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Review

Designing Total Interpretive Structural Model of Entrepreneurial Orientation

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ABSTRACT

Entering today's competitive world, most businesses, especially small and medium-sized businesses (SMSs), have been overwhelmed and frustrated by the monopoly structures of developing economies most of the time because of the recession and the sanctions of powerful countries. The intensity of this tension has increased several times. Thus, the need to focus on entrepreneurial orientation as a strategic principle will be a way to improve and develop these businesses effectively in the economies of societies, especially developing societies such as our society. The purpose of this research is designing a total interpretive structural model (TISM) of the entrepreneurial orientation of SMEs in oil industry. In this qualitative and quantitative methodology, five university experts in the field of entrepreneurship participated in the meta-analysis and Delphi field to identify the research components and propositions from the same research and to reach competence. The identified component theory and propositions were analyzed by Delphi analysis. In the quantitative part, with the participation of 25 managers of SMEs in oil industry and using matrix questionnaires, the identified propositions were stratified into a range of the most influential propositions to the least effective ones. The results of the qualitative analysis section revealed the existence of three main components based on 15 statements. According to the findings in the quantitative section, technologically, the most influential causes in the oriented SMEs in oil industry are the entrepreneurial businesses.

1. Introduction

With the advancement of the technology and the development of businesses based on knowledge and technology, entrepreneurial orientation as a strategy leads to a competitive advantage in the competitive environment. This orientation contributes to changes in

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production techniques and to the approaches to the development of the products and services and enhances the success level of a business in the market (Basco et al., 2019). In the past few decades, entrepreneurial orientation has been proven in the entrepreneurship literature as a factor discriminating enterprises. Entrepreneurial orientation also is referred to as a strategic orientation that is based on methods, approaches, and styles of decision-making and causes enterprises and, especially, managers to act entrepreneurially (Jiang et al., 2018). On the other hand, the vital role of small and medium enterprises (SMEs in oil industry) is increasing due to their power in responding to systematic shocks quickly and owing to their potential in creating jobs and income during the stagnancy of large enterprises. Regulatory institutions such as the World Bank and institutions affiliated to international development, aiming at creating competition, developing the services, and improving the economy of countries, have emphasized the importance of these businesses (Genc et al., 2019). The growth and development of SMEs in oil industry are affected by various factors such as entrepreneurship features and properties of the organization or business environment, in which the presence of a strategic orientation plays a role. D'Angelo and Presutti (2018) refer to SMEs in oil industry as the main source of infrastructure development in competitive fields of the countries' markets and introduce it as a source of innovations and creativity for profitability. In this context, Taylor (2013) took into account the entrepreneurial orientation as an approach to developing SMEs in oil industry in a limited competitive environment in less developed countries and introduced it as a strategy for improving decision-making processes so as to realize the goals of these enterprises, hold the prospect, and create a competitive advantage. Accordingly, entrepreneurial orientation can be an important criterion for how to organize SMEs in oil industry to exploit market opportunities (Karimi and Rahmani, 2016). On the other hand, regarding the goals and missions defined in Iran's 20-year vision plan concerning the support of production by development-based and knowledge-based enterprises with the aim of economic growth, we can refer to the important role of entrepreneurial orientations in developing the SMEs in oil industry in this document. In a part of this document, it is mentioned that the government should act as a supporter and supplier of the resources and help to develop infrastructures of production, enhance the entrepreneurship level to accelerate employment and prosperity of businesses in the society, and create motivation in this scope (Karami and Alibeigi, 2015). Although, the government and parliament adopt bills and laws in line with the 2025 horizon to develop entrepreneurial infrastructures in the private sector, unfortunately, much of these supports have not been implemented, and significant changes have not been observed at least in recent years due to liquidity and banking problems. The lack of competition and technological and knowledge-based infrastructures and fair resources for developing the businesses are perhaps the main causes of stagnancy in small businesses (Feizpoor and Asayesh, 2014). However, regarding the international sanctions, a movement toward the development of SMEs in oil industry based on entrepreneurial orientation should be considered as a strategy, and regulatory institutions and organizations should implement underlying actions in this context through identifying and resolving the obstacles in line with the development of the domestic economy. Therefore, this research first aims to recognize the factors and statements related to entrepreneurial orientation in SMEs in oil industry through a meta-synthesis and using theoretical foundations and specialized expert opinions. Second, it tries to identify the ranking of the least effective to the most effective factors according to the total interpretive structural modeling (TISM). Therefore, the goal of this study is to provide a model of entrepreneurial orientation of SMEs in oil industry.

