

# **STUDYING THE ROLE OF OPERATIONAL BUDGETING IN DEVELOPING HEALTH SERVICE: A CASE STUDY OF SOCIAL SECURITY TREATMENT MANAGEMENT IN SOUTHERN KHORASAN, IRAN**

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## **Abstract**

*Health service is one of the most basic needs of today communities and its development leads to promotion of people of the society's quality and welfare. This paper aims to evaluate operational budgeting role in health service development. This is an applied study regarding objective and a kind of descriptive-correlation research. The statistical population included managers and experts of Social Security Treatment Management in Southern khorasan) including 100 people. The census method was adopted. Data collection tool was a self-designed questionnaire which was subject to content validity and Cronbach's alpha test (0.86). Inferential statistic viz. Kolmogorov-Smirnov, correlation, regression and single-sample t-test have been used to analyze collected data. The results showed that operational budgeting positively and significantly influence all four dimensions under study of health service management including personnel's skill and knowledge level, health service quality, health centers improvement and assisting patients.*

*Keywords: Operational Budgeting, Health Service Development, Personnel's Skill and Knowledge, Service Quality, Health and Treatment Center Improvement, Assisting Patients*

## INTRODUCTION

Budget is the country's most important financial document. According to the definition of the article 1 of public accounting law, the entire country's budget is the government's annual budget plan predicting incomes and other credit funding sources and estimates the cost of conducting the operation that leads to realization of legal policies and goals (Madani, 1992:53).

The establishment of an outbound budgeting system and its evaluation is carried out in the operational budgeting system instead of a control system and data-centered monitoring. Operational budgeting adds two dimensions including savings and effectiveness to traditional dimensions. Efficiency and effectiveness is differentiated in this operational budgeting system, while there is relationship between effectiveness and performance (Ibrahim Nejbat & Farjond, 2001:228). Operation budgeting is, in fact, plan budget which analyzes plans implementations from the benefit-cost perspective more accurately and clearly. The workload measurement computes fixed price of product or service through workload unit determination method and comparatively and a comparative and analytical comparison is made with norms and standards and the reasons of the increase in fixed cost will be known and finally, it helps organization management improvement and manager is always questioned and evaluated (Farzib, 2007:226). Non-operational and non-transparent being and lack of access to desired objectives are ones of budgeting system's fundamental problems of governmental executive systems (Robinson, 2005:17). So, today, governmental executive systems have turned to modern management approaches including changing their budgeting systems to performance-centered systems because of increase in pressure for improving their performance's accountability and transparency.

Since credit targeted allocation to each organization's activity can provide operational monitoring and expectation of access to costs' results while clarifying the manner of resources distribution, operational budgeting method application will be an effective step toward increasing credits' efficiency and effectiveness (Khoddami poor & Zeinaly, 2007:56).

During recent years, Social Security Organization has strongly felt necessity of planning at organization level because of several reasons including extensive volume of organization's activities across the country, nearness to break-even point of resources to expenditures, etc. and planning has been converted to one of this organization's basic priorities. In such manner that with beginning of country's fourth economic, social and cultural development program, preliminaries of strategic planning implementation (as a long-term program) and organization's five-year program (as a medium-term program) have been provided. Meanwhile, budget will play an important role in this field (objectives and strategies realization) as a whole view mirror of organization's programs and operations.

Among various effects and outcomes that operational budgeting may have, the present research has studied its role in health service in Social Security treatment in Southern Khorasan and examines this issue that up to what extent operational budgeting strategies (planning, cost and performance management) can lead to improvement of four basic dimensions of treatment development (personnel's skill and knowledge, health service quality, health centers improvement and assisting patients). This research's results can help improving performance of organization under study and provide more theoretic recognition regarding relationship between operational budgeting and organizational performance in service organization in healthcare area.

## LITERATURE REVIEW

### Theoretical Background

#### *Operational Budgeting*

A limited definition of operational budgeting is that this type of budgeting allocates resources based on achieving certain and measurable results. As program budget, operational budget is also a classification which shows relationship between spent costs and employed factors on one hand, and obtained work results on the other hand and it specifies that what goods and services have been produced during the fiscal year as a final product or public sector's activities in achieving economic and social objectives. International Monetary Fund defines operational budgeting as follows: operational budgeting is a process or mechanism that seeks to strengthen relationship between spent budget in governmental agencies and obtained output results by using formal performance information in decision-making regarding resources allocation.

