



ANALYSIS OF ORGANIZATIONS WITH A CIRCULAR STRUCTURE (DEMOCRATIC HIERARCHY)

Mohammad reza Hamidizadeh ^{a*}, Sina Saeedi Asl ^a

^a Department of Management and Accounting, Shahid Beheshti University, Tehran, IRAN

ARTICLE INFO

Article history:

Received 04 January 2019
Received in revised form 11
March 2019
Accepted 12 March 2019
Available online
13 March 2019

Keywords:

Organizational structure;
Structural variables;
Content variables;
Circular organizational
structure.

ABSTRACT

The main objective of this study was Analysis of organizations with a circular structure (democratic hierarchy). This was an analytical descriptive study and library resources are used to gather information, and content analysis is used to analyze the data. Results showed that circular structures have little management levels and small senior management team. The structure can meet lots of hierarchical limitations and can also cause slowdown of decision making and implementation process. It can also decrease high costs of management for inter-department relates and organizational hierarchy. It enables organization to consume its resources to provide service for customers (whether the customers within organization or out of organization). Circular structures are rounded structures, which pay attention to processes and try to preserve the advantages of vertical and horizontal nature.

© 2019 INT TRANS J ENG MANAG SCI TECH.

1. INTRODUCTION

Organizational structure and how it has been formed has always been one of the tense discussions of the field of management. This issue is at the center of attention and in today's conditions, it has been updated in the form of new contingency theories, reengineering of the organization, and so on. Organizational structure is a set of ways and means by which the organization divides its workforce into different tasks and then coordinates them. The organization, according to its goals and missions, places tasks on its agenda and employs the staff members, and the distribution of authority and responsibility in the organization is formed. The organizational structure shows itself in a set of lines and forms called organizational chart. At the same time, the organizational chart also reflects the views of the minds of managers and designers (Robbins, 2017).

Since organizations are open systems and interact with their surroundings, they need to be redesigned when needed, because of changing the strategy of rival companies, changing technology and changing the environment. When designing the structure, the dimensions of

the organization should be analyzed. Organizational dimensions include content variables and structural variables. Objectives, strategy, environment, technology, and size are among the most important content variables. These variables represent the whole organization and its status and are between the organization and the environment and are derived from the environment (Richard, 1997).

Complexity, formalization, and concentration are important examples of structural variables. Structural variables represent the internal characteristics of an organization and provide a basis for measuring organizations and comparing their structural features. Content variables affect the structural variables and their integration and integration into a variety of structural designs that are theoretically divided into organic and mechanical structures, and organizational structure can be found in terms of organizational chart. For deep understanding, the main concepts presented by scientists are at the first analyzed (Hammer, 2006). This study tends to define the desired concept in each section with presentation of a good question.

2. LITERATURE REVIEW

An organization is a kind of social unit that consists of individuals who are managed to achieve collective goals. For example, organizations are game systems that are heavily influenced by the environment. Each organization has its own management structure, which defines the relationships among different employees, the tasks they perform, and the roles and responsibilities that are provided to perform different tasks. A well-organized organization gains effective coordination, identifies the structure, formal communication channels, and links individual activities to each other. An organizational structure defines a way in which roles, powers, responsibilities, and responsibilities are determined and managed and how the information is transmitted between different levels of hierarchy in an organization. Organizational structure depends considerably on its goals and strategy in achieving those goals. An organizational chart is a visual representation of the organizational structure. This structure should clearly define the reporting relationships and the flow of power, as this will make a good connection and result in efficient and effective flow of work. Managers should seriously consider how they want to organize an organization. Some of the key factors that need to be addressed include size of organization, business nature, goals, and business strategy for achieving them and the organization's environment (Rahmanzadeh Heravi, 2003).

