Original Article

Strategy mapping and introducing the Health System Reform Plan: An Iranian social responsibility-based approach

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Abstract

Background: The main function of the strategy map is to determine the relationship between cause and effect among the strategic objectives, dimensions, and components of an organization, a large project or plan in which programs can be implemented effectively. The current study aimed to map strategy and introduce the health system reform plan using an Iranian social responsibility-based approach.

Methods: The current study was a qualitative and applied one using the Balanced Scorecard (BSC) principles and the Comprehensive Evaluation Model for Health System Reform Plan in Iran (CEHSRP-IR) model in 2019. the views of 17 experts were selected in management and health issues based on purposive non-random sampling, using Delphi technique paired comparisons, common techniques in strategy mapping, and SPSS and EXPERT CHOICE software, the strategy map of the health system reform plan was designed in Iran.

Results: After elaborating on the fundamental aspects of this research, setting the strategic goals, dimensions, and components, as well as determining the relative weight of the components and dimensions and then prioritizing them, explained their optimal relationships to achieve strategic goals. Finally, using VISIO software, a strategy for the health system reform plan was designed and presented concerning social responsibilities. The present study resulted in designing a strategy map of the health system reform plan in Iran based on 5 dimensions of financial, social responsibility, learning and growth, clients, internal processes, 17 components, and 25 connections.

Conclusion: The current strategy map can be sufficiently comprehensive to effectively implement nationally at various organizational and implementing units' levels of the health system reform plan in Iran.

Keywords: Matched-Pair Analysis; Delphi Technique; Iran; Goals; Social Learning; Health Planning; Organizations

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Introduction

Health and striving to maintain and promote it has always been a top priority in governments, communities, and public policy. In this regard, many programs have been implemented in Iran, the biggest of which is the health system reform plan. Ministry of Health and Medical Education implemented a health plan reform plan with eight executive packages in winter 2014. These packages included a reduction in the rate of payment for patients admitted to public hospitals, supporting physicians to stay in deprived areas, the presence of specialist physicians residing in public hospitals, hoteling quality improvement in public hospitals, improving the quality of hospital services in public hospitals, promoting normal vaginal delivery program, planning for the financial protection of incurable diseases and patients with special diseases and needs. The next phase began after some time in the field of health (1).

The primary mission of the health system is to improve health quality and respond to the needs of the people and society. These needs are permanently changing under the influence of economic, social, and political conditions. On the other hand, diseases and risk factors for health are permanently changing, and responding to these changes is the most important argument in which the health system should be changed and upgraded. The health system reform plan is one that has been greatly able to contribute to financing and benefiting from the health care system, improving the quality of services, maintaining the dignity of patients, and ultimately reducing the public's share of the direct payment of healthcare costs (2).

Four years after implementing, advocates and critics of the plan have raised serious criticism and objections. On the other hand, in line with people's attitudes towards policymaking, advocates, and critics in their evaluations express and declare each aspect they consider important from their perspective. In all these respects, it is clear that the existence of a comprehensive strategy map tailored to the strategic objectives, approaches, dimensions, and plan levels is quite tangible.

Given the above, it is necessary to design a strategy map to determine the hierarchy of goals of the country's health system reform plan, to specify the dimensions of the strategy map, to set goals in each of the dimensions and performance evaluation indicators for each of the objectives. For this purpose, the perfect tool to achieve the goal is required. When selecting tools, it is crucial to note that in recent decades, issues such as organizational learning, knowledge creation, and innovation capacity have been considered as determinants of competitive advantage. Focusing on these issues has made all organizations and companies in the current competitive environment to achieve the goals of stakeholders and target groups successfully, and to implement their strategies, required to know the application of management system and performance measurement (3).

Today, though, the strategic and operational program is difficult to implement, but their successful implementation is much more difficult (4). One of the reasons for the failure of national strategic plans is the lack of a comprehensive view of the pre-operational phase of the programs. A strategic map in the Balanced Scorecard model is the perfect tool for achieving this goal, which specifies various goals of an organization by linking them, as well as determine the paths of success of an organization or company in implementing strategies in each sector. Researchers have used various methods to map strategy, for example, Akbarian et al., in mapping strategy National Iranian Oil Refining and Distribution Company, by experts in the oil industry (5), Li et al., to investigate the correlation between factors and to map the network relationships in the decision-making laboratory evaluation (6), Jasbi et al. in modeling the cause and effect