2. Literature Review

Entrepreneurship involves a wide range of activities such as organizational innovation and creativity (Gartner, 1998), making new viewpoints (Timmons, 1990), discovering opportunities, and risk-taking (Stevenson and Jarillo, 1990). In other words, entrepreneurship can be considered in association with three elements of innovativeness, risk-taking, and proactiveness. Innovativeness refers to the interest in new ideas and experiences and creative processes that may result in the development or provision of a new product, service, or technology. Risk-taking refers to supporting the projects despite the possibility of failure. Proactiveness also indicates preparing to face potential future events and overcome the activities of the rivals (Covin et al., 2006). Entrepreneurial orientation is an overall and sustainable orientation and reflects the thoughts, intentions, and interests of the enterprise related to entrepreneurship (Covin and Lumpkin, 2011). Dess and Lumpkin (1996) defined entrepreneurship that involves processes, operations, and activities of decision-making which leads to achieving a new

opportunity for investment and activity. In summary, entrepreneurial orientation involves a sequence of processes that help respond to the enterprise's question of how it performs entrepreneurship activities (Taylor, 2013). In the past, the factors of entrepreneurial orientation were known with a three-dimensional structure, including creativity, proactiveness, and risk-taking (Hughes and Morgan, 2007).

Genc et al. (2019) studied the effect of the internationalization of SMEs in oil industry on innovation with the mediating role of the market and strategic orientations. They investigated 235 SMEs in oil industry in the UAE. The results of hypotheses testing indicated that enhancing the degree of internationalization of SMEs in oil industry increases the innovativeness level. Putnins and Sauka (2019) investigated why entrepreneurial orientation affects the performance of enterprises and reported that all the three dimensions of entrepreneurial orientation have a positive and significant effect on the performance of enterprises. Feyz and Shaabani (2018) studied the impact of entrepreneurial orientation on the export performance of SMEs in oil industry with the mediating role of organizational learning capabilities and innovation performance. They considered 1000 SMEs in oil industry, active in export and members of the Information Base of Small and Medium Industries, as the statistical population. The results indicated that, in addition to affecting the export power of companies directly, entrepreneurial orientation could indirectly identify latent and unrevealed needs and requirements of customers in the global markets through two mediating variables of innovation performance and organizational learning capabilities, and, in this way, it could promote the export power of companies.

3. Methodology

In this research, which is a mixed method, the meta-analysis approach is used in the qualitative part. Meta-synthesis includes steps to determine components and factors. Perhaps, the most important steps are those presented in the seven-step procedure of Sandelowski and Barros (Andrel et al., 2009), which include a process from the identification of the main roots of the problem by designing the research question to presenting a specific model based on components and factors identified by previous researches. After confirming the components and propositions of the research, Delphi analysis method was employed to determine the theoretical adequacy. Then, in the quantitative part, the most effective factors identified are determined as a hierarchical model using total interpretive structural modeling.

3.1. Research Questions

The research question in the qualitative part is as follows: What are the characteristics of entrepreneurial orientation in SMEs?

The research question in the quantitative part is as follows: What is the most effective statement identified for entrepreneurial orientation in SMEs?

3.2. Statistical Population

Participants in the research are two groups regarding qualitative and quantitative parts. In the qualitative part, the target population consists of 16 university experts in the field of entrepreneurship who participate in the analysis and identification of the components and factors. These individuals were selected through the homogeneous qualitative sampling approach as the members of the panel group. In the quantitative part, the target population consists of 25 managers of SMEs in oil industry based on inquiry from the Industries and Mines Organization. Regarding the requirements of total interpretive structural modeling, this population size is accepted. The purpose of choosing this population is to explain the results of the qualitative part at the level of SME development. Some researchers such as Singh (2011), Malone (2014), Ramesh et al. (2010), and Attri et al. (2013) proposed the desired sample size to be between 15 and 30 individuals and suggested a convenient sampling approach with filters conforming to the nature of the research.