2.1 Functional organizational structure

Organizational structure is the most common model in most organizations. Organizations with such a structure are divided into smaller groups such as operational, financial, marketing, human resources, IT, and so on. The top management team consists of several performance supervisors, such as sales and marketing operations manager. Communication occurs in each of the functional sections and is communicated across sections through the supervisors of that department. This structure provides more operational efficiency. It also allows each group of specialists who have more expertise to

act independently. In spite of the above benefits, there are some issues and problems with this structure. When different functional areas arise, people focus only on their responsibilities and do not support other functional areas. Specialization is also limited to a specific field of activity, which limits the field of learning and growth (Frankel, 2003).

2.2 The organizational structure of the product

This is another common structure in which organizations are organized with a particular type of product. Each product category is considered as a separate unit. For example, in a retail business, the structure can be grouped according to production lines (Blue and William 1969).

2.3 The organizational structure of the product

A structured organization with the product classification method, by creating completely separate processes from other production lines inside the organization, facilitates internal autonomy. This leads to a deep understanding of the particular product and also promotes innovation. This possibility focuses on responding to the results (Perrow, 1970; Hage and Mickael 1967).

2.4 Circular organizational structure

A matrix structure is organized for managing various dimensions. Functional teams are also used to report the level of specialized performance in both horizontal and vertical. In this way, employees may belong to a specific functional group, but they will also help another team. This type of structure brings employees and managers across sectors together to achieve common organizational goals, leading to efficient information exchange and efficiency, and also enables the sectors that cooperate with each other, often for Solve issues with each other. This structure strengthens incentives among employees and creates a democratic management mode that searches for team members' inputs before directors decide. However, the matrix structure often increases the complexity of the organization. As reporting is not limited to a single supervisor, employees can show their willingness to the supervisor who wants to follow it. Such discretion and dual communication lead to communication gaps and the division of staff and managers (Paul et al, 1990).

3. METHODOLOGY

This is an analytical descriptive study and library resources are used to gather information, and content analysis is used to analyze the data.

4. RESULTS AND DISCUSSION

Over the organizational study history, different people have always tried to classify organizations based on a basis and foundation and apply some features for each group, in which the organizations have same features. To study the organizations, scholars need a logic, using of which they can increase organizational ability to achieve organizational goals. Organizational study means we can derive some features of similar organizations and apply them for other organizations to have more effective management.

Organizational structure specifies the in-organization information and type, amount and the way of distributing information within the organization. It can be specified that what units gets what information and to whom the information should be given and from whom the information should be received. Organizational structure shows strategy of organization and the interaction of organization with the environment and response to environmental phenomena. (Robbins, 2017).

4.1 ORGANIZATIONAL STRUCTURE FEATURES

Organizational structures have criteria to be specified and there are factors affecting the criteria and bringing different structures for people. Hage (1967) counted some features for organizational structure, which are known today as structural variables. Other scientists also presented content variables, which determine structural variables. In fact, these are same features attributed to organizations in same class and are known as organizational plan:

4.1.1 STRUCTURAL VARIABLES

Complexity, formalization, centralization, standardization, professionalization, and personnel positions are structure variables, the most important of which (complexity and formalization) are analyzed here.

4.1.1.1 COMPLEXITY

When person enters to an organization, the first thing encountered is labor division, hierarchy and job titles. Complexity can be investigated in three levels:

- Horizontal complexity
- Vertical complexity
- Geographical complexity

4.1.1.2 FORMALIZATION

The more complicated technology is, the less formalization would be and the more repetitive technology is, the more formalization is increased.

Increased size of organization and its growth can make organization be directed towards bureaucracy to control and to have indirect supervision on people and solving problems in low levels and can ultimately increase formalization. The more the organizational personnel are educated and specialized, the more they can bring rules to the organization and the organization has to codify less regulations and standards. In fact, the profession of experts can adjust the organization (Blue and William 1969).

