field of financing is used.We use the Delphi method to identify the important financing methods .The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts .The important financing methods that have been identified include : foreign direct investment (FDI), foreign indirect investment (IFI), forfaiting, factoring, finance, loan, usance and guarantee. Finally this methods were ranked by the method of ANP.The analytic network process (ANP) is a generalization of analytical hierarchy process (AHP) and can be used to treat more sophisticated decision problems.As a result , the foreign indirect investment (IFI) method won first rank.

Keywords: Financing methods, Delphi, ANP

1.Introduction

Understanding variables that affect the success or failure of growth are important, especially at the firm level. One variable that fundamentally affects how firms expand domestically and internationally is financing since it affects both the acquisition of resources and business operations [11]. Financing and investment are important factors of development .Access to finance is a major obstacle to economic actors [14].One of the major problems of limited access to external finance companies, Especially companies in exporting to different countries is [8].In economic activity and trade finance , working capital is used . Payment and financing through grants , direct investment , indirect, shopping , civic participation and loan ...Possible [14].One of the major sources of corporate finance short-term loans that commercial banks are. Although there are several sources of funding , No one can replace commercial loans , and industrial loans as a credit in the current account Most of the companies are being[5].Although banks under government control and only after the liberation , only a handful of private banks were established , Extensive network of financial institutions to conduct affairs there [1].Finance industry through new financing methods , the need for financial investors is providing[7].Financed through investment in two ways , direct and indirect investments are

made. The case of direct investment is joint venture and indirect investment is buy back. Financing for economic activity , import , export , production and service requirements [14].The purpose of this study is to identifying and prioritizing the financing methods in Iran. As the purpose of this study , the following research questions are posed :

RQ₁. What are the important methods in financing ?

RQ₂. What is to prioritize these methods ?

2.Literature review

Carbo, Rodri'guez, and Udell (2008) argue that the issue of bank competition and credit availability may matter most to SMEs for two reasons. First, SMEs are more vulnerable to information problems. Second, SMEs are much more bank-dependent than large enterprises study of a large number of Spanish SMEs suggests that constrained firms with restricted access to the bank loan market may turn to the trade credit market to exploit their investment opportunities, while unconstrained firms would turn to the bank loan market. Additionally, they analyse the supply side of the trade credit market by testing whether the extension of trade credit is sensitive to bank lending. They find that there is a significant sensitivity of the extension of trade credit to bank lending for unconstrained firms, thereby, suggesting that these financially unconstrained firms may act as 'lenders' due to their easier access to a less costly source of funding [12].In other studies it was found that the growth opportunities , tax shield and internal resources influence the capital structure of small and medium enterprises are. Moreover, the empirical evidence obtained confirms that small and medium enterprises are clearly different behavior than large firms exert ,These firms often have concerns about their finances [3].Two new methods of financing mechanisms to finance the forfaiting and factoring applicable throughout the world [7].Some studies show that less access to credit and lack of competitiveness of banks in order to finance Create constraints for small and medium enterprises in the field of finance [13].

3. Methodology

In this study using the Delphi method and interaction with experts , important methods were identified. Finally this methods were ranked by the method of ANP.

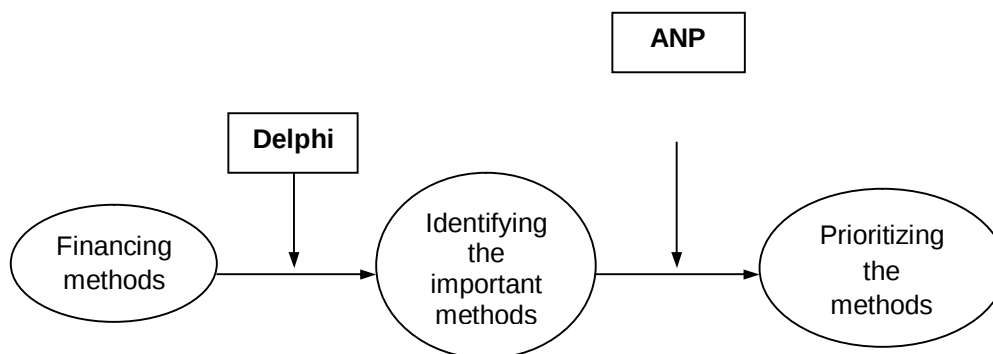


Fig. 1. Model procedure of the current research.

