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Designing the acquisition and integration model of knowledge-based and start-up companies using fuzzy method

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ABSTRACT

Background and Aim: Designing a comprehensive model of acquisition and Merger, this is called the processes related to the composition and merger of companies. Acquisition and merger create a contunious competitive advantage, and this is when there is an incompatibility between the resources, capabilities and opportunities available for two companies. Resources include marketing excellence, distribution network, R&D, and surplus operational capacity.

Methodology: The methodology considered in this research is qualitative in which the grounded theory method is used. The statistical population of this research includes experts familiar with acquisition and merger in knowledge-based companies, of which 10 experts were identified. The snowball sampling method continued until the theoretical saturation was reached and is considered as a statistical sample of the research and finally analyzed by FDAHP Method.

Findings: In addition to special emphasis on various factors such as professionalism, performance management, empowerment, etc., this model, considering that the existence of knowledge-based companies increases the scientific capacity and also the synergy of science and knowledge among individuals of society is in opposition to the traditional knowledge system, that is also considered the context and structure of integration in knowledge-based companies,

Conclusion: In the present study, introduces the use of the acquisition and Merger model of knowledge-based and start-up companies as a prerequisite of research for knowledge-based companies in the target community and in this regard considers the presentation of the acquisition and Merger model of knowledge-based and start-up companies.

Keywords: Acquisition and Merger Model, Knowledge-Based and Start-up Companies, Qualitative Method, Fuzzy Delphi method.

1. Introduction

Merger and Acquisition play an important role in shaping the company's strategy as a promoter of competitive position. The great importance and magnitude of these strategic decisions not only affect the shareholders of companies, but also play a significant role in shaping the economy. Mergers and acquisitions are a form of growth in activities and operations that diversifies corporate activities. The merger is particularly interesting for its management, both small and large, for corporate management and policymakers, as well as for merging the owners of both merged and merging companies create values.

In today's rapidly evolving world, the infrastructure of industrial economies has shifted from a resource-centric to an intellectual-centric focus, and as a result, the knowledge factor is becoming increasingly important. In such a situation, a new form of organization is needed. Organizations known as knowledge-based systems and so-called knowledge-based companies that are a vital factor for economic development in a country. In fact, these companies are the engine of growth and development, so the prosperity of knowledge-based companies will lead countries to a sustainable, knowledge-based and leading economy. Our country also needs an economic transformation from a source-based economy to a knowledge-based economy in order to achieve sustainable and inclusive growth and development and global competition. Among these, knowledge-based companies are the engine of development and creating such a transformation. Therefore, in our country, knowledge-based companies have recently become the focus of the country's officials. The various support packages; financial facilities, various exemptions, policy communications, and the adoption of facilitating laws and regulations are all the result of such an approach among policymakers and government officials. But the most important point is the lack of appropriate indicators along with a correct definition of knowledge-based companies based on the conditions of the country. According to experts, the greater distance between definitions and empirical facts in a society, the greater likelihood of misunderstanding and abuse of these concepts. In this regard, unfortunately, the lack of localized and appropriate indicators and a comprehensive definition to identify and define knowledge-based companies based on the main needs of the country's economy, can cause many problems. In fact, if we accept that the engine of economic development and growth of countries in the present era are knowledge-based companies, we must be able to have a correct framework and definition of these companies based on the country's conditions, which we can first properly determine knowledge-based companies, secondly, be able to direct the flow of technology in the country in the right and effective direction, thirdly, prevent the waste of material and supportive resources as well as intellectual capital in ineffective ways, and finally with this definition and based on the needs of a Iran's unique developing country, we can formulate more appropriate policies and strategies in the national innovation system of the country.

For many years, mergers and acquisitions have played an important role in shaping the company's strategy as a way to enhance companies' competitive position. The great importance and magnitude of these strategic decisions not only affect the shareholders of companies, but also play a significant role in shaping the economy. Mergers and acquisitions are a form of growth in activities and operations that diversifies corporate activities. Mergers are particularly important for corporate management and policymakers because of their small and large impacts, and they also create value for owners of both merged and merging companies.

Despite the many benefits of merging companies, such as knowledge-based companies, there are businesses that actually sell their knowledge. The issue of "knowledge-based goods and services" is also the result of such an approach. Many global organizations and institutions have offered various definitions of "knowledge-based goods and services" based on this approach. Due to the ease of this, the approach of using the type of product as an identification indicator of knowledge-based companies has become more common. This means that the more knowledge-based the goods or services of a company, the more knowledge-based that organization will be.