4.1.1.3 CENTRALIZATION

Centralization is in direct relationship with power and decision making within the organization. In fact, centralization shows the distribution of power within the organization. The aim by power is power in decision making. Power distribution in organization can cause formation of different forms of organizational structure. Each group with more power in the organization has more centralization and forms organizational structure in its own benefit.

Power has some source and origin, which can't be explained in this study (Rahmanzadeh Heravi, 2003).

4.1.2 CONTENT VARIABLES

Content variables are those variables affecting structural variables directly. In fact, the amount of complexity and formality and centralization of organization is depended on these variables. Content variables include environment, technology, strategy, size and culture and are explained in the following.

Environment: every organization is surrounded by the environment. The first step to analyze environment is to identify that. Hence, to identify the environment, the events happened there should be identified. On the other hand, all said events are taken by the organizations and human communities. Hence, all organizations and societies should identify the events they create, which are not under control of organization but can affect that. To this end, organization has been divided to different departments. The longitudinal instrument of the environment includes far or public environment, near or work environment. The latitudinal instrument of the environment includes 10 separated sections.

In lateral environment tool, for the analysis of far environment, PESTEL is used and to analyze near environment, it is used. The difference of near (work) and far (public) environment is that the work environment can affect organizational action daily and directly and public environment can affect organizational performance and public environment can affect all organizations of industry indirectly.

For analysis of work environment, the industry analysis method, competitor groups' nature and product lifecycle should be applied.

Another method for industry analysis is using product lifecycle. In the Figure 1, this cycle is illustrated.

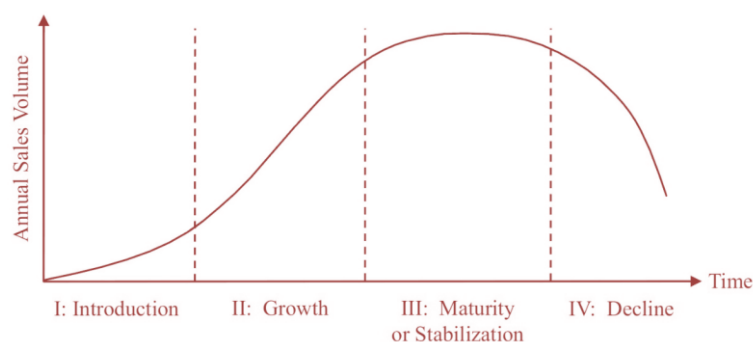


Figure 1: Product life cycle.

This kind of classification helps investors to assess the potential growth of different companies in an industry.

In analysis of competitor groups based on two underlying criteria from all existing criteria, all competitor organizations manufacturing same product or alternative products are

classified and competitiveness places of the market can be specified using the classification. Moreover, the scopes with no competitor can be also specified.

At the end of explanation of PESTEL, it should be mentioned that conditions in different scopes of far environment can affect each other significantly. For example, political changes can significantly affect approval of regulations or regulations can significantly affect economic conditions.

For the longitudinal tool, environment is divided to 10 sections and all organizations and communities affecting the organization are determined in each section. In the Figure 2, the 10 sections are illustrated.

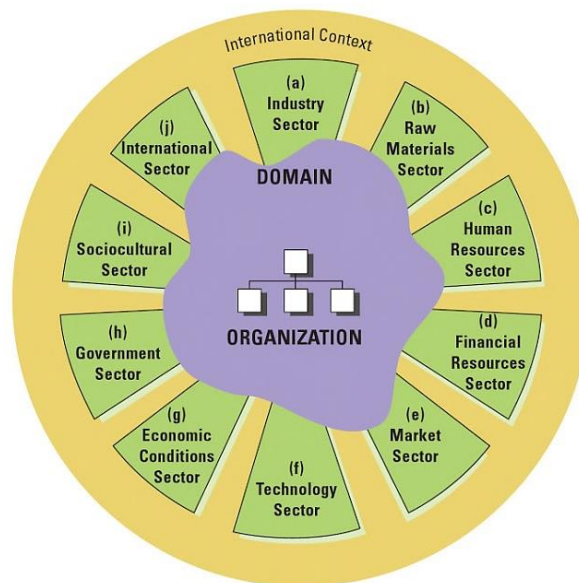


Figure 2: Environment 10 sections (after Daft, 1998)

With division of organizational environment to the 10 sections, the dominance of organization in each section is also determined. In fact, using this method, all organizations in each section and affecting the organization are determined.