Operational budgeting or budget based on performance is a budget set up based on duties, operations and projects which governmental organization are responsible for their implementation. Operational budgeting is a method or mechanism seeks to strengthen relationship between provided industries for public sector on one hand, and this sector's products on the other hand by using formal operational information ( Robinson & Brumby, 2005:102).

United States General Accounting Office defines operational budgeting as follows: it is a concept which relates performance information to budget (Mahdavi, 2006:24). Therefore, operational budget's foundation and nature is based on following four principles:

- a) The work and activity measurement method
- b) Accounting cost price
- c) Use of norms
- d) Use of standards (the same source:23)

It can be totally said that operational classification is used in operational budgeting for credits. Purchased good and services in operational classification are considered and classified as factors and components of activities instead of classifying according to type and nature. For instance, building material and elements consumed by governmental organization is considered and classified as a part of cost price of constructed road, bridge or building, because the mentioned elements and materials combined with other used equipment and services creates certain final result which is a part of governmental organization's duties, objectives and plans. In other words, purchased material, good and service are related to product and final production. Operational classification creates acceptable and real documents and evidence which may be useful in detecting efficiency of different management level and states that the increase in operation volume or the costs for fixed volume is the reason for increasing cost price (Reese Sarkandiz, 2003:32).

#### *Operational budgeting's objectives*

Basically, the main operational budgeting's objective is clarifying budget, assisting optimal allocation and effective use of organization's resources. Operational budgeting's objectives can be generally stated as follows:

- Providing an appropriate basis for decision making on resource allocation.
- Determining measurable and expected results obtained from a certain budget allocation.
- Focus on decision making process on the main issues and challenges by which the unit is faced.
- Creating a logical process for decision making on budget that is directly related to planning, implementing and monitoring, examining and performance reporting.
- Providing the best possible tools based on results in order to ensure that the country's resources are used to meet the essential needs of the society (Mahdavi, 2006:26).

#### *Diamond model*

This model necessitates the existence of six elements in modifying budgeting system to operational budgeting (Hassan Abadi & Najjar Saraf, 2007:39). This model consists of three main elements (planning, cost analysis and performance management) and three empowering elements (change management, accountability system and motivational system).

- 1- **Planning management:** planning approach to budgeting is a permanent approach and creates value added. Operational budgeting symbol must be sought in budgeting based on performance basis. Accordingly, the main factor of operational budgeting system is plan.

- 2- **Costs management:** This element's approach is costing based on activity which will lead to management based on activity. Regarding the measurable, examinable and quantitative services, it is possible to calculate cost price of these services by allocating direct and overcharge costs to topic of cost or service through accepted methods and accounting cost price and then manage the cost through managing the processes and cost stimulants.
- 3- **Performance management:** The main operational budgeting's feature is trying to allocate resources based on performance criteria. Performance is defined by outputs' effective indicators (Hassan Abadi & Najjar Saraf, 2007:42).
- 4- **Change management:** The main purpose of new operational budgeting method is establishment of a direct link between resource allocation through budget and performance. Such approach change requires evolution in budget traditional management which can include granting more authority and flexibility to executive agencies, providing more certainty for them (increasing the amount of confidence in funding requires taking parallel steps) and increasing pressure on executive agencies in order to continuously improve the programs' results.
- 5- **Motivational management:** Establishing a motivation system in organizations is necessary because motivational mechanisms satisfy personnel and improve performance. Motivational system affects managers' authorities and expands their scope of activity in this budgeting system and allows them to manage application of inputs and process change to generate desired outputs and consequences.
- 6- **Accountability system:** This system strengthens accountability to performance and emphasizes on the factors related to performance which are in the domain of program managers' control. Managers' accountability to the scopes under their control will be limited (Hassan Abadi & Najjar Saraf, 2007: 43).

