

Presenting a service outsourcing model (case study: general directorate of roads and urban development of Mazandaran province, Iran)

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ABSTRACT

Nowadays, organizations view outsourcing as a strategy. Achieving world-class capabilities and facilities, long-term flexibility, improving operational performance, increasing productivity, low progress time, better using of equipment, increasing output can be considered as reasons for outsourcing. There are influential factors and criteria, which improve performance. Although outsourcing of services has many benefits, such as cost savings, making the affairs competitive, and reduced workforce, it is followed by some concerns. Despite the emphasis of different models in outsourcing and reviewing it, lack of sufficient practical criteria and appropriate model causes many shortcomings in terms of quality in providing services and desirable results and based on the experience of some organizations, outsourcing contracts are costlier than previous status. The present study aimed identifying and prioritizing service outsourcing criteria and presenting a service outsourcing model in the General Directorate of Roads and Urban Development of Mazandaran Province in Iran. The research method is fundamental-applied in terms of objective and descriptive-survey in terms of method. The statistical population of the present study included the managers and experts and managers of General Directorate of Roads and Urban Development and the experts providing services to this general directorate in 2009. Researcher-made questionnaires were used to collect data. The face and content validities of this tool was confirmed by experts and its reliability was analyzed based on incompatibility coefficient less than 0.1. Research data were collected after distributing the questionnaires among individuals and then analyzed using Expert Choice software. The results showed that the service outsourcing criteria included evaluation and management, decision making and planning, and the criteria of evaluation and management had nine sub-criteria and each of the decision-making and management criteria had eight sub-criteria. Assessing the weight or degree of importance of service outsourcing criteria in this general directorate indicated that evaluation and management had the highest weight, followed by decision making and planning, respectively. After identifying the criteria and ranking them, the checklist prepared by the experts was distributed among the managers and experts of the general directorate and they were scores based on the defined weights. Then, the executive model was developed based on the obtained criteria and results to make organization more efficient and effective. Managers can use this model to take steps towards achieving the goals of the relevant organization.

Keywords: Outsourcing, Decision-Making, Planning, Evaluation and Management.

Introduction

Outsourcing, as one of the tools for organizational development and enhancing the productivity in the form of downsizing has

been considered by managers and officials of organizations in recent years and it has been implemented in various ways ^[1]. In past, outsourcing was used when organizations could not perform well, were weak in competition, had reduced capacity, faced financial problem, or were technologically backward and failed. Nowadays, organizations that are highly successful also use this tool to restructure their organizations, and the managers of these organizations have well realized that creating key capabilities to meet customer needs is essential and should take steps in this regard. A common and prominent feature of outsourcing strategies in developed countries in the last 20 years is increasing profits through outsourcing, so that outsourcing is recognized as a potential source of competitive advantage and

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value creation ^[2]. Nowadays, many businesses, including private, public, for-profit, charitable, and educational and research institutions, are following outsourcing strategy in all organizational dimensions due to the benefits of outsourcing. Outsourcing decisions are one of the strategic issues of organizations. Development of new management methods has caused organizations to switch from current activities to developmental programs. "Globalization", "decentralization", "mergers", "quality management", "environmental, research and communication Requirements" and "workforce management" are among the new management methods that have completely transformed the programs of organizations ^[3]. Organizations with more investment have higher satisfied employee and customer, high quality of products and services, more productivity and revenue and more general profit, so each organization has various strategies to improve this issue according to its conditions and facilities. Some organizations "outsource" all or part of their processes and others use electronic, virtual, or combined methods ^[4].

After several years, governments have resorted to various methods to solve the problems of traditional government management under the title of modern government management, and international organizations and institutions such as the Organization for Economic Development and the World Bank have provided solutions in this regard ^[5]. Outsourcing is a new management strategy that focuses on all areas related to human resources and their management. This approach can have both positive and negative impacts on an organization. Despite its shortcomings, the use of it is increasing. Thus, proper management of this activity is especially important among service organizations, in which human factor has a great importance. Although outsourcing of non-strategic activities brought many benefits, such as cost savings, making affairs competitive, and reduced manpower in public sector, it has caused some concerns.

Despite an emphasis on identifying priorities and their importance, due to the lack of standards and sufficient skills to monitor and review them, many shortcomings are created in terms of quality in providing services based on the non-governmental sector. Based on the experience of some organizations, outsourcing contracts are costlier and do not have the necessary efficiency in practice, compared to previous situation. The organizational chart in the General Directorate of Roads and Urban Development of Mazandaran Province of Mazandaran has seven deputies and nine city administration departments. Using the outsourcing strategy, if the indicators are not properly identified, not only does not increase the benefits for organizations but can also have destructive effects on the organization. The indicators provided by service outsourcing in the present study were introduced after identification to meet the needs of the organization better by service companies. A review of theoretical literature shows organizational processes, organizational structure, and

organizational strategies. Also, the existing indicators are basically designed based on the specific conditions of their communities, and these indicators can not necessarily be considered universal. In this regard, public organizations and the General Directorate of Roads and Urban Development of Mazandaran, as a public and specialized organization to provide desirable services to people, have to apply proper management and in line with the vision document of the Islamic Republic of Iran, they need to identify appropriate indicators to achieve this goal. Receiving distinctive and low cost services, paying attention to the internal forces of the general directorate or using outsourcing contracts are concerns that officials face with them to gain a competitive advantage. In the present study, based on the current structure of the general directorate and achieving the goals and satisfying the stakeholders, outsourcing indicators and their sub-criteria are identified and are prioritized.