4. Results

To conduct the meta-analysis, the total number of the verified and reliable studies in this research is first specified through information banks and research databases such as SID, MAGIRAN, and NOORSOFR in Iran, and international scientific databases, including ScienceDirect, Emerald Insight, and Online Library according to the following process. In other words, relevant articles or works related to the research purpose were found using the above scientific and research databases. In this step, 15 research works were accepted in terms of content. In the next step, the themes were classified as the components and factors related to the research purpose according to the approach proposed by Stirling (2001). In this approach, first, 15 studies that were accepted based on the ten criteria for critical appraisal, including research purpose, the rationale of research purpose, research design, sampling, data

collection, reflectivity, analysis precision, theoretical and clear statement of findings, and research value were fitted using 16 members of the panel group to achieve a more coherent perception regarding the research nature.

Table 1. Critical appraisal of the identified researches.

Critical appraisal criteria/Research	Basco et al. (2019)	Genc et al. (2019)	Jiang et al. (2018)	Sahoo and Yadav (2017)	Kantur (2016)	Hooi et al. (2016)	Al-Ansaari et al. (2015)	Jia et al. (2014)	Storey and Hughes (2013)	Deshpandé et al. (2013)	Lan and Wu (2010)	Zareei et al. (2018)	Taghvaei and Hejazi (2018)	Hasanzadeh and Naseh ifard (2018)	Karami et al. (2015)
Research purpose	4	3	3	2	3	4	2	3	2	3	3	2	5	3	4
The rationale of the research method	3	4	3	3	2	3	2	3	2	3	3	3	3	3	3
Research design	3	5	3	2	2	4	2	3	2	4	3	2	3	4	4
Sampling method	4	4	4	3	3	4	4	3	3	3	3	4	3	3	3
Data collection method	4	4	3	3	3	4	2	3	4	3	4	3	3	4	5
Generalization	3	3	3	3	1	4	3	3	2	4	3	2	4	3	3
Ethical approaches	4	4	4	3	2	4	2	4	3	3	3	3	3	4	4
Statistical analysis of results	4	3	4	3	3	4	2	3	2	3	3	1	4	4	3
Theoretical capability	3	3	3	4	2	3	3	4	1	5	4	2	3	4	4
Research value	3	4	4	4	1	3	2	4	3	5	5	1	5	4	5
Total	35	37	34	30	22	37	23	34	21	36	34	21	36	36	38

As seen, four items of the research are removed from the 15 items because their scores, given by the panel members, were less than 30. Now, the themes of the research are extracted from the researches accepted according to Stirling's method. The following scoring method is now used to determine the statements of the entrepreneurial orientation of SMEs in oil industry. Based on this approach, all the sub-criteria extracted from the texts of the accepted researches are written as the column headings of a table, and the names of the research authors are written in the row headings. Then, for each sub-criterion used by each author, a check (✓) is inserted in the corresponding row and column. Now, a score is assigned to each column (sub-criterion) based on the total number of checks in the given column. The sub-criteria the scores of which are larger than the average is selected as the research components.

Table 2. Determining the main components of entrepreneurial orientation in SMEs in oil industry.

Researcher	Risk-taking orientation	Competitive orientation	Innovative orientation	Proactive orientation	Technological orientation	Value-based orientation	Productive orientation
Basco et al. (2019)	-	✓	-	-	✓	-	-
Genc et al. (2019)	-	✓	✓	-	-	-	✓
Jiang et al. (2018)	-	✓	-	-	✓	✓	-
Sahoo and Yadav (2017)	-	-	-	-	✓	-	✓
Hooi et al. (2016)	-	-	✓	-	✓	-	✓
Jia et al. (2014)	-	✓	-	-	✓	✓	-
Deshpandé et al. (2013)	-	✓	-	-	✓	-	✓
Lan and Wu (2010)	✓	-	-	✓	-	-	✓
Taghvaei and Hejazi (2018)	-	✓	-	-	✓	-	✓
Hasanzadeh and Nasehifard (2018)	-	-	✓	✓	-	-	-
Karami et al. (2015)	✓	✓	-	✓	-	✓	-
Total	3	7	3	3	7	3	6