Accordingly, several programs and actions have been formed in the agenda of the country and knowledge-based companies and have been included in their agenda, which is based on the wisdom that merger in knowledge-based companies of the country and other related parts, the need to respond to the knowledge sector as a whole and ensure greater coordination and coherence in acquisition and merger

policies is essential. Looking at this issue and creating a collective effort and cooperation towards acquisition and merger, it can be seen that one of the main and basic preconditions for the implementation of these policies, create merger and convergence in knowledge-based companies as well as the knowledge sector. It needs proper interaction with other sectors and related systems, which can lead to the synergy of knowledge-based companies and can be a factor in increasing the value of knowledge. Therefore, in this study, we study the design of acquisition and merger model in knowledge-based and start-up companies, to consider the challenges and obstacles of acquisition and merger with a systemic view, and a comprehensive model of acquisition and merger in companies. Finally, the answer to the question, what is the pattern of acquisition and integration in knowledge-based and start-up companies? Is the main purpose of this research.

2. Leterature Review

Considering the creation of value using this Mergers and acquisitions method, it can be considered as one of the best methods, methods and strategies of generating profit for shareholders, like other effective investment decisions made by the company. One of the most opular models of value creation in organizations is Porter's value chain model, which is explained below.

2.1. Porter's Five Force Model

Porter shows the competitive structure of the corporate environment in five dimensions, as shown in Figure 1. These five dimensions are:

1. Supplier power. An assessment of how easy it is for suppliers to drive up prices. This is driven by the: number of suppliers of each essential input; uniqueness of their product or service; relative size and strength of the supplier; and cost of switching from one supplier to another.

2. Buyer power. An assessment of how easy it is for buyers to drive prices down. This is driven by the: number of buyers in the market; importance of each individual buyer to the organisation; and cost to the buyer of switching from one supplier to another. If a business has just a few powerful buyers, they are often able to dictate terms.

3. Competitive rivalry. The main driver is the number and capability of competitors in the market. Many competitors, offering undifferentiated products and services, will reduce market attractiveness.

4. Threat of substitution. Where close substitute products exist in a market, it increases the likelihood of customers switching to alternatives in response to price increases. This reduces both the power of suppliers and the attractiveness of the market.

5. Threat of new entry. Profitable markets attract new entrants, which erodes profitability. Unless incumbents have strong and durable barriers to entry, for example, patents, economies of scale, capital requirements or government policies, then profitability will decline to a competitive rate.

These five forces do not have equal power in an industry or between industries. Their relative strength may change over time. In fact, forces such as the threat of new entry or the threat of substitutions are essentially dynamic and expectant in nature, while competition rivalry and the supplier power and buyer's power are more stable and reflect current realities (Porter, 2002).

The strengths of each of the five competing forces are shown by a series of factors listed in Table 1. In this regard, assessing the attractiveness of the market depends on assessing the strengths of these factors.

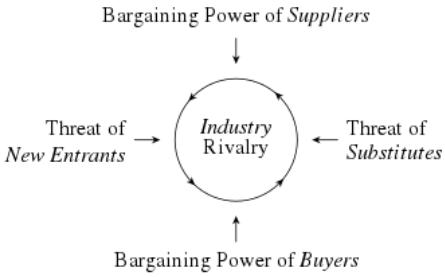

Fig 1.A graphical representation of Porter's five forces

Table 1. Power Determinants of Five Competitive Forces

Competitive force	reinforced by
New entry	Low level of barriers to entry (economic scale, capital needs)
Product substitution	Relatively low price of alternative product, buyer willingness to replace product, low product change costs for buyers
The bargaining power of the supplier	High costs of supplier change for buyers, lack of alternatives, supplier focus
The bargaining power of the buyer	Buyer focus, low cost to other sellers
Competitive rivalry	Low industry growth, high fixed operating costs, low product segregation

2.2. Company strategies to enter the market

The company can select specific markets using strategic analysis of its situation and choice. In this case, the type of entry into the market is actually a choice between several alternatives: natural growth, acquisition or continuity strategy. The choice of entry type depends on a number of factors:

- Level of competition in the host market;
- Startup risk in Greenfield investments;
- Availability of organizational resources for natural growth;
- Ability to benefit from added value;
- Advantage of entry speed (Casa et al., 2012).

If the level of competition in the host market is high and there is excess capacity, then choosing a new capacity is likely to lead to retaliation. In this case, the acquisition of the existing company reduces the risk of retaliation. Investing in startups is often riskier than acquiring an Ongoing operating company, or for a variety of other reasons it may not be possible. However, it may avoid integration problems with acquisition. The company may not have all the resources and capabilities necessary to compete effectively in the host market. Access to these resources and capabilities may only be possible through acquisition. The company's ability to take advantage of the added value and entering a new market depends on the organizational form of this entry. The ability to benefit is maximized through entry with natural growth and becomes more difficult through joint acquisition and investment. Acquisition is the fastest way to enter a new market, and it offers a strategic advantage when " Time to market" is important. Acquisitions, however, may be more costly because of the control premium that the current owners of the target company must pay. Also, acquisition may not be possible if the right goals are not available. Therefore, choosing the type of entry based on accurate assessment is very important (Casa et al., 2012).