Theoretical foundations and research background

Outsourcing has shifted from its initial stage with financial motivation to strategic motivation. Outsourcing with financial motivation has been observed since the early days of the business. In outsourcing with financial motivation, a company usually entered into a long-term deal with a single vendor to obtain the best possible discounts and ensure a more stable relationship. However, the goal was to assign the work to places where work was done at the lowest cost. Outsourcing with a strategic motivation emphasizes capability and competence. The focus here is on using specialized skills, knowledge of processes, and capabilities found outside the organization, and using the data (inputs) to help improve the effectiveness and efficiency of operations. More importantly, if strategic outsourcing is done properly, it will not only help the operation, but also help to the organization to have competitive and strategic advantages ^[6]. Outsourcing has a long history. A Persian proverb that says "Assign the work to the skilled people" or verses of Holy Quran that on taking a midwife to children is an example of outsourcing ^[7]. The term "outsourcing" means assigning the works, responsibilities and rights of making decision to another person ^[8]. According to Andrew and Nada Kakabadse, the transfer of tax collection task to contractors (by the government) was the first form of outsourcing in Roman times. In the eighteenth and nineteenth centuries, Britain assigned the task of maintaining streetlights, management of prisons, maintaining highways, and collecting taxes to contractors. Almost at same time in the United States and Australia, the delivery of postal cargo, and in France, the construction and management of railways and proper distribution of water were outsourced ^[9].

The term outsourcing was first used in 1989 to describe Kodak decision to outsource its IT activities to an IBM subsidiary as a business strategy. However, even before that, many companies

did not perform all their tasks themselves and outsourced less competitive activities to outside contractors. It can be stated that the idea of outsourcing first emerged in Adam Smith's book entitled "Wealth of Nations" in 1776^[10].

Adam Smith says: "It is a correct that the far-sighted owner of a family never tries to build something in the house that can cost him more than buying it"^[11]. Also, it can be stated that outsourcing has been a kind of "constructing-purchasing" decisions and the oldest studies on outsourcing are under this title. Then, the economic issues in this field were modeled using the theory of transaction cost^[12]. The most frequently cited theoretical basis of outsourcing is the economic cost of the transaction (exchange) of Kavez^[13]. There are different definitions of outsourcing, some of which are provided here: It is assignment of all or part of the responsibility of one of the units of an organization to a supplier outside the organization, purchasing a part of the resources or facilities of a company or organization. It is a kind of contract that can be used in all fields. It is providing services and tools for an organization.

It is a decision made by an organization to provide or sell assets, manpower and services to a third party, in which the contracting party undertakes to provide and manage the assets and services specified in the contract for specified revenue and at a specified time^[7]. It is assignment of duplicate internal activities as well as decision-making power to external contractors in the form of a defined contract^[14]. It is preparation of products and services from sources outside the organization^[15]. Several points should be noted concerning the causes of outsourcing. First, the goal of outsourcing is not to get rid of unnecessary activities, but to achieve optimal results (status). Managers who outsource the activities of a part of the organization should maintain the experience and technical expertise related to the outsourced work to monitor and manage the supplier. Depending on its conditions, each organization has its reasons for outsourcing, but it is important for an organization to know why it is taking this approach and identify the benefits it expect from outsourcing. If outsourcing is done properly, it will be a very powerful tool for improving the organization^[9]. Implementing an outsourcing strategy can be divided into four main stages: determining candidate activities for outsourcing and deciding on them, examining the suppliers ready to provide selected services and selecting the best option, signing a contract, managing the contract relations. Since the decision to outsource activities in an organization is a strategic decision, there is a need for the support and participation of top managers in this process. For example, they should allocate the necessary manpower and capital to this process and even provide the necessary support in the area of establishing a strategic outsourcing committee^[16]. One of the main questions in outsourcing is how to select the activities that are assignable and transferrable to the contractors, or which activities should be separated from the body of the organization and which should not be transferred outside the organization.

To make a decision on transfer or non-transfer of works outside the organization, factors such as vision, value chain analysis, competitive advantage, and core and non-core activities should be considered as a basis^[17]. Selecting activities to outsource is one of the most important decisions in this area. Rao and Young (1994) referred to vital role of market communication, risk, and control and performance^[18]. Kristiansen (2001) has proposed three classes of core activities, vital but non-core activities and non-core and non-vital activities^[19]. It has been suggested that core activities must not be outsourced. According to Beimborn (2005), outsourcing of non-core parts of business is done to focus on core capabilities^[20]. These cases are classified in an important area of outsourcing titled "what should be outsourced". Although it seems that in the outsourcing decision, the emphasis is on non-outsourcing of core activities, there are studies that show outsourcing these activities is also the right work, as it increases the market value of business. Jiang et al. (2007) reviewed the data of Japanese manufacturing industry from 1994 to 2002 and showed that "outsourcing of core business activities" had a positive effect on a company's market values^[21]. Given the growth of outsourcing, it is more difficult to cover more services. Given what was stated above and uncertainty in outsourcing, various executive and theoretical problems are usually considered in studies. The first aspect to consider is the classification issues. Although efforts have been made on classification, researchers have stated that there is no method to include all outsourcing activities. Outsourcing can be classified into a variety of manufacturing and service sectors, based on research conducted by Gerbi et al. (2009) and Ok (2011) and based on NACE classification in 2008. Second, there is no valid method to assess the outsourcing^[22, 23]. Amiti et al (2004) argue that this is very difficult to assess the outsourcing, because there is no information in the production stage during which outsourcing was used. Given what was stated, the studies should be based on indirect indicators^[24]. Rajan and Srivastava (2007) also referred to complexity of outsourcing assessment, because there is no accurate and relevant international information in this regard^[25].

In recent years, a set of indicators has been developed to assess international outsourcing. However, all of these indicators suffer limitations^[26]. Lankford and Parsa (1999) have identified the strategic and operational levels of outsourcing. At the operational level, organizations are used to solve short-term problems, while at the strategic level; they gain long-term benefits from outsourcing and maximize their capabilities^[27]. Although the call for the use of market forces in the public sector began in the late 1980s, outsourcing of public sector organizations began seriously when the idea of government recreation was introduced^[28]. Countries such as Australia, New Zealand, the United States and the United Kingdom, through setting rules and regulations in addition to privatization, sought to run a variety of outsourced activities that had traditionally been monopolized by the government. To achieve the best