Finally, regarding the above discussions, three components, namely financial competitive, financial technologic, and financial productive, were selected. In this step, the validity and reliability indices and the Delphi analysis are used to control the quality of the results. A content validity ratio (CVR) was used to confirm the validity of the questionnaires. For this purpose, all the ten members of the panel group were asked to declare their scores for each sub-component. Since the CVR obtained was larger than 0.62 (the minimum content validity for the ten members of the panel group), the content validity of the research components was confirmed. For assessing the reliability, as specified in the Delphi analysis step, two criteria, namely average and concordance coefficient, were used according to the comments of the panel members in the qualitative part. Each factor the score of which is not above the required level on the seven-point Likert scale is removed, and the reliability index is used based on the results.

5. Delphi Analysis

In this section, the components identified based on the meta-synthesis approach (see Table 3) are investigated to accept or reject the components using the experts' (panel members') opinions based on the average and concordance coefficient. Table 3 represents the results of the Delphi analysis.

It should be noted that because of using the seven-point scale, the lower bound for the desired concordance coefficient and the average are 0.5 and 5 respectively. According to this rule, all the three research components were accepted, and six statements were removed because their concordance coefficient was less than 0.5, and their average was less than five. Furthermore, 14 statements identified in the meta-synthesis stage were merged as pairs regarding the results obtained and the reasoning concepts. These statements are presented in the following table. In this step, the second round of the Delphi analysis is performed to achieve theoretical saturation. All the statements were accepted in this stage, showing the theoretical saturation of the components and the statements of entrepreneurial orientation in the SMEs in oil industry. Based on the components and factors determined, the conceptual model of entrepreneurial saturation in SMEs in oil industry is presented in Figure 1.

Table 3. Analysis of the first round of the Delphi technique.

Component	Concordance coefficient	Accept/Remove	Statement	Average	Concordance coefficient	Accept/Remove
Entrepreneurial orientation at IT capability level	0.75	Accepted	Changing the traditional approaches to human resources	5.10	0.75	Accepted
			Specialized teams to identify the technological requirements of the enterprise	5	0.70	Accepted
			Investment in IT infrastructures	4.95	0.48	Merged
			Boosting the information systems	4.99	0.55	
			Boosting the information gathering gates	4	0.40	Removed
			Development and evaluation of ITC controls	4.90	0.45	Merged
			Matching the business with capabilities	4.95	0.49	
			Convergence between information needs and technological capabilities	5	0.55	Merged
			Enhancing the analytical perception capability of the organization	4.98	0.49	
Entrepreneurial orientation at production level	0.70	Accepted	Changing the production approaches	5	0.70	Accepted
			Changing the traditional warehousing approaches	5.20	0.82	Accepted
			Economies of scale in production	4.95	0.48	Merged
			The agility of the production line	4.99	055	
			Periodical assessment of machinery depreciation	4.80	0.48	Merged
			Controlling costs through periodical check of machinery	4.99	0.50	
			Using support team for production line	3.50	0.30	Removed
			Changing the standard (mass production) to on-time production	5.15	0.80	Accepted
			Controlling material inventory	3	0.25	Removed
Entrepreneurial orientation at competitive level	0.86	Accepted	Enhancing the capabilities of the research and development team	5.10	0.75	Accepted
			Reviewing the weaknesses and strengths	5	0.55	Merged
			Recognizing opportunities and threats	5	0.70	
			Sharing information	3.50	0.30	Removed
			Strategic coalition with a specified goal	5.25	0.82	Accepted

Component	Concordance coefficient	Accept/Remove	Statement	Average	Concordance coefficient	Accept/Remove
			Focusing on more agile and early return strategies	4	0.40	Removed
			Recognizing competitors and their customers	4	0.40	Removed
			Implementation of strategies for differentiation from competitors	5	0.55	Merged
			Localization of customers' knowledge to differentiate them from competitors	4.98	0.49	
			Recognizing the company's position among competitors	5.10	0.75	Accepted