2.3. Acquisition as a selection strategy

The strategy chosen by a company indicates the type of acquisition and the profile of the target company. Market penetration strategy is the acquisition of the target company of the same product, which is a horizontal integration. With the development of the market, the goal acts as a conduit for the distribution of the company's current products, this is the same as cross-border acquisition. The goal in acquiring product development is to sell complementary products and increase the range of products which can sell in its current markets. In a diversification strategy, the goal is actually an unrelated business, which is like a Conglomerate merger. the acquisition including elements of horizontal development, product development and market (Maadi Rudsari et al., 2019).

2.4. Value creation in different types of acquisition

When a company makes an acquisition, it acquires a set of tangible and intangible resources and capabilities, all in a unique organizational form. Acquisition also leads to closer to the acquired and the acquiring. Acquisition and merger create a lasting competitive advantage, and this is when there is a mismatch between the resources, capabilities and opportunities available to the two companies. Resources include marketing excellence, distribution network, R&D, and surplus operational capacity. Some of these resources are in the form of strategic assets such as market power and barriers to entry such as experience curves or size. As mentioned, a firm's distinctive capabilities may be a source of sustainable competitive advantage, and these capabilities include

the firm's architecture, capacity for innovation, and branding. The architecture of the company includes the management style and its reputation in a different way than the reputation of its products (Mohammadi and Hajipour, 2018).

2.5. Analysis of the value chain

Analysis of value chain is generally performed at the business unit level and aims to identify the cost structure of the company's activities. Porter (1985) defines a company as "a set of activities performed to design, manufacture, market, present, and support a product." Each of these activities contributes to the cost structure of the company. Some of these activities, such as design and customer support differentiate the company's offers from its competitors' offers (Porter, 2002).

Value Chain The breakdown of the value of total output (sales revenue) to the profit margin and its costs is shown in Figure 2. These costs are broadly divided into developed costs based on initial activities and support activities. These costs are then broken down into different operating costs. Initial activities are those activities that are called in order to build a product, sell it and transfer it to the buyer and after-sales service. Examining a company's value chain allows the manager to understand cost behavior as well as identify potential sources of segregation. According to Porter, the company guarantees its competitive advantage by separating the value chain. Competitive advantage based on cost (for example, the least expensive producer) is reflected in the value chain (an example of this is in terms of economies of scale), Similarly, product segregation is reflected as a competitive advantage in the value chain (for example, in technology development). The company can build or improve its competitive advantage by rescheduling the value chain. The company's distinctive capabilities are described by Ki. For example, innovation is clearly related to technology development (Porter, 2002).