relationships in the company's strategy map SaipaYadak in Iran by top- and middle-level managers (7), Chen et al., in creating a model of performance measurement and communication for hot water hotels in Taiwan based on the opinions of hotels managers (8), Seyedhosseini et al., for manufacturers of automotive parts (9), and Wu to create a structural evaluation method of banks in Taiwan (10), to map cause and effect relationships using decision making trial and evaluation laboratory (DEMATEL). On the other hand, Carlos to determine key indicators to help managers of companies in the performance evaluation in Italy (11), Su et al., to measure the sustainability performance industry in Taiwan (12), have begun to map cause and effect relationships based on the network model, Analytic Network Process (ANP). Akbarian et al., in another study with the help of industry experts at the National Iranian Oil Refining using regression analysis and correlation, mapped their strategy (13). Olia et al. developed a strategy map using Interpretive Structural Modeling (ISM) model by experts of Yazd Bespar Production Group in Iran, Yazd (14). orbati et al., by integrating causal loop diagram, the structure of a system in system dynamics methodology and BSC, mapped supply chain management strategy in the area of manufacturing industries based on the opinions of experts (15). Aliahmadi et al., in a study, developed an analytical model route on the BSC-based map strategy using graphical structures for representing probabilistic relationships among several variables in an investment company active in Iran's stock exchange (16).

Given the above, it can be said that to map a strategy, different methods have been used, but due to the approach of judgment-based organizations to plan their strategy to do, these patterns cannot be an effective and efficient basis (17). It seems that according to the framework provided by the BSC designers and other models of managing and evaluating the performance, as well as the complexity in the use of strategic objectives and measures and time-consuming to identify and extract them, organizations often receive comments and opinions by senior managers and specialists and experienced staff, during a series of management meetings, to select strategy map and strategic objectives contained therein.

The strategy map in several studies as a case study in the private sector was studied and designed, but few of them were designed to provide a transparent approach (10).

Health policymakers and strategic managers in Iran have also set strategic goals for the health system reform plan that was implemented in 2014, which is currently underway. But the absence of an explanation of a comprehensive evaluation model and a strategy map appropriate to it, the possibility of scientific evaluation, active observation of their programs, has left its productivity and effectiveness in a state of uncertainty. Since developing the strategy map, describes the organization's strategy and helps staff understand it, so it can play a crucial role in strengthening teamwork, and organizational assets align with the strategies of the health system to meet the plan vision. Besides, the strategy map makes a more careful selection of objectives, components, and evaluation indicators of the health system reform plan (3). Therefore, this study was an attempt to use experts' views and refer to the upstream documents of the health system reform plan in Iran (Table 1) and using the CEHSRP-IR model to elaborate the objectives of the plan, the key components, and indicators of its evaluation, and then based on the experts' opinion, to discover cause and effect relations and strategy map of the health reform plan. The plan was developed and presented with a focus on the social responsibility approach and using the capacity of the CEHSRP-IR model.

Table 1. Strategic documents used in the study

Documentation Code	Documentation Title
DM01	Performance evaluation guidelines and processes
DM02	Health Comprehensive Map of the Country
DM03	The sixth five-year development program in the field of health
DM04	Policies issued by the Supreme Leader in the field of health

A. Balanced ScoreCard and its developed model

The Balanced Scorecard was first introduced by Kaplan et al. Initially, to evaluate the performance of various organizations in four areas of finance, citizen and clients, internal processes, and growth and learning was used. But gradually became a powerful tool for planning and strategic management. The finding of Kaplan and Norton confirmed that the successful companies select their goals based on these four perspectives, and to evaluate the success of these goals, metrics are determined. Besides, for each of these purposes, small amounts are targeted for the period specified. Then, the strategic measures to achieve these objectives are planned and implemented. Balanced ScoreCard is a model to balance the following:

- A balance between financial and non-financial indicators
- A balance between internal and external components of the organization
- A balance between late and guiding performance indicators

The Balanced ScoreCard model empowers organization leaders in association with employees, stakeholders, outcomes, and performance incentives to achieve the vision and strategic objectives. Kaplan and Norton found that among the objectives and measures of the four perspectives, there is a cause and effect relationship that connects them. To obtain financial gains, financial perspective, we must consider value creation for our clients, citizen and client's perspectives. This will not be done unless we find superiority in operational processes, internal processes perspective. Achieving operational excellence and value-creating processes is not possible unless we create the appropriate workspace for staff and strengthen innovation and creativity, and learning and growth, in the organization (18). In a study by Alvani et al., Developing a Balanced ScoreCard Model in the Public Sector, another dimension was added to the ScoreCard to better cover the views of external stakeholders in evaluating organizations (Figure 1). In defining this dimension, he stated that separation of the social environment and engaging managers in the organization's objectives regardless of social responsibility does not lead to growth and social development and the organizations and their goals should be linked with community, as well as social goals should be taken into account (19).