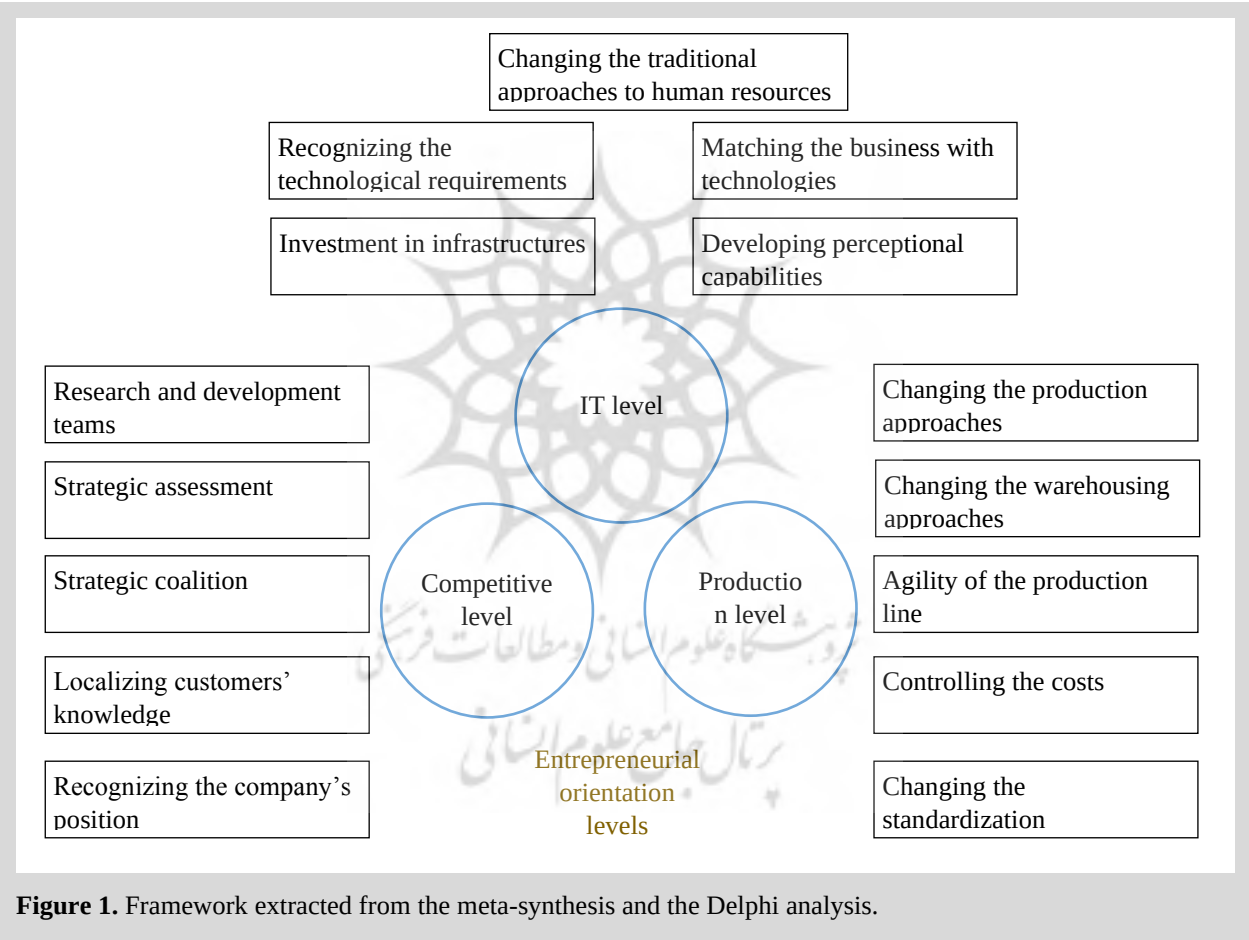

Figure 1. Framework extracted from the meta-synthesis and the Delphi analysis.