### ***Treatment Development***

Health sector is one of important and essential sectors of each country and requires the consideration of policy makers to this regard. Therefore, paying attention to facilities and proper use of them in this sector is a necessary and inevitable affair and policy makers invite this sector to the most appropriate use of healthcare resources considering that providing people's health is one of the developmental priorities and primary needs for each country (Sajjadi et al, 2008: 2). Accordingly, paying attention to this issue is intensified with restriction in health facilities and service supply, especially in developing countries and reveal the necessity of optima; resource allocation more than before. According to some studies, limited resources related to healthcare sector in most of the undeveloped and even developed countries are insufficiently consumed

and public credits are used for the services without required appropriateness and effectiveness (Nabarro & Cassels, 1994:202). On the other hand, a remarkable amount of allocated budget is annually wasted on this sector (Hall, 1999: 95). Health sectors' indicators are generally divided into hope to life, infant mortality rate, the number of hospital beds, and number of physicians, number of nurse and paramedic, public health expenditures, share of public health expenditure in gross domestic production, mortality rate in one thousand birth, mortality rate of children younger than five years old, raw mortality rate, total fertility rate, access to health facilities, etc. and these indicators can be classified from different perspectives and respecting applied data and information.

### *Measurement Indicators of Health Development*

Development indicators determination is the main step in regional development studies. Development indicators are, in fact, statistical statement of existing phenomena in region. Indicators are basically derived from division of variables into a suitable denominator (Kalantari, 2001:111). Some health development indicators include:

- 1- Institutional indicators: Institutional indicators are those that play an important role in health development process. Some institutional indicators include: ratio of active medical institutions, ratio of bed in active medical institutions, ratio of health centers, etc.
- 2- Expert manpower indicators: expert manpower means specialist physicians working at country level. Expert manpower indicators include: ratio of internists, the ratio of cardiologists, the ratio of pediatricians, etc.
- 3- Non-expert manpower indicators: Non-expert manpower in health sector refers to people who do not have high expertise and it mostly includes general practitioners or people with lower level qualifications. These indicators consist of ration of general practitioners, ration of paramedic, ration of technicians, ration of nurses, etc.
- 4- Rural health indicators: This group of indicators which is allocated to rural parts of provinces includes ration of active health homes, ration of rural health home staff, percentage of villages covered by active health homes, etc.

### **Empirical Background**

Pourali & Kakvan (2016) conducted a study entitled "the feasibility of establishment of operational budgeting in Babul University of Medical Sciences and Health Services". This is an applied research regarding objective and it is considered as an analytical study in which both two methods including library and field were used for data collection. Research's statistical population includes 30 president and all deputies, financial managers, program and budget

managers, university budget experts, heads and financial deputies of colleges and hospitals of Babul whose views were analyzed by software SPSS in a census. According to the present research's findings, ability (performance assessment, manpower, technical), authority (legal, procedural, organizational) and acceptance (political, managerial, motivational) were not determined as obstacles of operational budgeting establishment according to model. This study's findings show this fact that Babul University of medical Science and Health Service currently has the ability, authority and acceptance required for operational budgeting implementation.

Keramati & Bayat (2016) conducted a study entitled "evaluation and rating dimensions and components of operational budgeting implementation in Iran's Water and Wastewater Companies". This is a field method research and questionnaire has been used to collect data. Statistical population included all financial personnel of country's Water and Wastewater Company in 2015. Factorial analysis technique has been used to analyze data. The results indicate that all threefold dimension and nine components influence operational budgeting implementation in Water and Wastewater Company. In addition, ability placed at the first rank and authority and acceptance placed in second and third rank regarding effect on operational budgeting. Therefore, the ability of operational budgeting regarding ability of performance assessment, technical and manpower ability should be created for its successful implementation before any action.

Abbasi & Rashidi (2012) conducted a study entitled "evaluation of training courses implementation effect on performance of Social Security Organization's personnel". For this purpose, a 50 -number sample of participated personnel (161 people) were studied from six branches of province according to screening method. The results of repeated measures method and multivariate tests, Machala test and analysis of variance test showed that implementing training course of how to calculate the claims files has not significantly influenced the decrease in files sent to primary boards, but it has had a significant effect on decreasing the number of cash debts correction of workshops' claim files.

In a research entitled "feasibility study of operational budgeting designing and establishment in Iran's governmental universities (case study: Tehran University), Mashayekhi et al. (2014) emphasized necessity of operational budgeting system establishment and applying budgeting system based on activity ( as a part of operational budgeting system) considering the use of costing system based on activity in Tehran University.

In a research entitled "investigating the effect of operational budgeting system on Agricultural Bank's performance by using balanced scorecard model", Zeinaly et al. (2014) have concluded that operational budgeting has a positive significant effect on performance of

Agricultural bank's branches in Tehran and its dimensions including financial performance, customers' performance, internal processes performance and growth and learning performance.