Given that one of the challenges of performance evaluation, concerning the views of the external stakeholders based on social responsibility, therefore, this research approach was based on paying particular attention to social responsibility and taking into account the views of external stakeholders, namely, clients. Consequently, the fifth dimension of the evaluation ScoreCard is added to take into account the social responsibility of the organizations because the dimensions of the scorecard are designed to focus on the organization and its benefits, and not address social

responsibility. With this view, the fifth dimension of the scorecard can be assigned to the evaluation of social responsibility indicators. Therefore, the BSC developed with the consensus of experts and considered as the basis for designing a comprehensive evaluation model of health system reform plan in Iran (19).

B. Comprehensive Evaluation Model for Health System Reform Plan in Iran (CEHSRP-IR)

Health and striving to maintain and enhance it is always a top priority in governments, communities, and public policy. Many programs have been implemented in this regard, the largest of which is the health system reform plan in Iran. The absence of comprehensive and systematic evaluations in this national program has been quite evident. To fill this gap, Janbazi et al., in applied research, designed a comprehensive model for evaluating the health system reform plan in Iran. The difference between this study and previous studies is the simultaneous attention to the challenges of evaluating social responsibility performance and examining it in a comprehensive and coherent pattern. This study was an applied one in terms of purpose, and strategically, it was descriptive-survey research. This qualitative and quantitative study was carried out in the largest