6. TISM Results

After the factors are specified by the Delphi analysis, in this step, the total interpretive structural modeling is performed. First, the factors accepted by the Delphi analysis should be coded. To this end, notations X1 to X15 are used to represent the factors. Now, to promote the interpretive structural modeling (ISM) to the total interpretive structural modeling, we should interpret each pairwise comparison by responding to the interpretive question in the previous step. For this purpose, factor *i* is compared pairwise with factor *i* + 1 to factor *n*. For each relation, the response is "Yes" (Y) or "No" (N). In the case of Y, the reason is given, and in the case of N, the participants will be asked to comment on the corresponding pair of variables.

Table 4. Pairwise comparisons between the statements in the matrix form.

No.	Pair	Yes/No	Relationship
X1: Changing the traditional approaches to human resource			
1	X1–X2	Yes ☒ No ☐	Changing the traditional approaches to human resources leads to constituting dynamic specialized teams to recognize technological requirements.
2	X2–X1	Yes ☐ No ☒	
3	X1–X3	Yes ☒ No ☐	Changing the traditional approaches to human resources leads to investment in technological infrastructures.
4	X3–X1	Yes ☐ No ☒	
5	X1–X4	Yes ☐ No ☒	
6	X4–X1	Yes ☐ No ☒	
7	X1–X5	Yes ☒ No ☐	Changing the traditional approaches to human resources leads to the development of perceptional capabilities for technological analysis.
8	X5–X1	Yes ☐ No ☒	

The pairwise comparisons of the statements of entrepreneurial orientation in SMEs in oil industry are presented in Table 4 to obtain the structural self-interaction matrix (SSIM). For pairwise comparison, factor *i* is compared with factor *i* + 1 to factor *n* in pairs.

For each relationship, a response is specified as a Y or N. In the case of Y, the reason is stated. In this case, the interpretive rationale of pairwise relationships is presented as a scientific and rational basis of the interpretation. At this stage, the relationships are entered into the reachability matrix with entries "1" or "0", as seen in Table 5. According to Table 5, cells with entry Y take 1, and those with the entry N take 0. Indeed, this matrix is obtained by converting the structural self-interaction matrix into a matrix with binary entries. Moreover, "1*" implies that if, for example, proposition A affects proposition B, and proposition B also affects proposition C, then proposition A affects proposition C.

Table 5. The diagonal reachability matrix.

Factors	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	Deriving power
X1	1	1	1	0	0	0	1	0	0	1	1	1	0	1	1	9
X2	0	1	0	0	0	0	1	0	0	0	0	0	0	1	1	4
X3	0	1	1	0	1	1	0	0	0	1*	0	0	0	1	1	7
X4	1	1	1	1	1	1	1*	1	1	1	0	1	1	0	0	12
X5	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	12
X6	0	0	0	0	0	1	0	1	1	1	0	0	0	0	1	5
X7	0	1*	1	1	0	1	1	1	1	1	1	1	0	0	1	11
X8	0	1	1	1*	0	1*	1	1	1	1	1	1	1	0	0	11
X9	0	1	1	1*	0	1	1	0	1	1	1	1	1	0	0	9
X10	1	1	1	0	0	0	0	0	0	1	0	0	1	1	0	6
X11	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	6
X12	1*	1	0	0	0	1	0	0	1	1	0	1	1	0	0	7
X13	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
X14	0	0	0	0	0	0	0	0	0	0	0	0	1*	1	0	2
X15	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	3
Dependence power	6	11	8	5	3	9	8	5	7	11	5	7	8	7	6	
*Transitive relationship between the factors																

As seen in Table 5, the conceptual notations assigned based on the mode criterion have been converted into values 0, 1, and 1* according to the abovementioned definitions. Table 6 presents the driving power (total scores in the respective row) and the dependence power (total scores in the respective column).

Now, the antecedent set, the reachability set, and the common elements should be identified to determine the relationship between the statements. The level number and priorities of the variables, as well as the reachability set and antecedent set, are obtained. The reachability set for each variable consists of the variables that can be reached through the given variable. The antecedent set for each variable also includes variables through which the target variable can be reached. Then, the common elements between the reachability set and the antecedent set are specified for each factor. Factors the reachability set of which equals its antecedent set are considered as the priority level. In other words, after determining the antecedent set, the reachability set, and the common elements, the factors with the same reachability set and the intersection set are specified to be the first level or less effective level among the statements of entrepreneurial orientation in SMEs in oil industry. The factors at the first level are now eliminated, and the common elements between the antecedent set and the intersection set are inspected, which are specified as the next level. This process continues until the parts of all the levels are identified.