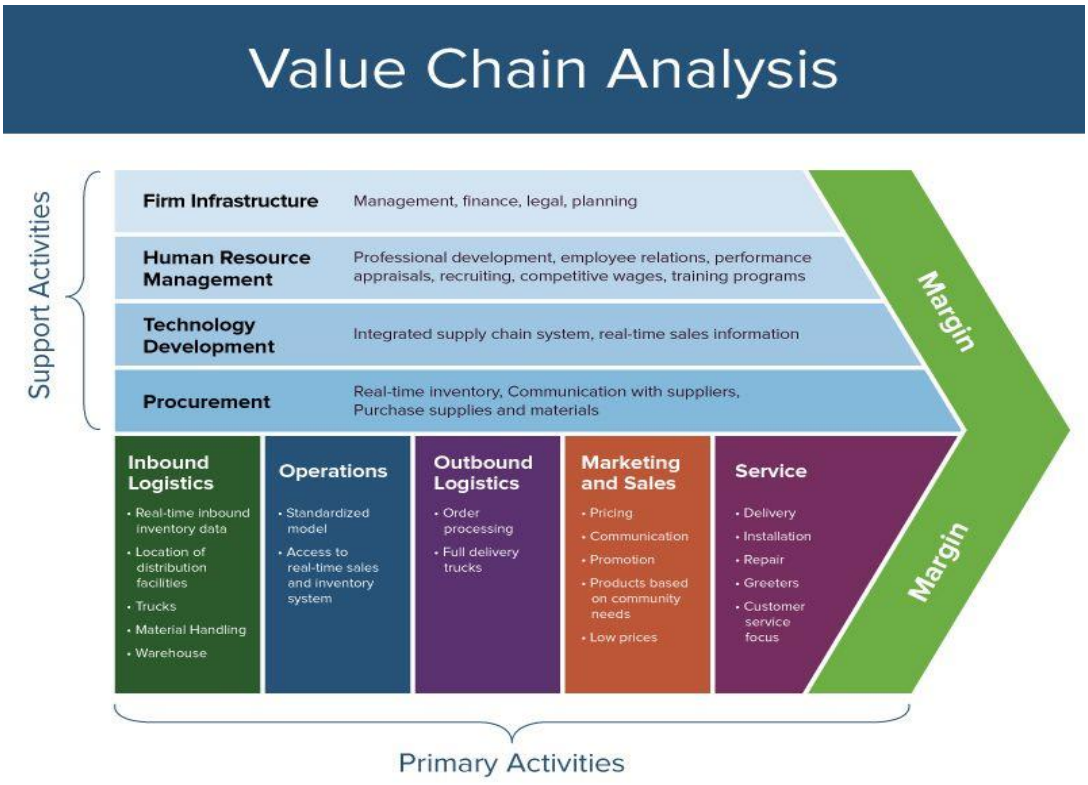

Fig 2. Porter value chain analysis

2.6. Acquisition

Acquisition means the operation in order to reach of effective control by one company over the assets or ownership of another company, without any combination. Therefore, at the time of acquisition, two or more independent companies may still retain their rights separately, but there will be changes in the control of these companies. In this regard, it can be said that the acquisition can take control of the target company. Commercially, the term acquisition is different from the term possession, and both are used separately. In the UK, for example, ownership of 50% or more of equity is considered an acquisition, while the acquisition of more than 90% of a company can only be considered an acquisition, as shareholders may have the remaining 10% to sell depending on their desire. The quantity / value threshold of stocks is generally set by trading shareholders. The more skilled and organized these shareholders are, the less control new shareholders will have. Thus, more advanced economies are likely to have more developed economic thresholds in order to control a company's business. This distinction creates ambiguities in practice. What is known as acquisition is sometimes called merger so that the managers of the acquired company do not lose their position (Kaboli et al., 2020).

2.7. merger

Literally, a merger is the merging of two legal entities and the formations of a single legal entity, which can be manifested by the combination of their names or by the formation of a new legal name, and begin its activity. Merger and acquisition are divided into three categories: horizontal, vertical, and composite. Horizontal mergers include companies that produce one or more similar or related products in the same market. In other words, they have similar business activities. The acquisition of a chemical company by another chemical company is considered a horizontal merger. Vertical mergers occur between companies that have a buyer-seller relationship prior to the merger. In other words, a company merges with a company before the production process (supplier of raw materials) or after (distributor or consumer). Integrating a furniture manufacturer with a sofa distribution network is a form of vertical integration. Composite Mergers result from the merger of two or more companies in unrelated industries. Combination of the furniture manufacturer with a book publisher is a composite merger and is divided into three categories: Product development, market and compound. Product development merger includes companies that do not produce or distribute and sell products in terms of performance directly. Market development involves companies selling similar products in different geographic markets. Combined mergers involve the integration of two companies that are inherently related. However, in relevant laws and regulations, a merger is defined as a combination of obligations or merging one or more companies together and becoming another company. The merger incorporates all of the assets and liabilities of one or more companies, but does not include transferable rights and obligations, such as personal service contracts. Thus, one or more companies may merge with a pre-existing company (through acquisitions) or form a new company (through mergers). However, one of the main features of mergers (either through acquisition or mergers) is that the ownership of companies and their operations are combined (Kaboli et al., 2020).

2.8. Venture capital

Venture capital is one of the most common methods of financing these companies in the world in which the investor enters into partnerships with entrepreneurial companies and in addition to influencing financial and investment decisions, also participates in their management and marketing decisions (Soorshajani and Mohammadi, 2016). .

Venture capital is an investment that is given in exchange for shares to entrepreneurial and start-up companies with high growth potential, along with management assistance. Although VCs account for a relatively small share of total investment, they are usually focused on the most innovative areas of the economy. Experimental research findings in the United States show that a significant amount of industrial innovation has been funded through VCs. Many large and successful companies today have taken advantage of venture capital in the early stages of their operations, such as Federal Express, Apple, Amazon, Google, Oracle, Microsoft, Facebook, Intel and Yahoo (Asakareh et al., 2005).

2.9. Knowledge-based Company

Relying on its shareholders and partners, it has a high level of technical knowledge and offers products using state-of-the-art technology. Requirements of a proper structure for proper management and appropriate to the capabilities include relationships based on trust, extroverted interactive communication, inclusive emotional relationships, informal structures and team use and reward to the team. Some of the structural requirements for effective management of knowledge-based companies are:

1) Reducing boundaries: Knowledge-based companies need to get rid of the boundaries of separating boundaries and create a common thinking framework through which to create organizational identity and relationships based on trust. In this case, the storage of organizational knowledge can extend beyond the limits of physical boundaries. Doing so enables the organization's employees to access information without hindering formal structures and controls. Informal relationships play an important role in blurring these boundaries.
2) Fluidity: Effective knowledge management requires knowledge flow, not accumulation, so companies must be able to streamline knowledge flow and allow knowledge to have a profound effect on performance.
3) Interaction: Effective knowledge management relies heavily on managing tacit knowledge.
4) Flexibility: In order to be able to produce knowledge-based outputs effectively, the structure must be flexible, not deterministic, in order to be able to reorganize knowledge in a timely manner and to meet relevant individuals and companies(Amiri et al., 2014).

Knowledge plays a prominent role in the activities of individuals and organizations, and intellectual capital is gradually replacing tangible capital in earnings. Efforts to identify the type of management and application of knowledge are accelerating day by day and have now become a top priority for many organizations and companies. Due to the economic importance of knowledge-based resources, more attention is paid to the acquisition of knowledge and management of knowledge resources. In this regard, understanding the concept of knowledge-based organization is important (Rahman Seresht and Zabihi, 2016). In Iran, the same approach is now in place in the Vice President for Science and Technology to identify and support knowledge-based companies and support them.