performance in public sector organizations, government regulations forced organizations to sign contracts through auctions to purchase services from the non-governmental sector, and to provide the conditions for participation or management of the organizational units of non-governmental suppliers. Although outsourcing non-strategic activities brought many benefits, such as cost savings, making affairs competitive and reduced manpower in public sector, it caused some concerns. Despite the emphasis on quality standards in the signed contracts, lack of sufficient skills to monitor and manage contracts led to many quality shortcomings in terms of quality of provision of services based on the non-governmental sector, and even based on the experience of some organizations, outsourcing contracts are costlier compared to previous situation^[29]. Planning involves setting a goal and predicting the way to achieve it. In fact, the plan is considered as a kind of commitment to perform certain activities to achieve the goal. Planning is setting a goal, finding and building a way to achieve it. In recent years, due to dramatic changes in organizations, managers have shown greater tendency for outsourcing their activities. Thus, the use of planning has been proposed as a necessity in organizations. Planning enables management to determine its orientations in the future and equip the organization against tomorrow's changes and developments. Planning helps the manager to get a clear picture of the organization and its goals and to coordinate the organizational activities through a single strategy. Planning might be performed for the whole organization or for part of it. Planning may be for the whole product of the organization or for a specific product. In fact, the need for planning stems from the fact that all organizations, operating in a dynamic environment, aim to spend their limited resources on their diverse needs. The dynamics of environment and turbulence in it, and the uncertainty caused by changes in the environment increase the need for planning.

Based on experts, the main stages of planning include: 1- Identifying existing requirements (opportunities and constraints) 2- Setting short-term goals 3- obtaining complete information about core activities 4- Classifying and analyzing information 5- Presenting hypotheses based on predicting the future situation 6- Searching alternative programs 7- Evaluating various alternatives 8- Selecting the appropriate alternative 9- Developing secondary programs and support 10- Defining the sequence of activities and scheduling in detail 11- Stating the programs in the form budget figures and the program of allocation of financial resources and 12- evaluation of the level of progress of work. A decision to outsource is associated with many considerations for organizations due to its strategic requirements. Such a decision can be a major factor in the profitability of organization, so it can play a key role in the financial health of the company. Additionally, business and industrial managers are trying to use an outsourcing strategy, but they are faced with a variety of conceptual issues in practice.

Both managers and their advisors try to identify these issues so that they can use this mechanism more effectively. Goodwin J. Odo identifies five major factors influencing outsourcing decisions, including strategic importance, stakeholders' interests, issues related to suppliers, operation cost, and the industry environment^[30]. Tibor Kermik has listed a number of factors such as reducing the cost and increasing quality as benefits and other factors such as losing the information center as risks, which each organization makes a decision on outsourcing or non-outsourcing of its activities based on these benefits and risks.

When a decision is made to outsource the activities, factors such as costs, environment, strategy and activity characteristics determine the activity that can be outsourced^[31]. Chian Cheng and Chen Burhang have classified the parameters influencing the outsourcing decision into four classes of quality, management, strategic, economic considerations. Wang Young identifies the factors influencing outsourcing decisions, including economic factors, resources, management strategy, quality of service provided, and outsourcing risk^[32]. In the present age, dramatic changes in management knowledge have made the evaluation inevitable, so that lack of evaluation in various dimensions of the organization, including evaluation of the use of resources and facilities, employees, goals and strategies, is considered one of the symptoms of the organizational illness. Every organization requires evaluation to be aware of the desirability and quality of its activities, especially in complex and dynamic environments. Moreover, the lack of proper evaluation and management in a system means not communicating with the environment inside and outside the organization, leading to death of organization. Evaluation involves assessing the value of a program to determine its effectiveness. According to Beam et al, evaluation is the process of testing, professional judgment, and empirical research on a system or program. Control indicates the evaluation and assessment of the success of the operations performed in comparison with the criteria of the specified programs and the correction of deviations to ensure that the goals of a given program have been achieved. Therefore, it can be stated that control is one of the main tasks of managers. It should be noted that with increasing the level of management, the importance and impact of evaluation and control on the life and success of the organization will increase. Outsourcing evaluation makes the system intelligent and motivates people to behave optimally and provides the necessary feedback on the following cases:

- By following the level of progress towards the set goals, it is determined whether the developed policies have been implemented successfully or not.
- By assessing the desired results of the organization and also assessing the satisfaction of employees and customers, it is possible to know whether the policies have been formulated correctly or not.

In general, outsourcing covers all activities of an organization that do not have a strategic role and the non-governmental sector is able to provide these services with better quality and lower cost. However, suppliers do not always meet the expectations of outsourcing. The situation is good when the supplier is able to provide the necessary services at a lower cost with a high quality. Inappropriate situation is when the supplier provides the necessary services with a low quality and high cost. However, supply quality and low cost may not be the only acceptable scales in outsourcing government activities and ethical issues may force some organizations to consider several criteria in outsourcing. Outsourcing is a tool, the benefits of which depend on the skills of the people who manage the tool. Successful and effective outsourcing management requires a combination of management skills. There are different models to make a decision to "construct or purchase" or make a decision to use external resources or produce it within the organization. We here refer to some of important examples^[33].

Quinn and Himbler Model

Quinn and Himbler have linked the factors that constitute both the advantages and disadvantages of cooperation, and have developed dimensions of both to categorize different and broad activities (Development of production of parts or products, services and support activities that a company deals with). In other words, they classified the potential of competitive advantage and the degree of vulnerability (strategic sensitivity) of different activities, which require different types of cooperation with suppliers, into three groups^[34].

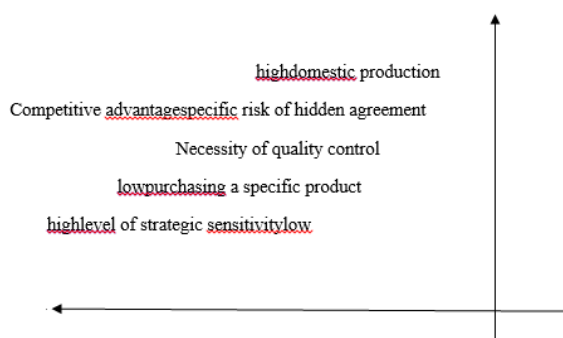


Figure-1- Quinn and Himbler Model

It should be noted that "Quinn and Himbler" talk about activities in general without making a clear distinction between components and non-objective cases. Quinn and Himbler model argues that activities with high potential for competitive advantage and a high degree of strategic sensitivity should be performed internally^[34]. Moderate potential for competitive advantage indicates activities required for areas such as short-term contracts, necessity of selecting, long-term contracts, and consulting, joint development, partial and general ownership with regard to suppliers. Finally, activities with low sensitivity and low potential for competitive advantage require avoiding cooperation with suppliers^[33]. Model analysis shows that out of

9 possibilities, only 3 possibilities are considered and it raises the question of "If there are activities that are strategic in terms of low vulnerability and high competitive advantage?" This question can be extended to six possibilities that Queen and Himbler did not consider.