Table 6. The driving power and the dependence power for each factor.

Factors	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
Driving power	9	4	7	12	12	5	11	11	9	6	7	2	2	2	3
Dependence power	6	11	8	5	3	9	8	7	5	11	5	7	8	7	6

Table 7. The reachability set, the antecedent set, the intersection set, and the levels of each factors.

Code	Reachability Set	Antecedent Set	Intersection Set	Level
X1	1, 2, 3, 7, 10, 11, 1214, 15	1, 4, 5, 10, 11, 12	1, 10, 11, 12	5
X2	2, 7, 14, 15	1, 2, 3, 45, 7, 8, 9, 10, 11, 12	2, 7	3
X3	2, 3, 5, 10, 14, 15	1, 3, 4, 5, 7, 8, 10, 11	3, 5, 10	4
X4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13	4, 5, 7, 8, 9	4, 5, 7, 8, 9	6
X5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13	1, 2, 3, 4, 5, 6	3, 4, 5	6
X6	6, 8, 9, 10, 15	4, 5, 6, 7, 8, 9, 12, 15	6, 8, 9	5
X7	2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 15	1, 2, 4, 57, 8, 9, 11	2, 4, 7, 8, 9, 11	6
X8	2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13	4, 5, 6, 7, 8	4, 6, 7, 8	6
X9	2, 4, 6, 7, 9, 10, 11, 12, 13	4, 5, 6, 7, 8, 9, 12	4, 6, 7, 9, 12	6
X10	1, 2, 3, 10, 13, 14	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1, 3, 10	4
X11	1, 2, 3, 7, 10, 11	1, 7, 8, 9, 11	1, 7, 11	5
X12	1, 2, 6, 9, 10, 12, 13	1, 4, 5, 7, 8, 9, 12	1, 9, 12	5
X13	13, 14	4, 5, 8, 9, 10, 12, 13, 14	13, 14	1
X14	13, 14	1, 2, 3, 10, 13, 14, 15	13, 14	1
X15	6, 14, 15	1, 2, 3, 6, 7, 15	6, 15	2

As seen in Table 7, two statements, namely a strategic coalition with a specified goal (X13) and the localization of customers' knowledge to differentiate them from competitors (X14), are the first and less effective statements of the component entrepreneurial orientation at the competitive level for assessing the entrepreneurial orientation of SMEs. On the other hand, two statements of IT capabilities, namely matching the business with IT capabilities (X4) and developing the perceptional capabilities of technological analysis (X5), along with three statements from the category of entrepreneurial orientation at the competitive level are the most effective factors of entrepreneurial orientation in the SMEs. The three abovementioned factors include changing the traditional warehousing approaches (X7), agility through the economy of scale (X8), and controlling the costs through the on-time assessment of machinery depreciation (X9). It should be noted that the factors were prioritized at six levels of effectiveness from the least effective to the most effective factors, indicating that all the statements identified are among important factors in developing the SMEs in oil industry based on entrepreneurial orientation. According to the analysis presented, Figure 2 shows the model of the leveled statements from the least effective factors to the most effective ones.

