



# Factor Analysis of Organizational Core Competencies under Studied in Isfahan Foolad Technique Co.

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## ABSTRACT

Considering that today's objective of organization is profitability and reaching stable competitive advantage, so organizations can smooth path to stable competitive advantage through identifying their core competences among other organization's capabilities and developing strategies based on them. Since core competencies including rareness, sustainability, controllability, being non-copy, being irreplaceable could be competitive advantage core for organization, so identifying, analyzing more correlated factors and grouping them can help to reinforce them in organization and smooth the path to reaching competitive advantage. Therefore, in current study, core competencies of Isfahan Foolad Technique Co. are subjected to factor analyzing in a 42 factors questionnaire from these competencies that were extracted from other organizational capabilities, by 5 competitive advantage indicators through computing total Cronbach's alpha 0.912, mean 0.89 and variance 1.023. Each element is scored by each indicator based on Saati spectrum by 45 managers and experts of organization, where results of factor analysis show 42-fold factors are grouped based on rareness indicator to 12 classes, based on being irreplaceable to 12 classes, based on sustainability to 11 group, based on being non-copy to 10 group and based on controllability to 10 group that include subgroups which are summarized in table.

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## 1. Introduction

Today, in 21century perspective, businesses are facing a condition include complex and competitive environment that is affected by different factors such as technology deployment, spread speed of new and global technologies. In other hand, variety of customer's taste and meet their needs immediately, learning their needs and anticipating market change, flexibility and agility in adapting with these changes is the basic-concern of today's organizations. Because, profitability in short-time cannot survive organizations and what is importance is achieving to factors that discriminate organization from others. Accordingly, it is better that each organization set it's strategies through identifying strength and weak in organizational capacity and competencies. In this way they can attain stable competitive advantage by identifying core-competencies where they are strong.

### Background

Zabihi (2010), in a research titled " processes and mechanisms to create and hold stable competitive advantage " by investigating three theories : industrial organization theory , resource-oriented theory and Schumpeter, J.A.[22] theory, work on competitive advantage and state that today, due to environment complexity and its fast changing, we should simultaneously, use a compound of theories to reach stable competitive advantage also consider internal/external factors that affect on organization.[8]

Maazari(2009), in a research titled" competitive advantage yield from IT and information systems" investigating the role of IT in reaching competitive advantage in organizations and state that new technologies such as information banks and communication networks can give power to organization than its competitors. [5]

Ramazani(2008), in a research titled" human resources training based on competency and approach of formulating competencies" state that recognize and fostering competencies and human power capabilities have a determinant role in sustain and surviving an organization in a competitive environment and any neglecting regard to these capabilities and competencies of human power considered as strategic resources and knowledge capitals can result in competitive score deposition. So, organizations that have systematic plan for deploying intangible assets and capitals certainly can provide more values for costumers, where this plan is one of the approaches for deploying capacities and capabilities of human resources toward value creation "competency-based training".[25]

Ghadirian and others(2004), in a research titled" knowledge management and its role to coordinate capabilities for create stable competitive advantage" state that role of knowledge management in organization is to create knowledge network to put together knowledge and skill of personnel and capabilities synergy such that can provide stability and progress for an organization in competitive environment.[4]

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Nouronesa and others(2004), in a research titled" lean Six-sigma methodology of approaching competitive advantage in third millennium" state that implementing lean Six-sigma methodology in processes for minimizing costs toward keeping customer , is a factor of reaching competitive advantage.[6]

Ali Ahmadi(2004), in a research titled" internal R&D activities to success in global competition scenes in new era and offering strategies to achieve competitive advantage" state the role of R&D activities toward create competitive advantage and strength in businesses and finally, approaches to create competitive power.[1]

Ali Ahmadi and others(2004), in a research titled" innovation feasibility in services, approach of dynamic capabilities" through 8 case studies in product-based companies state that keeping competitive power is in depend on innovation focus in services and capabilities mobility.[2]

Aron O'Casey, et al.(2012) in a research titled" creating superior customer value for company through competencies of manufacturers" believe that market-orienting is not sufficient by itself, for create and increase market advantage and to create competitive advantage, creating market direction, innovation and marketing capabilities are efficient. Also state that ability of mediation marketing innovation is to create a relation between market orientation and value creation.[9]