Wintison Model

This model indicates that there are two types of products, including primary product (because it is produced within the organization and production of the final product has been done accurately and the main producer is not appropriate clearly for its manufacturing) and non-primary product (because it is produced with the help of suppliers and less precision has been used in their production and the main manufacturer lacks expertise to produce them better). The main product of Wintison is compatible with the intra-organizational products of Quinn and Himbler, as two types of primary and intra-organizational products are domestic production and have been made without the participation of any supplier. However, Wintison did not mention on the way of cooperation and participation that could be used to use the services of foreign suppliers to produce non-core products (ibid).

Olsen and Olramsen model

Olsen & Olramsen model does not discuss outsourcing decisions, but the model focuses on products that have previously been decided to be outsourced, or it is an interesting consideration of the types of collaborations and partnerships that can be used in way of cooperation (Corresponding to the intermediate state of the Queen and Himbler model). According to Olsen and Oleram, parts that are outsourced can be divided into four classes of strategic, critical, power, and non-critical. These parts are classified based on the difficulty of coping with the purchase conditions and the importance of planning for the main equipment manufacturers. The status of strategic products is very important and it is difficult to produce or manufacture them. The non-critical products have low strategic importance and it is easy to manage them. Studies have examined outsourcing and its causes, and each of these studies has addressed some aspects of it. Wang and Song (2017) in an article entitled "The impact of reverse outsourcing on the advancement of Green Technology from the perspective of a global supply chain") examined the level of technological green progress from two innovative concepts of potential production technology and practical production technology using microdata of the studied companies^[35].

Results of the analysis showed that reverse outsourcing incentives, company size, and type of ownership potentially affect the development of green technologies. High-income government or foreign enterprises should pay more attention to environmental protection, energy saving and reducing pollution emissions, while small and medium-sized enterprises should ignore them. In a study entitled "The role of outsourcing management process in improving the effectiveness of logistics

outsourcing" which aimed at clarifying the effects of the outsourcing management process, Zhou et al. (2017) proposed model based on data collected from a survey of 420 general computer manufacturers in China. The results showed that the outsourcing management process causes two different types of logistics outsourcing, while logistics outsourcing directly affects costs and delivery and logistics outsourcing directly affects performance through interaction with the outsourcing management process. Obtaining opinions of more than 200 experts in the field of logistics outsourcing in Bulgaria, Rakovska (2016) prioritized the outsourcing decision drivers in this field, the most important of which are: achieving high quality of service, short delivery time, reliability, delivery time, and compatibility with immediate orders ^[36]. Kenyon et al. (2015) state that companies undertake a variety of performance improvement practices, which outsourcing production is common among many experts ^[37]. They examined the impact of outsourcing of production in general on the operational performance of companies and its components (production time cycle, cargo time order, delivery, operational equipment effectiveness) and customer loyalty by analyzing secondary data among a wide range of materials surveyed by factory production managers. They found that outsourcing of production had harmful effects on operational performance and has a significant reduction in operational equipment effectiveness and delivery time. They also observed that outsourcing of production has a negative impact on customer loyalty when has an operational performance. Xiaowei Zhumanaged outsourcing risks and outsourcing risks, including time, quality and associated costs. Based on his findings, an optimal model of outsourcing contract includes these three factors and the contractor should share information about internal variable costs with the contracting party in outsourcing. The optimal outsourcing contract is the result of numerical experience and its presentation. In his research, he pays special attention to the value of information or information at risk in outsourcing management. Zitkiene and Blusyte (2015) state that due to the expansion and excellence of human resource outsourcing in both aspects of production and service sector, its measurement and scaling has been complicated to date. In their research, outsourcing relates to strategy and reconstruction of issues ^[38]. They discuss the benefits of human resource outsourcing and examine outsourcing models. Based on them, human resource outsourcing will become more popular among organizations. Their research is specifically related to service companies, in many of which the human factor is a vital factor. Based on their results, HRO can perform non-core activities for service providers, which will improve and increase operational efficiency.

Methodology

This study is fundamental-applied in terms of objective and descriptive-survey in terms of method. The statistical population of the study included 16 managers and 22 experts of the General Directorate of Roads and Urban Development of Mazandaran and 27 experts of service provider companies in 2019. According to Krejcie and Morgan table, the statistical sample of the research included 14 managers, 19 skilled experts and 23 experts of the service provider company. Managers included general directorate managers and deputies, heads of city departments, and organizational experts include experts who have at least a master's degree or higher with more than five years of employment history or at least a bachelor's degree with more than fifteen years of employment history. Researcher-made questionnaires were used to collect the data. After reviewing the research literature and research background and obtaining the opinions of scientific and academic experts and professors who had sufficient experience and appropriate scientific backgrounds, criteria and sub-criteria were extracted and a pairwise questionnaire was distributed among the subjects. The pairwise questionnaire includes criteria and sub-criteria, in the following tables and is scored from one to nine. In this questionnaire, score one indicates that two indicators have equal importance, and score nine indicates that one indicator is more important than the other indicator. After stating the objective, importance and necessity of the research, principle of confidentiality of personal information in the questionnaire, the respondents completed it. The face and content validities of this tool were confirmed by experts and its reliability was analyzed based on the incompatibility rate using Expert Choice software and it was reported less than 0.1. In the present study, a hierarchical analysis process was used to determine the weight of the criteria and their relationships. The process of hierarchical analysis is one of the most well-known multi-purpose decision making techniques, which was first invented by Al-Saati in 1970s.