The environment can be also classified in terms of analytical dimensions. Organization needs its environment in terms of information or resource. The type of organizational need can have some effects on organizational structure.

If the dependence of organization is on available information at the environment, environmental phenomena can be analyzed in terms of complexity and sustainability.

Complexity of the environment means that the more the number of events in the environment is and the more they're scatter in the environment, their heterogeneity and the more their relationship with each other is, the more complicated the environment would be. On the other hand, the more the events are unpredictable and the less their survival is, the less the stability of the environment would be. In the section of strategy, it will be mentioned that what are the upcoming strategies of the organization to deal with these cases.

For business organizations, all efforts for analysis of the environment are directed to answer a question that what effect the environmental changes can have on understanding, needs, and desires of customers?

Strategy: organizational strategy determines the way of interaction of organization with the environment. In previous section, the data were obtained from the environment. Now the way of encountering the information and the interaction with environmental phenomena is relevant to desired strategy. Strategy is determined and the power groups determine that. In fact, the power groups in the organization determine the interaction with the environment and organizational strategy due to the insight, attitude, and priorities of the groups. The final response given by organizational strategy is that why customer should buy from us instead of buying from competitors? Answering this question can make huge structural, cultural and leadership changes.

To codify strategy, three stages should be passed and each stage has some steps. The three stages include strategic analysis, strategy design and strategy implementation.

The mission declaration includes perspective, mission, and axial values. Futuristic perspective is based on the past insights and experiences and can provide an overall image of future. The perspective can be adjusted by means of environmental changes and should be changed from time to time. Perspective is of type of wanting; although mission is from type of becoming. In mission, individuals can determine that what capabilities are needed for realization of perspective and what are the capabilities needed for realization of perspective. Axial values include norms of company, which should be considered at the time of writing the perspective and mission. Axial values can adjust the perspective and organizational mission. At the end, mission declaration should answer the main question:

- 1- What is desired business? What need is responded in form of desire?
- 2- Who are the customers? The need of what part of market is met?
- 3- What is the way to be different? What are features of the desired product or services chosen by the customer?

After analysis of the environment and codification of the organizational mission declaration, the in-organization status should be analyzed. Using different modes such as value chain analysis, the in-organization environment, and organizational process can be analyzed. Every organization takes a chain of activities to produce product or service; although the main question is that how much each activity can affect realization of the main objective and perspective of the organization? It should be analyzed that to what extent the organizational activities are in line with realization of organizational goals; meaning that how much value they can make. The value is the result of dividing the price of activity by customer in that activity. Is the activity taken valuable for the customer?

After completing strategic analysis, the strategy should be designed. Strategy can be designed in three levels of company, business, and operating level. Porter introduces three strategies of cost leadership, differentiation leadership and centralization leadership for company. To design strategy in business level, various tools such as SPACE matrix and SWOT can be used.

With interpretation of SPACE matrix and the data obtained from environmental studies,

overall organizational status under current conditions and desired conditions of organization can be obtained:

- Meeting the weaknesses
- Revising and accumulating existing capabilities for realization of goals
- Taking benefit of consistent capabilities
- Increasing powers or strengths

After doing the relevant calculations of SPACE matrix, the matrix was drawn for the organization and it was found that strategic status of organization in which section is placed. With analysis of key environmental factors and interpretation of SPACE matrix, the basic and strategic problems of organization should be identified and solved.