3. Research Methods

The research method in this research is qualitative, based on the studies conducted in relation to the acquisition and merger in knowledge-based and start-up companies and the basic and general criteria. Available experts based on the criteria derived from the research objectives in a judgmental manner were chosen. Simultaneous data collection and analysis in content analysis gives the researcher the opportunity to think about how and where to collect data, which is called judgmental or theoretical sampling, and suggests that items be selected in such a way that On the one hand, increase the quality of concepts and categories, and on the other hand, determine the next example and the direction of movement.

The criteria for selecting experts were the relevance of university education, the relevance of the field of study and research at the university, and having executive and managerial background in related fields. Based on the results of the initial interviews and the documents reviewed and the guidelines provided by the interviewees, other experts have been selected. The interviews were open in the first sessions and continued in the following sessions in a semi-structured manner (as the relevant issues were identified). A total of 10 interviews were conducted with experts to finally obtain theoretical adequacy. Theoretical adequacy is achieved when the collection of any data does not help to increase the concepts in a new category or category. The data obtained from the interviews were used along with the data obtained from the review of literature and interpreted the interviews conducted with experts in the field of acquisition and merger in knowledge-based companies. In this study, interviews were conducted with knowledge experts and knowledge-based companies in Tehran. The focus of the interviews was on the opinion of experts on the concept of acquisition and merger model in knowledge-based companies.

Initial interviews were conducted after extracting the main components from scientific internal and external sources and texts in order to identify the main categories. At the same time as conducting the interviews, the researcher identified individuals who,

during the data analysis process, could provide specific insights into underdeveloped or less developed topics and categories. With the identification of topics and the formation of primary categories, the second round of interviews began with the aim of developing this group of categories, which will be discussed in the continuation of the process of analysis and coding of interviews.

In this study, three types of sampling proposed by Strauss and Corbin (1998), include open sampling, communication and diversity sampling and discriminant sampling were used to collect and assist in data analysis. Based on this, the researcher conducted 10 interviews and analyzed their text in three rounds. In the first round, the researcher, after analyzing the text of 7 interviews, succeeded in identifying the key categories. After analyzing these interviews and reviewing a wide range of studies conducted by previous researchers, questions arose about the main phenomenon of the research. Therefore, the researcher conducted the second round of interviews. In this period, in order to ensure the theoretical saturation of the categories, the researcher, considering the main phenomenon and related sub-categories, conducted 3 more interviews on the agenda. In these three interviews, the researcher focused on questions, which helped him to understand the main nature of the research phenomenon and its relationship with the corresponding categories. Finally, after identifying the categories and ensuring their theoretical saturation, it was the turn of the third round of interviews. At this stage, the researcher tried to provide a basis for refining the theory and presenting his conceptual model by finding theoretical examples of the categories and the relationships between them by conducting a questionnaire in the form of items extracted from the interviews and sending them to the interviewees. The interviews began with questions about the "Acquisition and Merger Model in Knowledge-Based and Start-up Companies" (open and semi-structured interviews) followed by questions based on the interviewees' answers. The duration of each interview ranged from 60 minutes to a maximum of 90 minutes. In some cases was done in two sessions.

4. Findings

In this research, interviews of experts in various fields of acquisition and merger in knowledge-based companies were collected and analyzed using three coding methods including open coding, axial coding, selective coding (theorizing stage), and information data. The data obtained from information sources (interviews, observations and review of previous research, documents and texts ...) are tabulated according to the coding rules. Coding in grounded theory is a type of content analysis that seeks to find and conceptualize contentious issues that exist among the mass of data. In fact, during the analysis of an interview, will find that the interviewees use words and phrases in their conversations that highlight the debatable topics about the phenomenon under study. As mentioned before, in the current research, the researcher has taken the necessary advantage to analyze all the trends of grounded theory (open, axial and selective coding, as well as recording notes and drawing diagrams). Below is a small sample of this analysis for expert study.

Table 2. Initial Coding of the First Interview

1)	Obligation to organizational behavior
2)	Increasing individual abilities
3)	Knowledge sharing
4)	Increasing association of knowledge
5)	Creating more creativity and innovation in people
6)	Paying attention to the psychological characteristics of the employees
7)	Feeling satisfied in teamwork
8)	Establishing more relations and mutual interaction
9)	Elite consensus
10)	Creating more knowledge in works