3.1.Delphi method

The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts[2].The experts answer questionnaires in two or more rounds. After each round, a facilitator provides an anonymous summary of the experts' forecasts from the previous round as well as the reasons they provided for their judgments. Thus, experts are encouraged to revise their earlier answers in light of the replies of other members of their panel. It is believed that during this process the range of the answers will decrease and the group will converge towards the "correct" answer. Finally, the process is stopped after a pre-defined stop criterion (e.g. number of rounds, achievement of consensus, stability of results) and the mean or median scores of the final rounds determine the results [9].Delphi is based on the principle that forecasts (or decisions) from a structured group of individuals are more accurate than those from unstructured groups[10].

3.2. Analytic Network Process (ANP)

The analytic network process (ANP) is a generalization of analytical hierarchy process (AHP) and can be used to treat more sophisticated decision problems[4].Saaty (1996) proposed using the Analytic Network Process (ANP), which relaxes the hierarchical structure restriction. However, two questions related to the ANP model warrant attention: how to generate the influential network relationship and how to evaluate the degree of influence [6].The basic ANP consists of the networks of influence that contain the factors of the problem and the logical groupings of these factors into clusters. Each decision network is composed of clusters, their elements, and links between the elements. A link between an element (the "parent") and the elements it connects to in a given cluster (its "children") makes up the usual AHP pairwise comparison set. The dependencies and, feedback, among clusters, and dependencies in the system are expressed through these links. Links between elements within the same cluster are called inner dependencies, whereas links between a parent element in one cluster and its children in another cluster are called outer dependencies. If there are outer dependencies between two clusters in both directions, this relation is called as feedback. Inner and outer dependencies are the best way decision-makers can capture and represent the concepts of influencing or being influenced, between clusters and between elements with respect to a specific element. Pairwise comparisons are made systematically for all combinations using the fundamental comparison scale (1–9) of AHP that is used to indicate how many times an element dominates another. The decision-maker can express relative dominance between each pair of elements verbally as equally important, moderately more important, strongly more important, very strongly more important, and extremely more important. These descriptive judgments would then be translated into numerical values 1,3,5,7,9 respectively with 2,4,6, and 8 as intermediate values for comparisons between two successive points. Reciprocals of these values are used for the corresponding transpose judgments. In making judgments, the decision-maker can incorporate experience, knowledge and hard data. Tangibles can be included in the model alongside intangibles. After the pairwise comparisons are completed, the results are synthesized.

Step 1. (Model Construction): Determine all the elements that affect the decision and group them into clusters for the network.

Step 2. (Formulating the links and performing paired comparisons between the clusters/elements): In the network, formulate the links between the elements and perform the following paired comparisons to derive eigenvectors and to form a supermatrix.

Step 3. (Constructing the Supermatrix): The outcome of the process above is the unweighted supermatrix. Its columns contain the priorities derived from the pairwise comparisons of the elements. An unweighted supermatrix may not be column stochastic. To obtain a stochastic matrix, i.e., each column sums to one, multiply the blocks of the unweighted supermatrix by the corresponding cluster priority. Stochastic matrix obtained is called as weighted supermatrix. Raise the weighted supermatrix to a large power to capture first, second, and higher degree influences. When the differences between corresponding elements of a row are less than a very small number, for successive powers of the supermatrix, the process has converged. The output is limit matrix from where priorities can be read [4].

4. Results

The results of Delphi method is shown in Table 1.

Table 1: Important methods

Symbols	Methods
<i>C1</i>	Forfaiting
<i>C2</i>	Factoring
<i>C3</i>	Foreign Direct Investment (FDI)
<i>C4</i>	Finance
<i>C5</i>	Loan
<i>C6</i>	Foreign Indirect Investment (IFI)
<i>C7</i>	Usance
<i>C8</i>	Guarantee

The unweighted supermatrix is shown in Table 2.