Eunju Suh, et al.(2012) in a research titled" important competencies required for managers in industry of reception services" refer to necessity of managerial, leadership, communicational, individual and supervisory skills.[15]

Elena García-Barriocanal, et al(2012) in a research titled" capacity organizational model with competency computations " by offering a cognitive and expandable model of job position and analysis method of competency gap, also personnel knowledge, state that flexibility belongs to organizational assets and affect on competency and capacity of organization.[14]

Ana Lisboa, et al.(2011) in a research titled" innovation capabilities: stimulants and their effect on current and future work" through investigating records and results of innovative capability, introduce it as raising factor for function, current and future exports.[11]

Ram Mudambi, et al.(2011) in a research titled" knowledge lever and competency throughout the space: new boundary in international business" state that access to innovation systems for sharing knowledge and merging them to create new competencies are effective and managers in functional levels must consider to merging knowledge from different geographical places, technologic and private networks.[21]

Andreas Größler (2010) in a research titled" mobility model of heuristic model from strategic capabilities in manufacture" investigates mobility of process full of strategic capabilities such as cost, quality, fast delivery, flexibility through methodology and heuristic approach of dynamic model, according to hierarchical method of collectable capabilities to help test strategy of assigning resources to strategic capabilities.[10]

María José Ruiz Ortega (2010)in a research titled" adjusting role of technology capabilities: competitive capabilities and company performance" considering 253 IT company in Spain, adjusting relation between competitive strategies and performance and technologic capabilities, and believe that technologic capabilities effect on high performance quality and reach to competitive advantage.[18]

Sheng-Tun Li, et al.(2009) in a research titled" exploiting and transferring knowledge assets that offered in organization" study on managing knowledge assets in organization and know it as a lever for better cognitive learning, improving product delivery and knowledge evolution, that finally these factors can be pivotal in gaining advantage and raising organizational capabilities.[23]

Pedro M. García Villaverde (2007) in a research titled" determining arriving time: ability of company and environmental conditions" investigate mutual effect and interaction between environment conditions and organization capabilities and state that behavior deployment is not just when we use environmental opportunities but is for motivating competitive advantage and using organizational capabilities when there are unfavorable environmental conditions. [14]

Francesca Golfetto, et al (2006) in a research titled" marketing competencies and customer values in business markets" believe that customer relation management and channel design result to financial yield. And method of focus on marketing competencies and supply & demand perspective are effective to be success and achieving competitive advantage.[16]

Hao .MA (2002) in a research titled" competitive advantage: what chance do we have if we can achieve it?" believe that effective strategic maneuver and internal management are competitive advantage factors, also using preventive approach in the case of ecologic resources, processes and intra-organization mechanisms, identifying incidents and exploiting it, innovation and creativity are chance foster factors in order to achieve competitive advantage.[17]

D. Passemard, Brian H. Kleiner (2000) in a research titled" competitive advantage in global industries" believe that profitability and reaching to positive success depend on having global strategy, fast response beside innovation and continuous quality, also venturing, investment and fast response to new deployments.[19]

vouriz (1999) in a research titled" creating and outsmarting for competitive advantage" state that generic resources of competitive advantage include situations and basic assets, reaching to professional distribution and supply, knowledge, competency and capability(skill) is in business operation, and company for gaining competitive advantage, needs to a compound of those factors.[26]

Vouriz (1999) in a research titled "capabilities and advantages of performance of market-based companies" state that companies are superior in six marketing activities include market research, pricing, product development, promotion and market management in upper levels of development, who have better situation in four dimension of organizational function. [27]

## 2. Theoretical basics of research

### 2.1 Competencies and capabilities of organization

Capability: skills of a business in order to coordinating resources and productive use of them and organization ability to change and accepting financial, technologic and strategic changes (Ulrich 1987).