Table 3. Secondary coding of the first interview

مقولات (طبقه فرعی)	کدهای مفهومی	کدهای ثانویه
creativity and innovation	creativity	Creating more creativity and innovation in people
		Create more survival to produce and optimize it
		Creating an innovative and leading economy
	Knowledge management	Production of knowledge brands
		Knowledge sharing
		Increasing association of knowledge
		Create more knowledge in things
		Solve organizational problems with up-to-date knowledge
		Making more use of science and knowledge
Participatory Management	team work	Elite consensus
		Feeling satisfied in teamwork
		Build more relationships and mutual interaction
		Creating wealth centers
		Creating focal groups of modern thinkers
Science and Technology	Technology management	Growth and promotion of technology and optimization in them
		Avoid selling raw materials in businesses
organizational behavior	Individual psychology	Obligation to organizational behavior
		Increase individual abilities
		Pay attention to the psychological characteristics of employees

Table 4. Formation of general classes of categories

The main classes	Categories (Subcategories)
Professionalism	Ethical Organizational Commitment Meritocracy responsibility Orbital value Motivation
performance management	performance evaluation
Empowerment	Education Futurism Planning knowledge management
creativity and innovation	creativity and innovation knowledge management training elite Modeling
organizational behavior	Individual psychology Organizational Commitment personal attributes Organizational Justice Ethicism Positive thinking
Technology management	Science and Technology Orbital science

First, by reviewing articles and dissertations and interviewing experts, a list of factors in the field of knowledge-based companies in the literature review were identified and then, using knowledge-based interviewing methods, experts were identified to saturation stage. According to the results, 43 variables were identified.

4.1. Compilation of an initial questionnaire and testing it in a pilot study:

In this step, we first identified the list of factors that were effective in knowledge-based companies by using the snowball method. Then an initial screening was performed and duplicate or synonymous indicators were removed, which finally identified 43 indicators. After identifying the research indicators, research questions were designed based on these

indicators. The questionnaire designed at this stage is called the initial questionnaire or the first round of the Delphi method questionnaire. In this research, due to the limitations in presenting the contents, a small part of it is given.

Table 5. Consolidation of expert opinions for the first round questionnaire

questions	Spectrum of importance				
	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)
1. Orbital ethics				8	20
2. Organizational commitment			5	14	9
3. Meritocracy		2	5	9	12
4. Responsibility			3	12	13
5. Orbital value		2	6	9	11
6. Motivation			4	8	16
7. Encouragement			6	10	12
8. Freedom of action	1	1	5	10	11
9. Organizational tolerance		2	6	15	7
10. Trust building			4	15	9

4.2. Check whether the data is normal or abnormal

In this study, based on the amount of data strain and skewness, we examined whether the data was normal or abnormal. As can be seen in Table (6), the statistical values for the skewness and elongation index are in the range (+2, 2-). Therefore, according to the results of the table below, the normality of the data related to each question can be accepted.

Table 6. The amount of elongation and skewness of the questionnaire questions

	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
q1	-1.686	.441	1.614	.858
q2	-.219	.441	-.642	.858
q3	-.699	.441	-.541	.858
q4	-.498	.441	-1.234	.858
q5	-.920	.441	-.089	.858
q6	-1.224	.441	1.939	.858
q7	.061	.441	-.619	.858
q8	-1.413	.441	1.770	.858
q9	-.526	.441	-.524	.858
q10	.303	.441	-1.432	.858

4.3. Calculate the fuzzy value of each research question

In this step, we calculate the fuzzy value of each research question using the opinion of experts.

This process continued in the distribution of the questionnaire and the calculation of skewness and Cronbach's alpha and the calculation of the biphasic questions and the explanation of the questionnaire up to three rounds. And to check the condition of consensus or agreement of experts, as agreed at the beginning, at least 70% of experts must give the same answer to one of the answer options for each question, which we have examined in Table (8).

Given the achievement of the stop condition, the remaining important indicators are listed so that the next stage of the research can be used to evaluate the merger and acquisition in knowledge-based companies. The list of important indicators identified in order of priority is presented in Table (9).

According to the results obtained by experts and their agreed consensus in knowledge-based and start-up companies, the indicators of ethics, creativity and innovation are ranked first, adherence to the law is

ranked third, meritocracy and modeling ranked fourth, Motivation, education, knowledge management and science orientation are in the sixth rank and the rest of the indicators are in the next ranks. According to the results obtained from the fuzzy Delphi method, the research model will be modified and determined as follows.

Table 7. Fuzzy value and de-fuzzy value of the first questionnaire

questions	Fuzzy value of each question			D-fuzzy value of each question	Status of questions
	L	M	U		
1	4	4.85095	5	4.425475886	confirmed
2	3	3.46974	5	3.234867984	confirmed
3	2	3.30197	5	3.150986264	confirmed
4	3	3.90712	5	3.703561364	confirmed
5	2	3.05117	5	3.325583683	confirmed
6	3	4.13828	5	4.069141884	confirmed
7	3	4.08225	5	4.041122894	confirmed
8	1	2.97663	5	2.988313735	disapproval
9	3	4.12005	5	4.060025459	confirmed
10	3	4.36103	5	4.180513375	confirmed