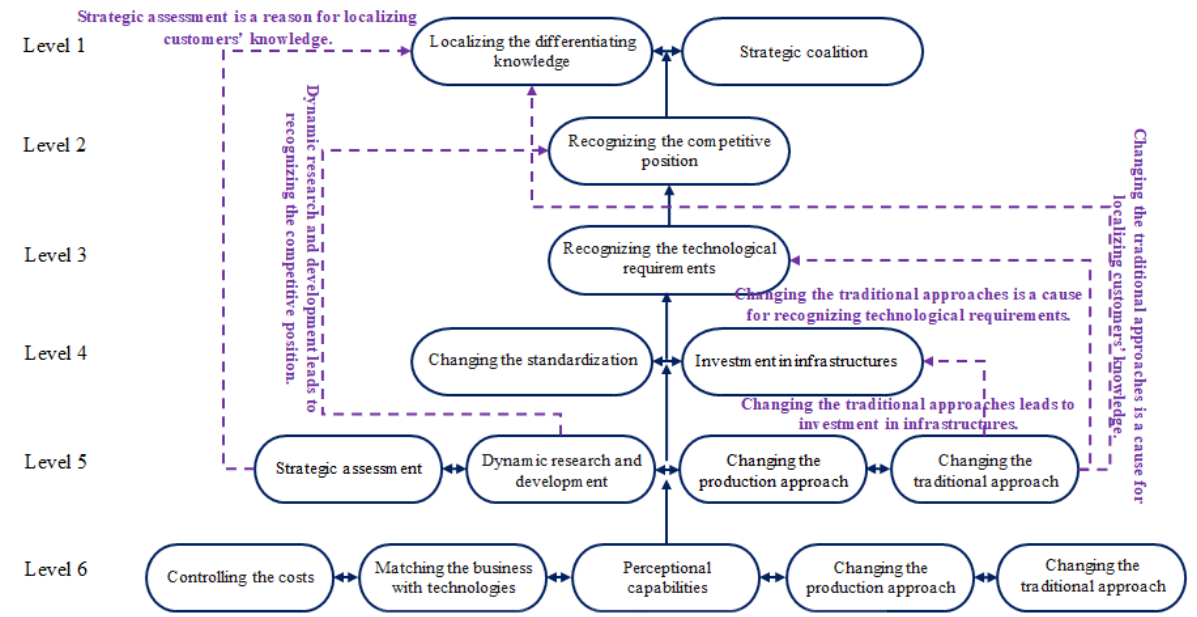

Figure 2. The model of leveled statements.

7. Conclusions

This research aimed to identify the entrepreneurial orientation of SMEs in oil industry using a content analysis based on the meta-analysis approach. After the results were accepted by the experts, managers of 25 knowledge-based organizations were asked to participate in the research. These organizations were identified to be in the category of SMEs in oil industry in terms of size and age according to the information provided by the relevant agencies such as the Industry and Mines Organization and Science and Technology Parks. Fifteen new national and international cases were chosen among the 41 relevant cases of research using the content analysis, and their content was assessed to identify the statements associated with the entrepreneurial orientation of SMEs in oil industry. In this step, three main components, including 28 statements, were selected. The components and the statements were analyzed using the Delphi technique by the checklists prepared to scrutinize them and confirm the reliability of the research. Consequently, among the 28 statements identified, six statements were removed, and 14 statements were merged in pairs until the theoretical saturation was achieved. In the next step, the statements were leveled from the least effective to the most effective factors of entrepreneurial orientation of SMEs in oil industry. According to the results, to focus on entrepreneurial orientation, SMEs in oil industry should give priority to production levels, information technology levels, and development and growth of the market at the competitive level respectively. Indeed, since these enterprises are small-sized, they should be flexible against the changes in the market and should consider new and on-time production approaches rather than mass and standard production approaches by changing the traditional approaches such as human resource perceptions and warehousing. This is because the enterprises engage in mass production only when they reserve a massive share in the market and have strong and more mechanized infrastructures for production. Therefore, they should conduct specialized assessments of their technological needs and focus on effective investments so as to develop their competitive level and build a differentiating strategy in today's competitive and sanctioned markets. For this purpose, the SMEs in oil industry should involve in dynamic research and development activities and strategic assessments based on internal weaknesses and strengths and external opportunities and threats in order to earn a more coherent recognition of their competitive position. Furthermore, in this way, they can enhance their competitive and strategic advantages by developing their performance at the market level. According to the results obtained, it is suggested that SMEs in oil industry should concentrate on entrepreneurial orientation at the production level and, in addition to reducing their production and warehousing costs, should try to implement technology-based approaches so as to accelerate fulfilling the customers' requirements.

Regarding the unbalanced economic conditions, SMEs in oil industry without a dynamic performance face numerous challenges and leave the market gradually.

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