Oryanzadeh Ardakani et al. (2014) conducted a study entitled "the relationship between budgeting and accounting standards for the public". In order to investigate this matter, some questionnaires were distributed among auditors and technical experts of the Supreme Audit Court and 320 questionnaires were finally collected. Considering data distribution, non-parameter tests such as Wallis classic analysis, Wilcoxon was used. The results showed that performance budget implementation influences governmental auditing.

In a research entitled "identification and prioritizing the effective factors on operational budgeting in telecommunication company by using Topsis method" in East Azerbaijan Telecommunication Company, Pakmaram et al. (2012) have concluded that environmental, administrative and operational controls are essential for operational budgeting implementation and their absence in organizations is an obstacle to implement operational budgeting. They have also stated that among the mentioned factors, environmental factor is the most effective one and monitoring and executive factors are in the next priorities.

In a research entitled "operational budgeting in United States-What that is required by the law to enforce it" Lu, Willoughby, Katherine, Sarah (2011) have investigated the content of performance budgeting law and its relationship with executive quality of operational budgeting system. The recent studies show that the states where operational budgeting is implemented well approve rules and regulations related to operational budgeting system compared with the states where operational budgeting is not implemented or poorly implemented. Their research's results show that performance operational budgeting which includes detailed instructions regarding development, reporting and the use of performance data will lead to stronger use of performance budgeting system in United States.

A review on research history shows that little researches have been conducted regarding the benefits of operational budgeting in development of health service and medical organizations quality despite extensive researches regarding operational budgeting's requirements and consequences in governmental and service organizations. The present study seeks to relatively eliminate this gap.

### **Research's Conceptual Model**

Research's conceptual model has been presented as figure 1 according to empirical and theoretical background. Accordingly, four pre-requisites of healthcare development including personnel's skill and knowledge, health service quality improvement, health centers improvement and assisting patients have been considered as dependent variables and



operational budgeting with three mechanisms including planning, cost management and performance management have been considered as independent variables.

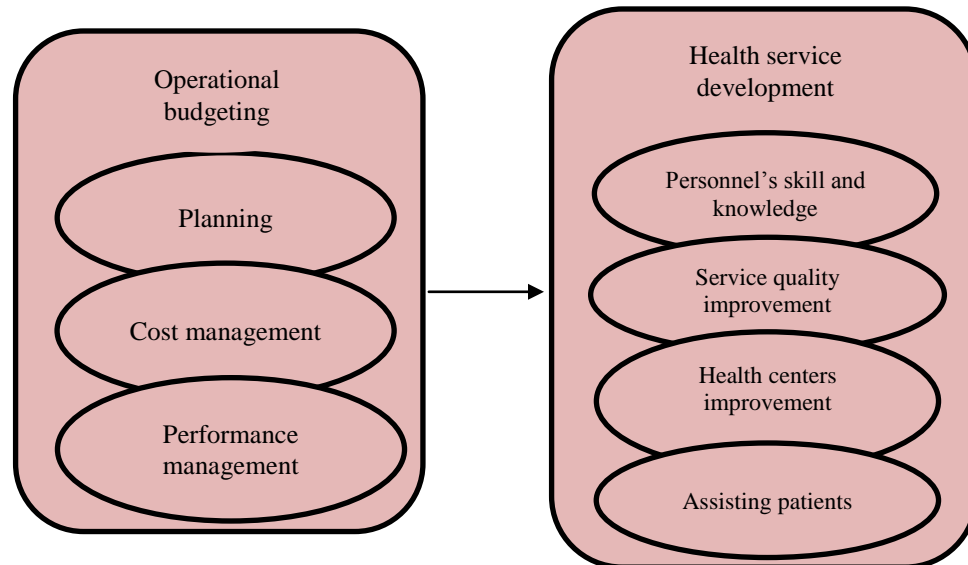


Figure 1. Research's Conceptual Model

## RESEARCH METHODOLOGY

This is an applied research regarding objective because it aims to solve real issues in organization. This is a descriptive-correlation research because it seeks to obtain some information regarding viewpoints and opinions and also finding relationship between variables. It is considered as a quantitative research according to type of data and data analysis method.