Table 8. Condition of consensus or agreement of experts

questions	Spectrum of importance					The largest amount of aggregation	The degree of consensus	Status of consensus
	Very low (1)	Low (2)	Medium (3)	High (4)	Very high (5)			
1.				3	25	25	89.285714	Consensus
2.			2	3	23	23	82.142857	Consensus
3.			2	6	20	20	71.428571	Consensus
4.			3	4	21	21	75	Consensus
5.			1	5	22	22	78.571429	Consensus
6.			2	6	20	20	71.428571	Consensus
7.		3	12	9	4	12	63.25410	Lack of consensus
8.			2	5	20	20	71.428571	Consensus
9.			3	20	5	20	71.428571	Consensus
10.			2	4	22	22	78.571429	Consensus

Table 9. Prioritize important indicators

no	questions	Grade	The degree of consensus	Status of consensus
1.	Ethical	One	89.28571	Consensus
15.	creativity and innovation	One	89.28571	Consensus
13.	Adherence to the law	Three	85.71429	Consensus
2.	Meritocracy	Four	82.14286	Consensus
17.	Modeling	Four	82.14286	Consensus
5.	Motivation	Six	78.57143	Consensus
10.	Education	Six	78.57143	Consensus
16.	knowledge management	Six	78.57143	Consensus
19.	Orbital science	Six	78.57143	Consensus
21.	Efficiency and effectiveness	ten	75.71429	Consensus
4.	Orbital value	Eleven	75	Consensus
11.	Planning	Eleven	75	Consensus
22.	Customer Orientation	Eleven	75	Consensus
20.	team work	fourteen	73.57143	Consensus

no	questions	Grade	The degree of consensus	Status of consensus
3.	responsibility	Fifteen	71.42857	Consensus
6.	Building trust	Fifteen	71.42857	Consensus
8.	Superiority	Fifteen	71.42857	Consensus
9.	performance evaluation	Fifteen	71.42857	Consensus
14.	Financing	Fifteen	71.42857	Consensus

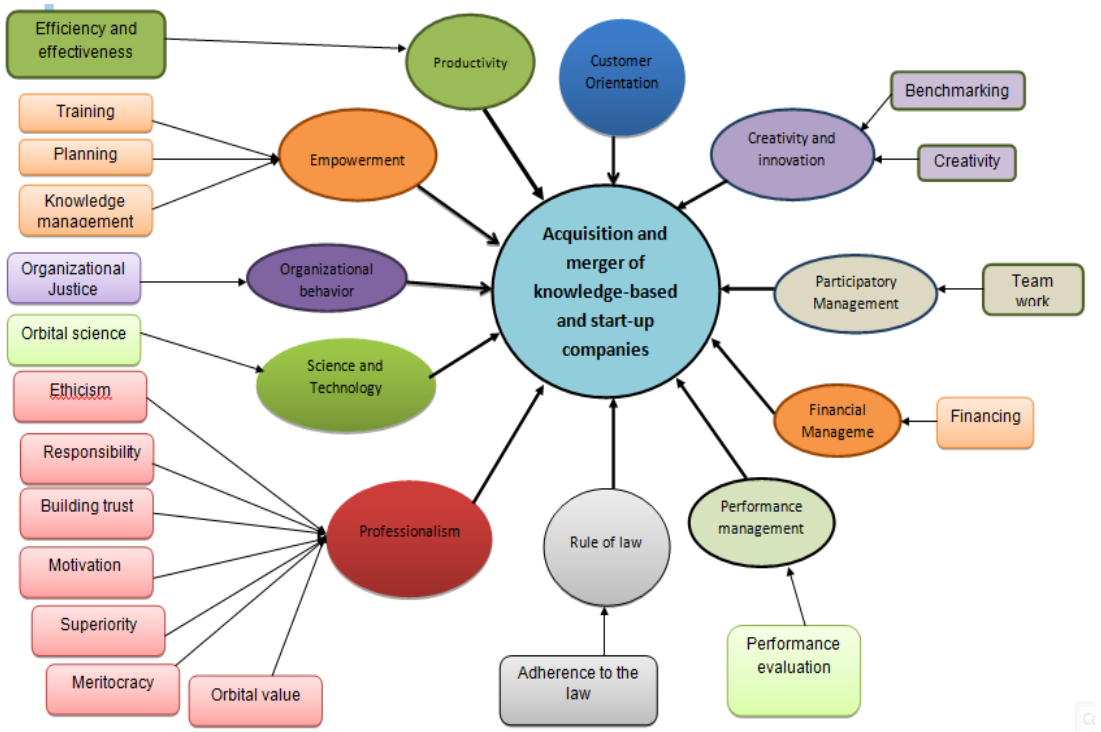

Fig 3. Research Model

Conclusion

Mergers and acquisitions play an important role in shaping the company's strategy as a promoter of competitive position. The great importance and magnitude of these strategic decisions not only affect the shareholders of companies, but also play a significant role in shaping the economy. Mergers and acquisitions are a kind of growth in activities and operations that diversify the activities of companies. The more skilled and organized the shareholders are, the less control the new shareholders will have. Thus, more advanced economies are likely to have more developed economic thresholds to control a company's business. This distinction creates ambiguities in practice. Mergers are particularly attractive to corporate management and policymakers because of their small and large impacts, and they also create value for owners of both the acquiring and the acquired company. Considering the creation of value using this method, it can be considered as one of the best methods, (like other methods and strategies of generating profit for shareholders made by the company). The main purpose of this study was to investigate and identify the components affecting the pattern of acquisition and merger in knowledge-based and start-up companies. According to the results of fuzzy network analysis calculations and output obtained in most of the sections, it is possible to prioritize the components in the main groups and criteria, which at the general level, the relevant criteria can be determined. The final weight matrix shows the main criteria. According to the results, the order and