Table 2: Unweighted supermatrix

	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>C5</i>	<i>C6</i>	<i>C7</i>	<i>C8</i>
<i>C1</i>	0.0000	0.1282	0.1162	0.1162	0.0769	0.0967	0.0810	0.0909
<i>C2</i>	0.1428	0.0000	0.1162	0.1162	0.1282	0.0967	0.1891	0.1515
<i>C3</i>	0.0857	0.1282	0.0000	0.1627	0.1794	0.2258	0.0810	0.0909
<i>C4</i>	0.0857	0.1794	0.1627	0.0000	0.0769	0.0967	0.1351	0.2727
<i>C5</i>	0.1428	0.2307	0.2093	0.2093	0.0000	0.0967	0.1891	0.0909
<i>C6</i>	0.2000	0.1282	0.1162	0.1162	0.1282	0.0000	0.1351	0.1515
<i>C7</i>	0.2571	0.0769	0.1162	0.1162	0.1794	0.1612	0.0000	0.1515
<i>C8</i>	0.0857	0.1282	0.1627	0.1627	0.2307	0.2258	0.1891	0.0000

The weighted supermatrix is shown in Table 3.

Table 3:Weighted supermatrix

	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>C5</i>	<i>C6</i>	<i>C7</i>	<i>C8</i>
<i>C1</i>	0.0000	0.1282	0.1162	0.1162	0.0769	0.0967	0.0810	0.0909
<i>C2</i>	0.1428	0.0000	0.1162	0.1162	0.1282	0.0967	0.1891	0.1515
<i>C3</i>	0.0857	0.1282	0.0000	0.1627	0.1794	0.2258	0.0810	0.0909
<i>C4</i>	0.0857	0.1794	0.1627	0.0000	0.0769	0.0967	0.1351	0.2727
<i>C5</i>	0.1428	0.2307	0.2093	0.2093	0.0000	0.0967	0.1891	0.0909
<i>C6</i>	0.2000	0.1282	0.1162	0.1162	0.1282	0.0000	0.1351	0.1515
<i>C7</i>	0.2571	0.0769	0.1162	0.1162	0.1794	0.1612	0.0000	0.1515
<i>C8</i>	0.0857	0.1282	0.1627	0.1627	0.2307	0.2258	0.1891	0.0000

The limit matrix is shown in Table 4.

Table 4: Limit matrix

	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>C5</i>	<i>C6</i>	<i>C7</i>	<i>C8</i>
<i>C1</i>	0.0908	0.0908	0.0908	0.0908	0.0908	0.0908	0.0908	0.0908
<i>C2</i>	0.1188	0.1188	0.1188	0.1188	0.1188	0.1188	0.1188	0.1188
<i>C3</i>	0.1207	0.1207	0.1207	0.1207	0.1207	0.1207	0.1207	0.1207
<i>C4</i>	0.1292	0.1292	0.1292	0.1292	0.1292	0.1292	0.1292	0.1292
<i>C5</i>	0.1423	0.1423	0.1423	0.1423	0.1423	0.1423	0.1423	0.1423
<i>C6</i>	0.1206	0.1206	0.1206	0.1206	0.1206	0.1206	0.1206	0.1206
<i>C7</i>	0.1290	0.1290	0.1290	0.1290	0.1290	0.1290	0.1290	0.1290
<i>C8</i>	0.1482	0.1482	0.1482	0.1482	0.1482	0.1482	0.1482	0.1482

The final prioritization of ANP method is shown in Table 5.

Table 5: The final prioritization

Rank	Methods
1	Foreign Indirect Investment (IFI)
2	Loan
3	Foreign Direct Investment (FDI)
4	Finance
5	Guarantee
6	Usance

7	Factoring
8	Forfaiting

5. Conclusions

The most important problem for businesses, is its lack of adequate access to finance. Financing and investment are important factors of development .Access to finance is a major obstacle to economic actors. The purpose of this study, identifying and prioritizing the financing methods in Iran. In this study ,we use the Delphi method to identify the important financing methods.The Delphi method is a structured communication technique, originally developed as a systematic, interactive forecasting method which relies on a panel of experts. The results of Delphi method is shown in Table 1.Finally this methods were ranked by the method of ANP.The analytic network process (ANP) is a generalization of analytical hierarchy process (AHP) and can be used to treat more sophisticated decision problems.The final prioritization of ANP method is shown in Table 5. According to the survey results suggest :

1. Develop a strategy for attracting foreign investment.
2. In subsequent studies used more financing methods.

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