Afterward, the strategies are extracted and codified and proposed based on mission, perspective, goals and overall policies of organization (which were previously analyzed, codified and approved) and under effect of the results obtained from SPACE matrix, which can specify the overall schema of existing status, desired status and strategic organization status in two environments of work (near) and public (far) operating environments under present and future times and based on general strategies identified in SPACE matrix. To identify, design and propose possible strategies, SWOT matrix is used.

SWOT matrix proposes some strategies based on strengths and weaknesses and opportunities and threats of the organization. Perspective can be divided to long-term, mid-term and short-term goals and the matrix can be drawn for short-term goals. SO strategies are aggressive. The ST and WO cells are adaptive and one should try to cope with them. The strategies in this section are to preserve the balance and to return to aggressive goals, so that the environmental threats can be met using strengths or the weaknesses can be met with the environmental opportunities. The TO cells are the worst cells and all organizations try to leave them and go to other parts.

Now, according to the environment and technology used, the organization can assign more strategic decision to operating levels, so the centralization is reduced and the ability of organizations is increased to decrease the conflicts caused by non-repetitive technology or rapid response too complicated and unstable phenomena.

The strategies in this field are in kind of changing the environment and try to overcome environmental phenomena. It was mentioned before that the more the poor environment is, the more dependence on environmental resources would be:

Technology: technology is one of the most complicated organizational concepts. Before this, the technology of the environment was explained; although technology as a content variable is definitely different from technology as one of the factor changing organizational public environment. In first section, it was mentioned that it could be specified in organizational structure that what organizational units should be created and what kind of activities they should take and how is the relationship of these units. However, an underlying question was unanswered: how the tasks should be completed? Technology can answer the question.

Technology means classification of techniques. The organizational activities can be taken through different techniques and methods. When the techniques of taking action are classified based on logic and criterion, the technology is specified.

Technology is in kind of method and manner. The issue that how boundary extension units collect data from surrounding environment, how power groups process them and how the structure can circulate the information in the organization and how the organization can solve the problems are associated with organizational technology.

Various scientists worked on technology are introduced here:

a) Woodward: the study was done in 1920 with the technology of that time (age of machinery). The firm sizes were from 250 to 1000 people (small firms). Studied organizations were manufacturing companies and not service companies and the aim was answering the question that is there any correlation between organizational structure and organizational effectiveness or not?

In this study, the scholar found that structural variety is too m\high, which they can't be classified and no correlation can be created between structure and their effectiveness; although he could find an interesting result. If organizations are classified based on used technology, then correlation can be created between organizational structure of each class and the effectiveness. Woodward used the manufacturing technology as the basis of working. He classified organizations based on technical complexity as mechanized degree of production process.

b) Perrow: the definition presented by Perrow (1970) for technology is the measure or method took by person to make change an object, concept or destination; whether the method is mechanical and using instruments or not. It means that there is no correlation between technology with machinery and applied instruments. The analytical level of Perrow's work is in level of organizational units and departments. Perrow emphasized knowledge-based technology. Perrow introduced 2 components and could pave the way for analysis of technology for manufacturing and service companies and also for companies using old and modern technologies and for both small and large departments.

Changeability of function means that the exceptions created for person while working are analyzed in a changeability-repetitiveness process. Analyticity of problem means analysis of type of search procedures to find successful methods to respond exceptions in certain to uncertain process. Perrow (1970) designed a 10-item questionnaire to measure the organizational knowledge-based technology. The questions were asked from employees and the answers were finally presented in the following matrix and organizational technology was determined. Perrow's questionnaire is presented in Table 2.

Perrow mentioned that changeability or task and analyticity of problem are in positive correlation with each other. For example, in jobs with least exceptional tasks, the problems

can be defined properly and it is hardly possible that a problem happens with low analyticity. Therefore, the four technologies can be combined with two repetitive and non-repetitive dimensions.