This research's statistical population includes health department management's managers and experts of health management of Social Security in Southern Khorasan.

The units covered by this management include the head of treatment management, the medical records office, a hospital in Brigand and four clinics in Tubas, Ferdos, Quinn and Nehbandan and the number of respondents is equal to 100 people according to conducted estimation. Census method has also been used for sampling. It means that all the members have been under referendum.

Data collection tool has been a research-made questionnaire take from research literature. This questionnaire includes 32 questions based on 5-level Likert spectrum. Questionnaire's validity has been confirmed according to a survey of academic expert and masters in treatment management of Social Security in southern Khorasan. Questionnaire's reliability has been also computed by Cronbach's alpha that was equal to 0.87 and because this is more than 0.70, so it has been accepted.

Table 1. Reliability Coefficient

Variable	Operational budgeting	Personnel's skill and knowledge	Health service quantity	Health centers improvement	Assisting patients
Reliability	0.78	0.84	0.79	0.81	0.85

The data was subject to inferential statistical methods including Kolmogorov-Smirnov, correlation, regression and one sample t-test have been used to analyze data by software SPSS.

## ANALYSIS AND FINDINGS

Kolmogorov-Smirnov test has been used to evaluate normality of data collection whose results have been presented in table 2. Since significance level of all variables is more than 0.05, data distribution is normal and so, the tests related to parametric distribution are used for data analysis.

Table 2. Investigating normality of research variables distribution (Kolmogorov-Smirnov test)

Variables	N	Mean	Standard deviation	Kolmogorov-Smirnov test	Significance level
Planning	100	3.20	0.6336	1.227	
Cost management	100	3.36	0.7070	1.186	0.077
Performance management	100	3.21	0.5067	0.179	0.123
Operational budgeting	100	3.26	0.5479	0.934	0.347
Personnel's skill and knowledge	100	3.22	0.5639	1.266	0.081
Health service quality	100	3.32	0.8714	1.149	0.079
Health centers improvement	100	3.31	0.8023	1.170	0.126
Collaboration with patients	100	3.43	0.9336	1.234	0.078
Expanding treatment through required training	100	3.32	0.6447	1.205	0.109

Pearson correlation coefficient and regression test have been used to test research's hypotheses. This analysis's results have been offered in table 3 and 4.

Table 3. Pearson correlation coefficient between operational budgeting and health service development dimensions

Relationship between operational budgeting with ....	Health care development		Type of relationship	Intensity of relationship
	Correlation coefficient	Significance level		
Personnel's skill and knowledge	0.592	0.000	Positive	Average
Health service quality improvement	0.571	0.000	Positive	Average
Health center improvement	0.524	0.000	Positive	Average
Assisting patients	0.532	0.000	Positive	Average

The results of Pearson correlation test show that since significance number related to all dependent variables is less than 0.05, there is a significant relationship between operational budgeting and all four dimensions of health service development. With respect to obtained correlation coefficient, this relationship is positive and its intensity is average.

Table 4. Regression test between operational budgeting and health service development's dimensions

Variables: operational budgeting, etc.	Non-standard coefficient		Standard coefficient	T statistic (t)	Significance level (R <sup>2</sup> )	The amount of determination coefficient
	B	Standard deviation	Beta			
Personnel's skill and knowledge	1.237	0.277		4.463	0.000	0.350
	0.609	0.084	0.592	7.262	0.000	
Health service quality	0.363	0.436		0.833	0.407	0.326
	0.436		0.833	0.407	0.326	
Health center improvement	0.815	0.417		1.957	0.053	0.275
	0.797	0.126	0.542	6.091	0.000	
Assisting patients	0.482	0.482		1.000	0.320	0.283
	0.906	0.146	0.532	6.219	0.000	

According to obtained determination coefficient value in relation with research's variables, a positive and significant impact of operational budgeting on four health service development's dimensions is certifiable. Accordingly, it can be said that operational budgeting respectively

explains 35%, 32%, 27% and 28 percent of change in personnel's skill and knowledge, health service quality, health center improvement and assisting patients.

One sample t-test has been used to examine existing condition of variables under study in research's statistical population. This test's results have been presented in table number 5.