The basis of this decision-making method is pairwise comparisons. The decision-maker begins by providing a hierarchical decision tree. The decision hierarchy tree shows the compared factors and the competing options evaluated in the decision. Then, a series of pairwise comparisons is performed. These comparisons determine the weight of each factor in line with the competing options evaluated in the decision. Accordingly, the effective criteria were identified and then the main criteria were divided into smaller components. Pairwise comparisons and relative weights are expressed with quantitative values of between 1 and 9. Criteria and sub-criteria were identified by experts and brainstorming method, and then, the relationships of different criteria to each other were determined. Finally, pairwise comparisons were performed using Expert Choice software and the compatibility rate was calculated. Expert Choice software is a powerful tool for multi-criteria decision making based on the Hierarchical Analysis Process method, first proposed by Thomas Al-Saati, one of the

founders of Expert Choice at the University of Pennsylvania. This software has many capabilities. In addition to designing a hierarchical decision diagram, designing questions, determining preferences and priorities and calculating the final weight, it can analyze the sensitivity of decision making to changes in the parameters of the problem. Most importantly, in many cases, appropriate diagrams and graphs were used to present the results and performances (Torkian et al., 2012). Pairwise questionnaires, shown in the following tables, were distributed among the subjects and were collected at an appropriate time, so that the output of research data to have a higher quality. In

the next step, the collected data were analyzed in Expert Choice software, the results of which are described in the results section.

Table 1- Pairwise comparison of criteria

criteria	planning	decision-making	evaluation and management
planning			
decision-making			
evaluation and management			

Table 2-Pairwise comparison of planning sub-criteria

planning criteria	cost saving	time saving	reduced risk	maximizing efficiency	service quality improvement	focus on core activities	increasing flexibility	reduced bureaucracy	information disclosure
cost saving									
time saving									
reduced risk									
maximizing efficiency									
service quality improvement									
focus on core activities									
increasing flexibility									
reduced bureaucracy									
information disclosure									

Table 3- Pairwise comparison of decision sub-criteria

decision-making criteria	acceptance of change in organization	compliance with rules and regulations	improving management of relationships	obtaining competitive advantage	selecting the best method to obtain suppliers	employee satisfaction	meeting the changing needs	culture building in creation of organization creativity
acceptance of change in organization								
compliance with rules and regulations								
improving management of relationships								
obtaining competitive advantage								
selecting the best method to obtain suppliers								
employee satisfaction								
meeting the changing needs								
culture building in creation of organization creativity								

Table 4- Pairwise questionnaire of evaluation and management sub-criteria

evaluation and management criteria	feedback on outsourced criteria	measurement of success	documenting doing of works	risk sharing	innovation in services	achieving high level products	costs of changing the suppliers	more focus on core activities
feedback on outsourced criteria								
measurement of success								
documenting doing of works								
risk sharing								
innovation in services								
achieving high level products								
costs of changing the suppliers								
more focus on core activities								

Results

After distributing the pairwise questionnaire among the subjects and analyzing the collected data, the results shown in the following figures were obtained.

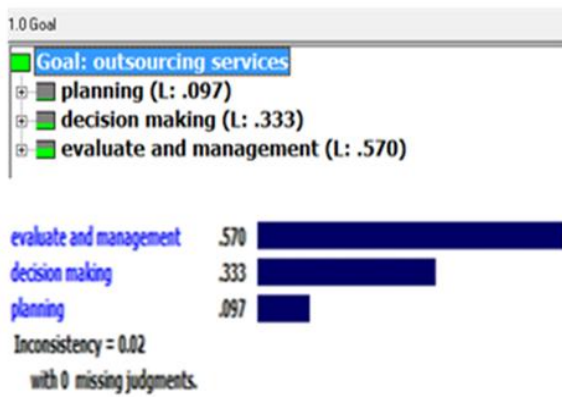


Figure 2- results of comparison of criteri

Based on the results of Figure 1, the criteria of evaluation and management with a weight of 0.570, decision-making with a weight of 0.333 and planning with a weight of 0.097 are arranged. As a result, evaluation and management indicator is more important than the decision and planning indicator and decision-making indicator is more important than planning.

of 0.123, time saving with a weight of 0.121, risk reduction with a weight of 0.119, maximizing efficiency with a weight of 0.099, improving the quality of services with a weight of 0.087, increasing flexibility with a weight of 0.079, reduced bureaucracy with a weight of 0.079, and focus on core activities with a weight of 0.077 have been arranged, indicating the relationship between them and degree of their importance.

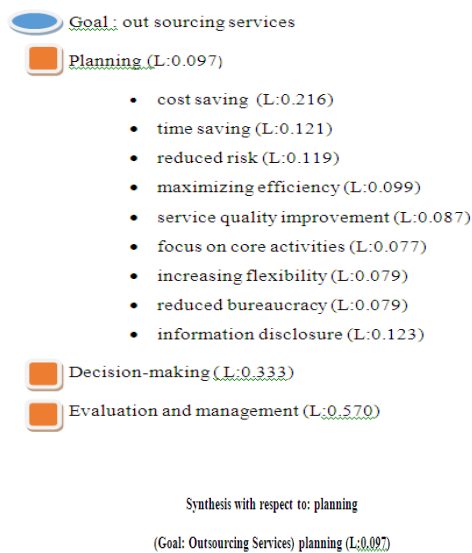


Figure 3- results of comparison of planing sub-criteria

Based on the results of Figure 2, the sub- criteria of cost savings witha weight of 0.216, disclosure of information with a weight



Figure 4- Results of comparison of decision sub-criteria

Based on the results of Figure 3, sub-criteria of compliance with the rules and regulations with a weight of 0.433), selecting the best method to obtain suppliers with a weight of 0.204, gaining competitive advantage with a weight of 0.123, improving relationship management with a weight of 0.063, acceptance of change in the organization with a weight of 0.061, employee satisfaction with a weight of 0.047, culture building in creating organizational creativity with a weight of 0.035, and meeting changing needs with a weight of 0.034 have been arranged, indicating the relationship between them and their degree of importance.