### 2.2 Competencies

Core competencies: a group of competencies that are just belonged to organization and could not be imitated. (Ahmadi et al.2001)[1]

Stable competitive advantage viewpoint that is based on strategic situation of business in industry, state that mobility obstacles in industry are the first stability factor of competitive advantage (Caves 1977,1985). As Barney,[3] states, stable competitive advantage is continuity of applying strategies of asynchronous creating unique values against current competitors due to competitors' inability in copy of these profits (Barney 1991).[3]

Prahalad and Hamel (1990)[13], state that businesses convert their resources and skills into core competencies and cause to create stable competency advantage in unique environments (Hoffman 2000).[12]

peteraf (1993)states that resource heterogeneity in industry, limits of competition' last, incomplete mobility of resources and limitations of competition' future are four factors of reaching stable competitive advantage.

Businesses before creating a higher competitive position, must limit competition of their competitors for achieving resources (Strand, 2006).[29]

According to Kay et al. (1995) the concept of stable competitive advantage in innovation, reputation is a relational structure and strategic asset. So, strategic asset imply to an asset that is gained based on market dominance or a situation due to natural or legal monopoly also he states that this structure can amplify represented value by business in three ways: creating organizational knowledge, creating cooperation ethic and implementing routine flows of organization (Shullman 2005).[30]

Barney1991, states that business competencies as competitive advantage are include rarity, not to be imitated, not to be replaced, permanency and be under control, where these factors are the basics of factor analysis for current research.

### 2.3 Factor analysis

Factor analysis is one of the multi-variable analyses that, is very applicable and popular. The main aim of factor analysis is to express covariance between many of variables based on a number of hidden random quantity that called 'factors'. As an introduction, we consider factor pattern regarded to following discussion. Assume that we can categorize variables by using their correlations. It means, there is strength-correlation among all variables of a certain group have but they have weak correlation with variables of other group. We can imagine that each group of variables show an under-study combination or factor that demonstrates observed correlations.

In a more simple and applicable word, when there are more number of variable in research, where working with them is complex, we can summarize any number of those that have high-correlation with each other, into a variable or new factor.

## 3. Methodology of research

This study is of survey type and cross-sectional type, regarding to application-deployment method and time of data gathering, respectively, also is quantitative-qualitative according to data nature.

### 3-1.step1

1- A 42 components questionnaire is provided through recognizing and extracting core competencies of Foolad technique .CO to do factor analyses of core competencies and cores of competitive advantageous, where each component is evaluated based on 5 indices: rarity, not to be imitated, not to be replaceable, permanency, non-copy, and be under control by using Saati spectrum (1: very weak; 3:weak; 5: fair; 7: strong; 9: very strong).

### 3-2.step2

2- These questionnaires considering 42 components are provided for 45 members of experts and managers in order to be scored and could be considered as basics of factor analyses.

### 3-3.step3

3- Based on given scores to each component, descriptive statistic is provided for each index.

### 3-4.step4

4- Results of questionnaires are factor analyzed according to each index.

#### 4. Finding

As mentioned before, 42 components of organization' competencies are factor analyzed based on 5 indices and results are presented in following.

**Table4-1.** statistical results of 42 factors questionnaire including 5 indices

variance	mean	Cronbach' alpha coefficient	Question number	title	
1.023	4.896	0.912	42	Total questionnaire	2
1.448	4.848	0.83	42	Questionnaire based on 'rarity' index	2-1
1.426	4.476	0.952	42	questionnaire based 'irreplaceable' index	2-2
1.45	4.778	0.87	42	questionnaire based on 'under control' index	2-3
1.427	4.92	0.91	42	questionnaire based on 'permanency' index	2-4
1.438	4.810	0.89	42	questionnaire based on 'non-copy' index	2-5

**Table4.2.** analyzing based on rarity index

% effect rate	categorizing	row
6.088	Mentoring, experts number, talent management, organizational intelligence, providence, thought and creativity, R&D activity, high and new technology	1
5.959	Competency-based training, providers' technical knowledge, trained personnel	2
5.821	Information integrity, information system flexibility, producing information	3
5.792	Flexibility, strategic thought, venturing, fast reaction, production variety	4
5.395	Business process alignment, patent	5
5.353	Managerial skills, crisis management, value-chain management, strategy formulation	6
5.265	job shift, organizational dependency, personnel fidelity, high emotional power, recommendation system	7
5.260	desired market share, customer-relation management, customer' attraction/preserving	8
5.206	safe working, fixing system	9
4.776	total quality control, timely production, implementing six-sigma method, standardization	10
4.730	Productivity	11
4.371	investments, financial power	12