prioritization of these criteria in influencing the pattern of acquisition and merger in knowledge-based and start-up companies can be shown as follows (from the highest to the lowest priority, respectively): 1) Creativity and innovation; 2) technology; 3) professionalism; 4) Empowerment and 5) Organizational behavior. From the discussion, it can be concluded that acquisition and merger is an efficient and effective concept, but to achieve it, strict principles and rules in this way must be properly implemented. According to the studies conducted by successful countries in this way, which have taken steps from various governments around the world regard to the rules, laws, regulations and their capacity and capabilities in the way of acquisition and merger, which are fully Be able to establish their acquisition and merger structure based on the principles of acquisition and integration.

Regarding the comparison of the findings of the study with other findings of researchers, it should be noted that this study uses most of the effective components presented to provide a pattern of acquisition and merger of knowledge-based and start-up companies by other researchers, including Starbek (1992). Comparing the term knowledge-based with conventional economic terms such as capital-based, she states that in knowledge-based companies, the most important input in the various processes of these companies is knowledge. Alveson (2004) considers a strong knowledge base (as an input) as a key feature in defining these companies. Other researchers have identified knowledge-based companies as the main inputs, focusing on terms such as knowledge infrastructure, knowledge workers, and knowledge-based professionals (Detilo, 2004). In contrast, a wide range of researchers have indexed knowledge-based companies based on the output of these companies (Relander, 2006; Zack, 2003). The European Union has considered indicators for small and medium-sized technological companies (knowledge-based) which are: 1) Innovation input index 2) Innovation efficiency index 3) Innovation output index (Kanani, 2004) which has tried to develop these models. Therefore, it can be said that it has taken an effective step to better understand the factors affecting the acquisition and merger pattern of knowledge-based and start-up companies. Then, the analysis of the proposed model in the field of acquisition and merger in the global management literature at the company level, it is necessary to mention that acquisition and merger can be considered a strategic concept in various dimensions. 1) Acquisition and merger, which is based on utilitarianism, profitability and secularism. This type of acquisition and merger basically pays attention only to the material dimension and does not pay attention to social affairs that are centered on human beings and with the approach of civil society. 2) Acquisition and merger, which, in fact, is a clear example and its external objectivity is attention to the community-oriented environment and attention to laws and regulations. According to the idea of preserving the public interest, this method of acquisition and merger does not only pay attention to the issues of this world (materialism and secularism), but also to sustainable development and the preservation of the public interest

suggestions

According to the research findings from the point of view of experts in order to develop acquisition and merger in knowledge-based and start-up companies, it is recommended that the following items be on the agenda of knowledge Trustees and managers in this regard. Is presented below:

- Creating orbital ethics in accordance with knowledge standards
- creating the necessary bases for designing creativity and innovation in the knowledge sector
- Development of criteria and indicators of adherence to the law in the field of knowledge acquisition and maintenance of related laws
- Attracting skilled and empower people for meritocracy in the knowledge sector
- Using the right structure for benchmarking in accordance with the implementation of knowledge management in the country
- Creating the right infrastructure to motivate the trust and support of top managers in the knowledge sector
- Creating the right thinking of education based on it among top managers in the knowledge sector
- Creating change and transformation in order to accept the components of knowledge-based companies in the knowledge sector

- Knowledge management in order to solve problems related to the part of knowledge
- Establishment of research and development centers in the direction of science orientation and increase the efficiency of the knowledge sector
- Increase and create more efficiency in the efficiency and effectiveness of designs and create a platform and executive infrastructure in knowledge-based companies
- Strengthening the value-oriented sector with people and the popularity of knowledge sectors
- olding joint periodic meetings between different managers to connect and plan in the knowledge department
- More efforts to attract knowledge and allocate more value in direction of customer orientation and remove barriers to their resentment and create knowledge stability
- Facilitate the mechanism of team working with different companies in order to create more cooperation in acquiring knowledge
- Institutionalizing accountability and creating the strategies related to it
- trust Building while maintaining human value in order to familiarize and improve employee performance in various areas of knowledge
- Create a mindset of excellence in different areas of knowledge and turning it into a learning and creative organization
- Use the conceptual model obtained in this research to the acquisition and merger of knowledge-based companies
- Reviewing performance appraisal processes in accordance with the needs of the knowledge community.

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