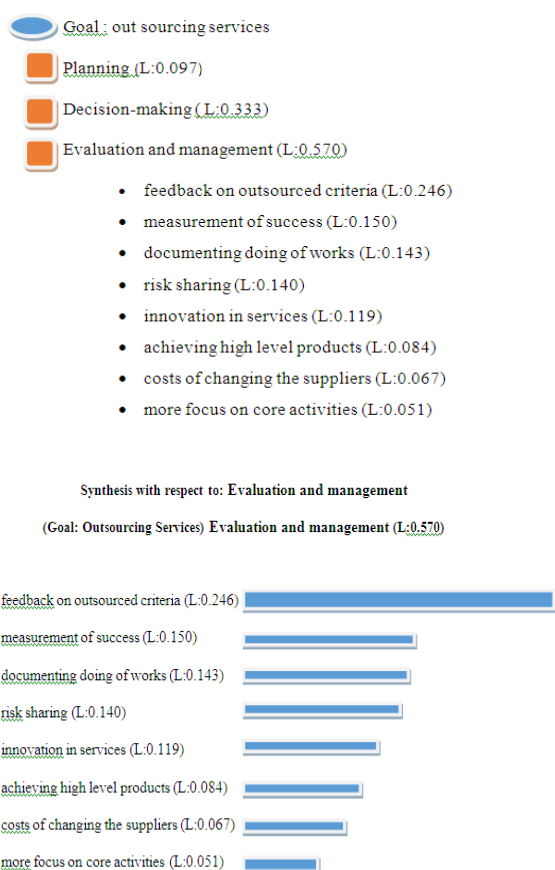


Figure 5- Results of comparison of evaluation and management sub-criteria

Based on the results of Figure 4, the sub-criteria of focusing more on core activities with a weight of 0.246), documenting of works with a weight of 0.150, costs related to change of suppliers with a weight of 0.143, feedback on outsourced activities with a weight of 0.140, measurements of success with a weight of 0.119, risk sharing with a weight of 0.084, achieving a higher level of service with a weight of 0.067 and innovation in services with a weight of 0.051, have been arranged, indicating the relationship between them and degree of their importance.

Each conceptual model is the starting point and basis for conducting studies, as it identifies the variables of research and the relationships between them. To conduct a study in the present design, various conceptual models can be used, but according to the preliminary expert analysis, the models of Zitkiene and Blusyte (2014) and Alvani and Sharifzadeh (2007) and IAP methodology for 7 headquarters and subordinate offices were selected throughout the province [38]. After obtaining the weights of criteria, which were obtained with the help of Expert

Choice software and people answers, a checklist with the weights written in front of them was compiled, so that the total weights of the criteria for planning, decision making and evaluation and management are equivalent to 3000 and their sub-criteria are written in front of them.

planning	800
Cost saving	250
Information disclosure	200
Time saving	150
Reducing risk	100
Maximizing efficiency	100

decision-making	1000
Compliance with rules and regulations	300
Selecting the best method to obtain suppliers	150
Obtaining competitive advantage	150
Improving management of relationships	150
Acceptance of change in organization	100
Employee satisfaction	50
culture building on creation of organization creativity	50
meeting changing needs	50

evaluation and management	1200
Focusing more on core activities	350
Documenting doing of the works	200
Costs of changing the suppliers	200
Feedback on outsourced activities	150
Measurement of success	100
Risk sharing	100
Achieving higher level of services	50
Innovation in service	50

Then, this checklist that was written without weights and in the form of classified in spectra shown in the table above for outsourced projects including: IT services, double control over buildings being constructed in cities, consulting companies of contracting party with the organization was distributed among the managers and experts of the general directorate and the service providers and the following results were obtained: planning 700 points, decision making 1000 points and evaluation and management 800 points. Then, according to the steps taken and the answers of the people, the following executive model was developed and presented:

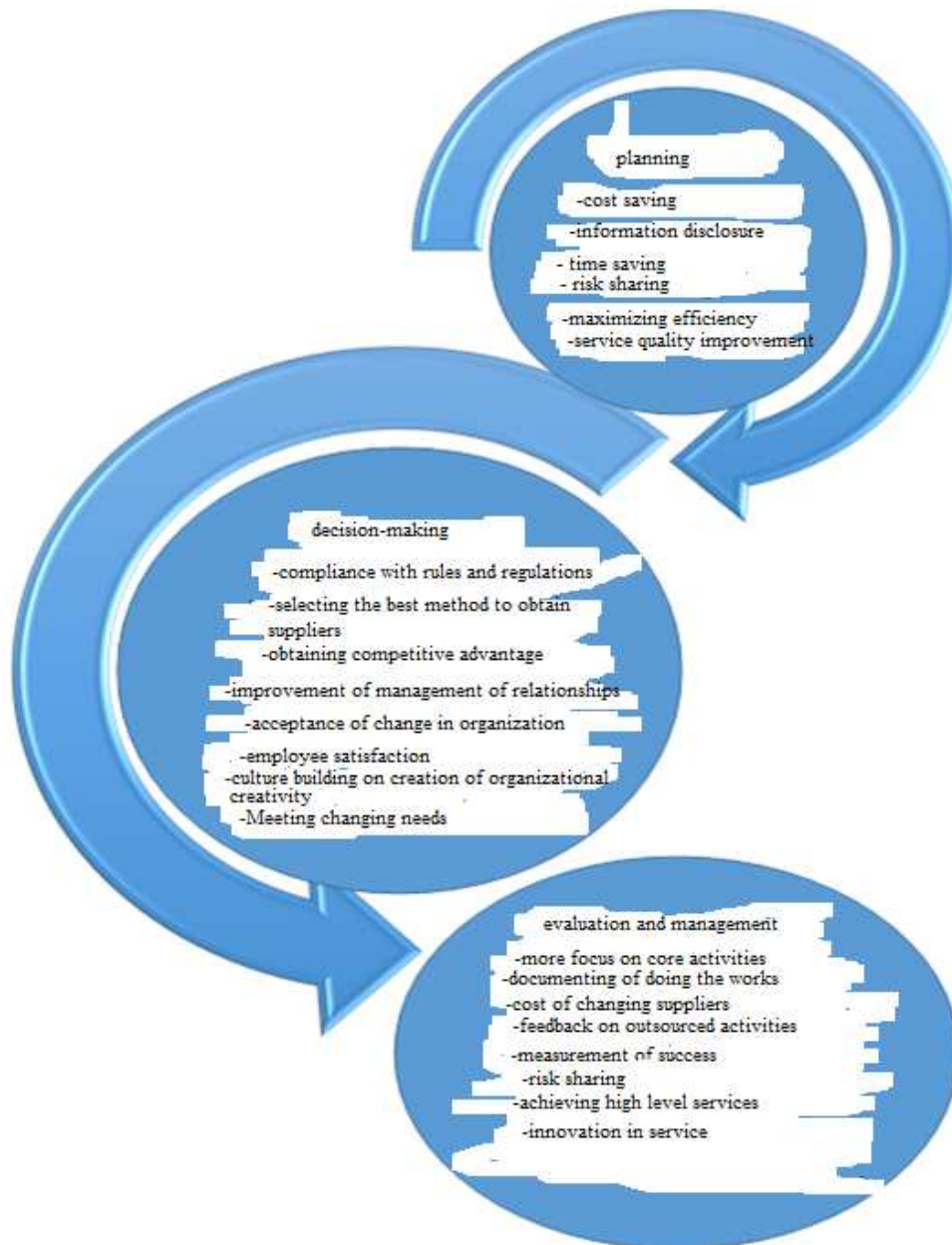


Figure 6- conceptual model of research

Discussion and Conclusion

The decision to do an activity within the organization or outsource it is a vital decision that will have various impactson different aspects of the organization now and in the future. Once the factors were identified by the managers of the organization, the next step is to find a way to reach a general result on the effect of the factors. Identifying appropriate criteria for outsourcing services and prioritizing them can play a major role in development of an organization. As a result, the present study was conducted with the aim of identifying and prioritizing service outsourcing criteria. The results of present study showed that outsourcing of services include three criteria of planning, decision-making, evaluation and management, along with sub-criteria of cost saving, time saving, risk reduction, maximizing

efficiency, improving service quality, focusing on activities, increasing flexibility, reducing bureaucracy and information disclosure, acceptance of change in the organization, compliance with the rules and regulations, improving management of relationships, gaining competitive advantage, selecting the best way to obtain suppliers, employee satisfaction, meeting the changing needs and culture building on creation of organizational creativity, feedback on outsourced activities, measurement of success, documenting of doing the works, risk sharing, service innovation, achieving a higher level of service, costs of changing suppliers, and focusing more on core activities. The results of present study were in line with those of previous studies in this regard.

For example, Alvani and Ashrafzadeh (2008) reported that with increasing the number of potential suppliers, the direct

relationship between standardization, technology uncertainty and price based on competition with the tendency to outsourcing such service activities will become stronger. In another study, Kim and Min (2007) in South Korea introduced three main criteria of expectations, risk and environment and eight sub-criteria in identifying outsourcing criteria. The industrial management organization has its own methodology for providing outsourcing consulting services. This methodology includes 4 phases, 4 stages and 4 steps of IAP under title of executive methodology. The three phases of this methodology include designing, implementation, and monitoring of performance. Obtaining opinions of 200 experts in the area of logistic outsourcing in Bulgaria, Rakovska (2016) also prioritized the criteria for outsourcing decision in this area, the most important of which included achieving high quality of service, short delivery time, reliability of delivery time, compatibility with immediate order^[36]. Xiaowei Zhumanaged outsourcing risks and outsourcing risks, including time, quality and associated costs. Based on his findings, an optimal model of outsourcing contract includes these three factors. In his research, he paid special attention to the value of information or information at risk in outsourcing management^[39]. Zitkiene and Blusyte (2015) introduced attention to human resources as an effective principle in outsourcing^[38]. Rajesh et al. (2013) surveyed the logistics outsourcing situation in India and identified the most important incentives for logistics outsourcing as contribution to focus on core capabilities, improving customer service, and reducing logistics costs, respectively^[40]. Salanta et al. (2012) also conducted a study to investigate the benefits and risks of logistics outsourcing in 125 Romanian companies and evaluated the factors of reducing costs, sharing risk, increasing competitiveness, increasing customer service, focus on key capabilities in outsourcing decision making as important factors^[41].

Considering the priorities that were identified and the results obtained from data collection, it was found that the three criteria of evaluation and management, then decision-making and finally planning, were important and arranged, respectively. Also, each criterion has its own sub-criteria that are related to each other, so the sub-criteria of planning are cost saving, information disclosure, time saving, risk reduction, maximization efficiency, improving service quality, increasing flexibility, reducing bureaucracy and focusing on core activities, respectively. Sub-criteria of decision-making include compliance with rules and regulations, selecting the best way to obtain suppliers, gaining competitive advantage, improving relationship management, accepting change in the organization, employee satisfaction, building culture of creation of organizational creativity and meeting changing needs, respectively. Also sub-criteria of evaluation and management are more focus on core activities, documenting of doing works, costs of changing suppliers, feedback on outsourced activities, measurement of success, sharing risk, achieving a higher level of service and service

innovation, respectively. It is expected that managers and relevant officials reduce the risks of the organization and take an effective step to develop and increase the effectiveness of organizations by considering these criteria and understanding the current situation and predicting the future.