**Table 4.3.** analyzing based on non-replacable index

% effect rate	categorizing	row
6.913	Mentoring, thought and creativity, organizational intelligence, venturing(risk taking), fast response to competitors, R&D activity, experts number, providence, talent management, managerial skill, strategic thought, flexibility, crisis management	1
6.322	high emotional power, organizational dependency, value chain management	2
6.164	desired market share, customer attraction/maintenance, customer-relation management, value-chain management	3
5.131	strategy formulation, business process alignment	4
5.298	timely production, production variety	5
5.262	Information integrity, productivity, information systems flexibility, information production	6
5.042	competency-based training, providers technical knowledge, trained personnel	7
5.017	patent, high technology	8
4.888	Total quality control, standardization, lean six-sigma method	9
4.868	safe working, fixing systems	10
4.825	recommendations system	11
4.471	Job shifting, financial power, investments	12

**Table 4.4.** analyzing based on sustainable index

% effect rate	categorizing	row
6.989	Competency-based training, Mentoring, thought and creativity, organizational intelligence	1
6.553	Customer attraction/preserving, customer relation management	2
5.895	Strategy formulation, managerial skills, talent management, thought and creativity	3
5.589	Financial power, investments, patent	4
5.317	Standardization, fixing system, total quality control, recommendation system, production variety, implementing lean six-sigma method, safe working, timely production	5
5.238	Organizational dependency, personnel fidelity, high emotional power of organization, experts number, job shifting	6
5.237	Providers' technical knowledge, trained personnel	7
5.177	Fast reaction to environment and competitors identification, providence, risk taking, flexibility	8
4.946	R&D activity, desired market share, high technology	9
4.916	Information systems flexibility, information integrity	10
4.734	Business process alignment, value-chain management, productivity, crisis management	11

**Table4.5.** analyzing based on non-copy index

% effect rate	categorizing	row
10.714	Organizational intelligence, flexibility, crisis management, managerial skills, talent management, strategic thought	1
8.595	Strategy formulation, information integrity, information system flexibility, trained personnel, information production, high emotional power of organization, personnel fidelity, organizational dependency	2
7.69	High technology, R&D activity, providence, timely production	3
6.513	Implementing six-sigma method, patent, standardization, fixing system, total quality control	4
6.423	Fast response to environment and competitors identification, productivity	5
5.276	Production variety, experts number, thought and creativity, mentoring	6
4.982	Recommendation system, value-chain management, customer attraction/maintenance, customer-relation management, desired market share	7
4.518	Job shifting, safe working, competency-based training, providers' technical knowledge	8
4.105	Risk taking, business process alignment	9
3.933	Financial power, investment	10

**Tab4.6.** analyzing based on index of 'under organization control

% effect rate	categorizing	row
8.518	Providers' technical knowledge, trained personnel, job shifting, recommendation system, experts number, competency-based training, mentoring, managerial skills, talent management	1
7.619	Safe working, standardization, six-sigma method implementation, total quality control, patent, timely production, fixing system	2
7.051	Value-chain management, financial power, investments	3
6.572	Information production, desired market share, customer attraction/preserve, customer-relation management	4
6.097	Strategic thought, strategy formulation, providence, risk taking	5
5.611	Organizational dependency, personnel fidelity, high organizational emotion	6
5.083	Flexibility, productivity, fast response to environment and competitors identification, crisis management	7
4.824	Thought and creativity, R&D activity	8
4.591	Information system flexibility, information integrity, organizational intelligence	9
4.100	Business process alignment, production variety	10

## 5. Conclusion

in current study, core competencies of Isfahan Foolad Technique Co. are subjected to factor analyzing in a 42 factors questionnaire from these competencies that were extracted from other organizational capabilities, by 5 competitive advantage indicators through computing total Cronbach's alpha 0.912, mean 0.89 and variance 1.023. Each element is scored by each indicator based on Saati spectrum by 45 managers and experts of organization, where results of factor analysis show 42-fold factors are grouped based on rareness indicator to 12 classes, based on being irreplaceable to 12 classes, based on sustainability to 11 group, based on being non-copy to 10 group and based on controllability to 10 group that include subgroups which are summarized in table.

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