Table 1: Perrow's Questionnaire (after Daft, 1998)

Changeability	How much you can say that your work is routine?
	Whether majority of people in this job use same actions or methods?
	Whether the members of circle take repetitive activities?
Analyticity	To what extent the known methods are existed to take major part of your job?
	How much you use known steps in your activities?
	To what extent you use empirical methods and skills in your activities?

The more repetitive technology is, the more formalization, hierarchy, centralization and the more strict control would be. In spite, non-repetitive technology is considered.

c) Thompson: the basis of Thompson is on this basis that each technology can basically cause a kind of technology. Technological dependence of different organizational departments can deform organizational design. The dependence can specify the degree of reliance of an office on other offices (resources and materials to work). Low dependence of departments means that there is no need to match departments since they act independent from each other.

Technology has been divided to 3 classes:

- Operational technology
 - Technology in terms of materials
 - Knowledge technology or same management and administration knowledge
1. Size: in the studies conducted in this field, it could be claimed that firm size plays insignificant role; although factors in addition to size should be also considered. Kim Burley introduced firm size aspects and measurement indices in 1976:
 2. Physical capacity: for example, number of beds in hospital or number of assembly lines in automotive industry
 3. Number of employees: the first index coming to mind is this case
 4. Volume of inputs and outputs: for example, number of students or faculty members of a university
 5. Net properties and capital

The indices are interdependent and can affect each other; although they can be separated.

Organizations grow for various reasons. The main reason for growth of organizations can be organizational goals, achievement to more resources for competition in world scale, achievement to saving caused by scale, attraction of powerful managers, availability and profitability and economic health.

With the growth of organizations and specialization of affairs, separation of departments is increased and the complexity can be caused by this since in addition to increase in number of organizational departments, they should be matched.

In regard with size and technology, it should be mentioned that if organization takes

measure to employ expert people and creates professional departments, this means non-repetitive nature of activities and in fact, non-repetitive nature of technology.

Another important discussion referred in study of firm size can be lifecycle of organization. It means that organization encounters ups and downs during its lifetime and some problems are created for them, which should be met using managerial solutions. If an organization can't solve the problems in the way of its growth, it may encounter retreatment and be collapsed gradually. In rest of paper, the pretreatment process and lifecycle of organization are explained more exactly.

Lifecycle means that an organization is created one day and is grown and is destroyed finally. The studies show that organizations pass 4 important stages:

1) Entrepreneurship stage: while establishment of an organization, it is totally focused on supplying a kind of product and preservation of organization in the market and the founders take whole effort for technical affairs of products and for selling. Organization is informal and bureaucracy is canceled and controlling them is applied by the manager and supervisor. Crisis: leadership is needed. A powerful manager should be employed.

2) Teamwork stage: if the leadership problem of organization is solved, the path of targets is specified, the explanation of duties and administrative hierarchy is created, and the employees become familiar with their responsibilities and cooperate each other in way of success of organization for long time. Relations are informal; although formal teams can be also appeared. Crisis: needs allocation of power and authority

3) Formalization stage: the stage needs integration of attitudes and applying regulations, methods, and implementation of control systems. Relations are weak and mostly formal. Non-centralized groups are created. Experts and staff forces join the organization. Senior management is involved in determining organizational policy and strategy. Crisis: extreme bureaucracy

4) Decision-making stage: organization creates working groups and is divided to various departments and circles. Formal teams change into small and simple departments. It is probable for bureaucracy reach its peak. Social control and continence of people reaches to a point that the formal control problem is canceled. Crisis: needs revitalization: the organization need to revise itself and needs to be renewed after reaching maturity.