References

1. Amiti M, Wei SJ. Fear of service outsourcing: is it justified?.
2. Ashrafzadeh F. A comprehensive model for service outsourcing, *Tadbir Magazine*, 2004; 147, 41-44.
3. Beimborn D, Franke J, Weitzel T. Drivers and inhibitors for outsourcing financial processes-a comparative survey of economies of scale, scope, and skill. *AMCIS 2005 Proceedings*. 2005 Jan 1:421.
4. Cheshm Berah M, Mortazavi M. Effective outsourcing management, Tehran, Mehraban Publication Institute, 2007.
5. Choudhry AZ. Application Outsourcing Governance Model, Master's Thesis University in information, Linnaeus, 2014.
6. Gerbl M, McIvor R, Humphreys P. Global services outsourcing: Critical aspects and future directions. *InPOMS 20th Annual Conference 2009 May 1* (pp. 1-23).
7. Ghaderi M. Designing optimal methods for outsourcing information technology activities in the physical education organization. Master Thesis of Islamic Azad University, Central Tehran Branch, 2005.
8. Goodwin P, George W. decision analysis for management judgment. third edition, John Wiley&Sons, Ltd, 2004.
9. Hashemi Ghorbanloo M. Designing a decision support system for outsourcing management. Thesis of Tehran University, 2007.
10. Hodavand S. Comprehensive Quality Management in Engineering Education Programs, *Iranian Journal of Engineering Education Quarterly*, 2010; 47, 27-48
11. Horgos D. International Outsourcing-Some Measurement Problems. Mimeo; 2008.
12. Jiang B, Belohlav JA, Young ST. Outsourcing impact on manufacturing firms' value: Evidence from Japan. *Journal of Operations Management*. 2007 Jun 1;25(4):885-900.
13. Kenyon GN, Meixell MJ. Success factors and cost management strategies for logistics outsourcing. *Journal of Management and Marketing Research*. 2011 Apr 1;7:1.
14. Khalili K, Azizzadeh F, Adhami A. Investigating the relationship between outsourcing and performance based on Balanced Score Card (Case study: Ilam Post Office). *Journal of Data Envelopment Analysis and Decision Science*. 2014;2014:1-1.
15. Kristiansen J. A guide to effective outsourcing. international management program, 2001.
16. Lankford WM, Parsa F. Outsourcing: a primer. *Management Decision*. 1999 May 1.

17. Managhebi H. Thesis entitled "Factors Affecting Information Technology Outsourcing Decision" A Case Study of the National Airway Organization", Faculty of Management, Allameh Tabatabaee University, 2006.
18. Mehregan MR, Salami H, Khajeh M. Presenting a multi-criterion decision making model for outsourcing business processes using Network Analysis Process Technique, *Journal of Development and Transformation Management*, 2011; 6, 17-30.
19. Meng H. A decision Framework For Product Global outsourcing in small and medium-sized companies, MS Dissertation, University of Windsor(Canada), 2005.
20. Motadel MR, Afshar Kazemi MA, Dastbaz S. Providing a model to support outsourcing decisions of information technology projects using group decision making method, *management research*. Issue 89, Summer, 2010. 1-14.
21. Nouri Kuhani P, Noor Al-salna R, Azimi N, Sayad M. Analysis of factors affecting the outsourcing of organizational activities. *Scientific Journal of Supply Chain Management*, 2014;40, 16-45.
22. Ok ST. International outsourcing: empirical evidence from the Netherlands. *Journal of Business Economics and Management*. 2011(1):131-43.
23. Olowu D. Introduction new public management: An African reform paradigm. *Africa Development*, Xxvii, 2003; (53),1-16.
24. Osborne D, Gabler T. *Reinventing Government : How the Entrepreneurial Spirit is Transforming the Public Sector*: Addison-Wesley. Reading MA, 1992.
25. Quinn JB, Hilmer FG. Strategic outsourcing, *sloan management review*. Summer.
26. Rajan RS, Srivastava S. Global outsourcing of services: Issues and implications. *Harvard Asia Pacific Review*. 2007;9(1):39-40.
27. Rajesh R, Ganesh K, Pugazhendhi S. Drivers for logistics outsourcing and factor analysis for selection of 3PL provider. *International Journal of Business Excellence*. 2013 Jan 1;6(1):37-58.
28. Rakovska M. Characteristics of Logistics Outsourcing in Bulgaria: The Perspectives of the Logistics Service Providers and their Customers. *Logistics & Sustainable Transport*. 2016 Oct 1;7(1):18-27.
29. Ramezani Z. Investigating and presenting a decision model for outsourcing effective construction processes with a network analysis process approach in the home appliance industry in Tehran province. Master Thesis, Islamic Azad University, Central Tehran Branch, 2010.
30. Rao K, Young RR. Global supply chains. *International Journal of Physical Distribution & Logistics Management*. 1994 Aug 1.
31. Salanta I, Ilies L, Muresan I. A Study on the Benefits and the Risks of Outsourcing Logistics in the Romanian Industry, *Annals of the University of Oradea, Economic Science Series*, 2012; 21(1), 1066.
32. Seyed Javadin SR, Gholipour T H, Valipour B. Outsourcing process, Tehran, Negah Danesh Novin Publications, 2011;
33. Seyed Javadin SR. A comprehensive review of the basic concepts of management and organization theories. Tehran, Negah Danesh Publications, 2011.
34. Shahidi F, Mohammadian A, Yari A. Presenting a systematic model for identifying and strategically determining outsourcing activities, *Second International Conference on Strategic Management*, 2007.
35. Solansky ST. To fear foolishness for the sake of wisdom, 2014.
36. St LK. Outsourcing savings vanish. *The Australian*. 1999 Aug;17.
37. Turkian Tabar, Mansour and Hassoumi, Tahereh, 2012, *The Role of Policies and Organizational Structures on Job Stress of Librarians of Islamic Azad University*, Third Annual National Conference on Modern Management Sciences, Gorgan.
38. Vakili S. Outsourcing, optimal management, etc., *Iranian Bank Saderat Quarterly*, 2007;9, 26-40.
39. Wang S, Song M. Influences of reverse outsourcing on green technological progress from the perspective of a global supply chain. *Science of the Total Environment*. 2017 Oct 1;595:201-8.
40. Xiaowei Z. Management the risks of outsourcing: Time, quality and correlated costs. *Transportation Research Part E, Logistics and Transportation*, 2015. 90 -101.
41. Yang C, Huang JB. A decision model for IS outsourcing. *International Journal of Information Management*. 2000 Jun 1;20(3):225-39.
42. Zitkiene R, Blusyte u. The management model for human-resource outsourcing among service companies. *Intellectual Economics*, 2015; 9 :80–89.