Table 5. One sample t-test of variables under study in research's statistical population

variables	Mean	Standard deviation	T statistic	Significance level
Personnel's skill and knowledge	3.22	0.5639	3.945	0.000
Health Service quality	3.22	0.8714	3.729	0.000
Health centers improvement	3.31	0.8023	3.957	0.000
Assisting patients	3.43	0.9336	4.686	0.000
Treatment development through required training	3.32	0.6447	5.050	0.000
Operational budgeting	3.26	0.5479	4.765	0.000

As it is observed in table 5, mean of variables is more than 3, the amount of statistic t is positive (more than 2) and significance level is less than 0.05. This issue indicates that existing condition of operational budgeting including planning, cost management and performance management and required health service development's components including personnel's skills and knowledge, health service quality, health center improvement and assisting patients are at desirable level in healthcare management of Social Security in Southern Khorasan.

## DISCUSSION AND CONCLUSION

This research aimed to investigate the relationship between operational budgeting establishment and healthcare development through required training to personnel in healthcare management of Social Security in Southern Khorasan. According to existing information and literature in this field, some hypotheses were arisen in which in a field study, it is determined that there is a positive and significant relationship between operational budgeting establishment and healthcare development through required training to personnel.

Complexity of Social Security's functions, in term of size and type of tasks, led to a certain complexity in this organization's budgeting regarding nature. Operational budgeting tries to improve government's plans effectiveness, efficiency and accountability through obliging executive agencies to focus on program results. This system aims to help managers for improving programs performance through better production and presentation regarding

effectiveness of government's costs and programs and its purpose is creating a clearer and closer link between resources and results.

The results obtained from data analysis by the help of Pearson correlation test showed that there is a positive and significant relationship between operational budgeting and health service development. Therefore, we can conclude that effective implementation of operational budgeting mechanisms including Planning, Cost management and Performance management can improve performance of healthcare organization under study. This conclusion has been consistent with findings of Jordan & Hackbart in 2005 which concluded that performance measuring improves accountability to executive systems. King et al. in 2010 found that codified budgeting is related to size and structure organizations should consider its relationship with structure, strategy and lack of perceived environmental certainty in order to use and expand this codified budgeting.

According to these results, we can offer the following applied suggestions in order to develop health service in healthcare organizations and other similar ones:

- establishment of costing system based on (ABC) activity in healthcare management of Social Security in southern Khorasan.
- The use of executive instructions, forms and standards of operational budgeting for preparing annual budget by relevant experts.
- developing strategic plans and consequently, mi-term and short-term programs and renewal of Social Security Treatment management in southern khorasan fits with operational budgeting.
- try to create a clear image of organization condition (potential and actual potencies) and presenting an applied program for treatment development.
- Holding extensive training courses for different levels of organization's managers and experts in order to be familiar with manpower concepts and empowerment (enhancing the level of skill and knowledge) related to operational budgeting. This training should be comprehensive and inclusive, practical and continuous.
- The use of efficient and expert human resources in operational budgeting.
- Creating motivation in personnel through fair payment, paying attention to individual's expert opinion, eliminate inefficient managers and addressing their financial and spiritual problems.
- Establishment of efficient software and creating comprehensive information and reporting system in the financial, programs, processes and organizational performance areas.
- Providing appropriate structure in order to offer required and qualified service.

- Enabling the personnel in presenting qualified service
- Educate and culture making the result-centered approach and improving performance in organization.
- Establishment of efficient and accurate financial system in order to fully collect financial data and computing cost price of products and service according to activities and application of obtained information in the area of costs management.
- Holding justification sessions with units regarding cost budget expenditure related to it and establishing control system of approved budgets' control system and relevant cost efficiency.
- Educate and culture making the collaboration approach with patients.
- Establishment of assessment and performance management system at level of programs and personnel.

## RESEARCH LIMITATIONS

Some of the most important restrictions of this research that lead to generalizing its results cautiously include:

- Absence of a standard data collection tool
- Inherent restrictions related to data collection tool (questionnaire); Since questionnaire indicates person's understanding of reality, The possibility that these perceptions may not be fully correspond to reality should not be ignored.
- With respect to this issue that theoretical model (diamond model) consisting of main elements including planning, cost analysis and performance management and empowering elements including change management, accountability and motivational management. But the author has been merely selected and assessed main elements.
- In this research, perspective of managers and experts of Social Security's healthcare management in Southern Khorasan has been studied. Therefore, lack of a research's wide scope is also one of research's restrictions.

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