5. CONCLUSION

An organization with a vertical structure cannot adequately meet the needs of the technology revolution. Firstly, its multi-layered management structure makes it difficult to exchange ideas and perform new ones. Ideas that form on top or bottom of the organization (especially ideas that are formed in the bottom) must pass through several layers before they reach the other end of the organization. New measures of both layers may be subject to resistance. In multiple layers, the probability that a manager or system will be found that

causes the idea to be delayed or eliminated increases. The second problem is that specialized teams of professionals gather in one place and outline their boundaries, and sometimes their loyalty to their discipline is more than their loyalty to the entire organization (this can also be seen in the structure). The third problem, the cost of multiple layers and reacting to the changes. The competition in today's world that requires new innovations and quick response to market developments does not work well with vertical organizations, which has led many companies (especially advanced technology companies) to abandon such a structure and face Horizontal and circular structure.

The wave of new thinking calls for a change in the vertical and traditional organizational structure, by removing the boundaries between sectors and tasks and eliminating the organizational hierarchy. In new organizational structures, tasks are accomplished by multi-disciplinary teams organized around a pivotal process (and not a specific task). Commodity development is an example of a central process that requires a team of design engineers, market analysts, strategy designers, and process coach. Sales are also another pivotal process that has its own trustee. This process can also be a team consisting of sales, production, transportation and pricing specialists. After-sales service is also the third pivot process that involves the presence of a team of researchers, service personnel and advertisements that co-operate with the process facilitator to ensure customer engagement. The whole organization is flat (with limited layers) and is run by a boss and a group of senior executives (representing specific tasks such as financial and human resources).

Circular organization structures follow different logic. In this organization structure, multi-expertise groups are defined on basis of organizational processes. Types of services are presented in groups by different people. Organizational relations are usually horizontal. All functions are taken in line with presenting a service (or producing a product) in a common branch under supervision of a person, who is owner and custodian. These structures have little management levels and small senior management team. The structure can meet lots of hierarchical limitations and can also cause slowdown of decision making and implementation process. It can also decrease high costs of management for inter-department relates and organizational hierarchy. It enables organization to consume its resources to provide service for customers (whether the customers within organization or out of organization). There is no doubt that redesign of organization based on process-oriented attitude in sectional organizations is not simple to do and it is not expected that this can be implemented in short-term. However, there are various solutions, which can change the attitude and make culture and support managers and make stages and making integrated plan to make such change possible. This is because; in large international companies with about 10.000 people such changes are taken. The important part is change in thinking paradigm and moving towards process-orientation.

6. REFERENCES

Blue, R., William M. (1969).” Ideas. Complexity, and innovation.” Administrative science quarterly.

- Daft, L. (1998). *Theory of Organization and Design of Structure*, Richard Translation of Parsayans and Aarabi Publisher: Office of Cultural Studies,
- Frankel, S. (2003). *Model Driven Architecture: Applying MDA to Enterprise Computing*, OMG Press, Wiley Publishing.
- Hage, J., and Mickael A. (1967). "Relationship of Centralizational to Other Structural properties." *Administrative Quarterly*, 12
- Hammer, M. (2006). *Beyond Reengineering*, Translation by Abdolreza Rezaee Nejad, Rasaya Publication.
- Paul S., Segerstrom T. and Elias D. (1990). "A Schumpeterian Model of the Product Life Cycle" *The American Economic Review*. Vol. 80, No. 5 (Dec. 1990), pp. 1077-1091
- Perrow, C. (1970), "organization analysis. Belmont, CA: wads worth publishing co.
- Rahmanzadeh Heravi, M. (2003). *Process-oriented Organization*, Samain-e-Sarmad Farda Engineering Company.
- Richard, H. (1997). *Organization*. Translation of the Parsaiyan and Aarabi Publisher: Office of Cultural Studies,
- Robbins, S. (2017). *Organization Theory (Structure, Design, Applications)*, Dr. Alwani, Dr. Danai Fard, Publisher: Saffar Publications
-



Professor Dr. Mohammad reza Hamidizadeh is Professor at Department of Management and Accounting, Shahid Beheshti University, Tehran, Iran.



Sina Saeedi Asl holds a MSc degree in Business Management, Shahid Beheshti University, Tehran, IRAN.