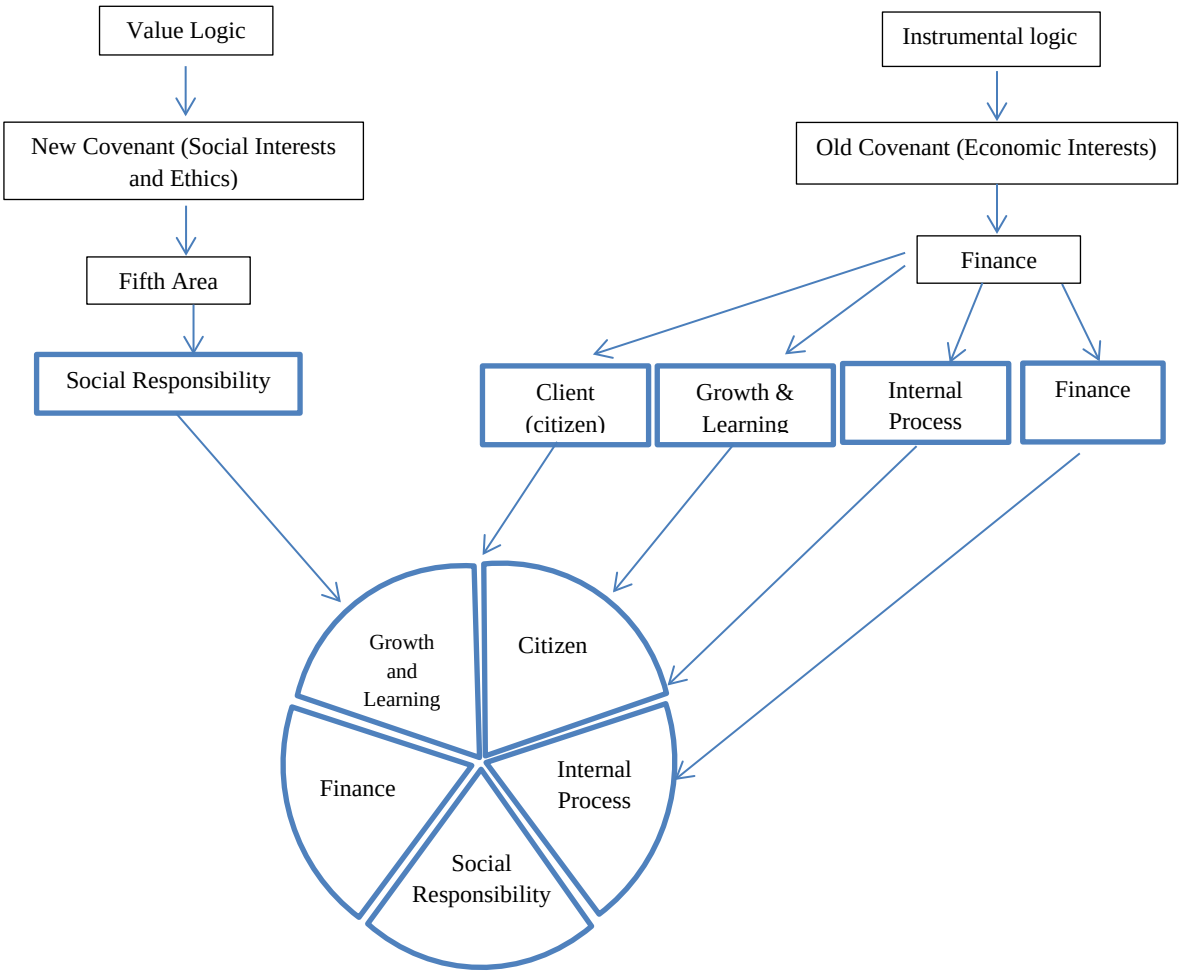

Figure 1. Developed Model of the Balanced ScoreCard (Alvani et al., 2005, 1-16)

field of implementation of the National Plan for Health System Reform in Iran, Shahid Beheshti University of Medical Sciences, in the period of 2018-2019. It resulted in the design of a 900-score model of a comprehensive evaluation of the health system reform plan in Iran based on 5 dimensions: finance, social responsibility, learning and growth, clients and internal processes, 17 components, and 70 indicators. This comprehensive model, which its creators call CEHSRP-IR, is a holistic approach, at four levels of policymakers, strategic managers, resource providers, health service providers, and clients. Using qualitative and quantitative research methods such as content analysis, paired comparisons, and the Delphi method, as well as using developed BSC, have provided an accurate tool for evaluating the effectiveness of the health system reform plan (Figure 2). In this regard, to fit the model on the one hand and evaluate the implementation of the health system reform plan in its spatial domain of research, and also using the above model, they evaluated 10 hospitals (3).

C. Strategy map

One of the tools facilitating the CEHSRP-IR is the strategy map. The strategy map introduced by Kaplan and Norton (2004), has become increasingly widespread among organizations and companies (20). The strategy map is obtained from the perspectives and strategies of the organizations and representing the organization's strategic relations of cause and effect. Its purpose is to facilitate the relationship between staff and the organization's goals (21).

Strategy map elaborate cause and effect relationships between performance metrics factors and important strategic objectives. In fact, from BSC dynamic reflect can be used to change strategy and determine the value created by the organization, and identify the cause and effect chain in the strategy map (22). The main goal of the present study was to a present strategy map for the health system reform plan based on the comprehensive evaluation model for the health system evaluation plan in Iran (CEHSRP-IR). The main innovation of this study was designing the strategy map using the social responsibility approach embodied in strategic objectives and upstream documents in the health system reform plan.

Designers of Balanced ScoreCard (BSC) believe that the successful implementation of strategies depends on the strategy perceived by staff in the organization. To understand the organization’s strategy by staff, in an enlarged view, the inventors of BSC have introduced a tool, namely strategy map that can identify and extract key objectives of the organization and by illustrating the cause and effect relationships between them, provides the link between the organization's strategies (24). In the strategy map, organizations classified at the 4 or more levels. The key strategic components of the organization are also classified in these levels. These levels represent all components and processes of the organization. The best way to map strategy is a top-down approach. This means that the managers of the organization, first, should design the organization strategic process. Then, they should extract the key strategic objectives and place in developed perspectives and establish cause and effect relationships between them. Designing the strategy map makes the measures, quantitative goals, and initiatives of the organization, to be chosen more applicable (23). To accomplish this task, the goals and components of the organization must be fully embedded (4). If the number of strategic components is too high, the BSC may be completely mismanaged, and at the same time, the implementation plan will be lost. Studies showed that 15 to 20 key objectives for any organization could be sufficient.

The current study aimed to map strategy and introduce the health system reform plan using an Iranian social responsibility-based approach.

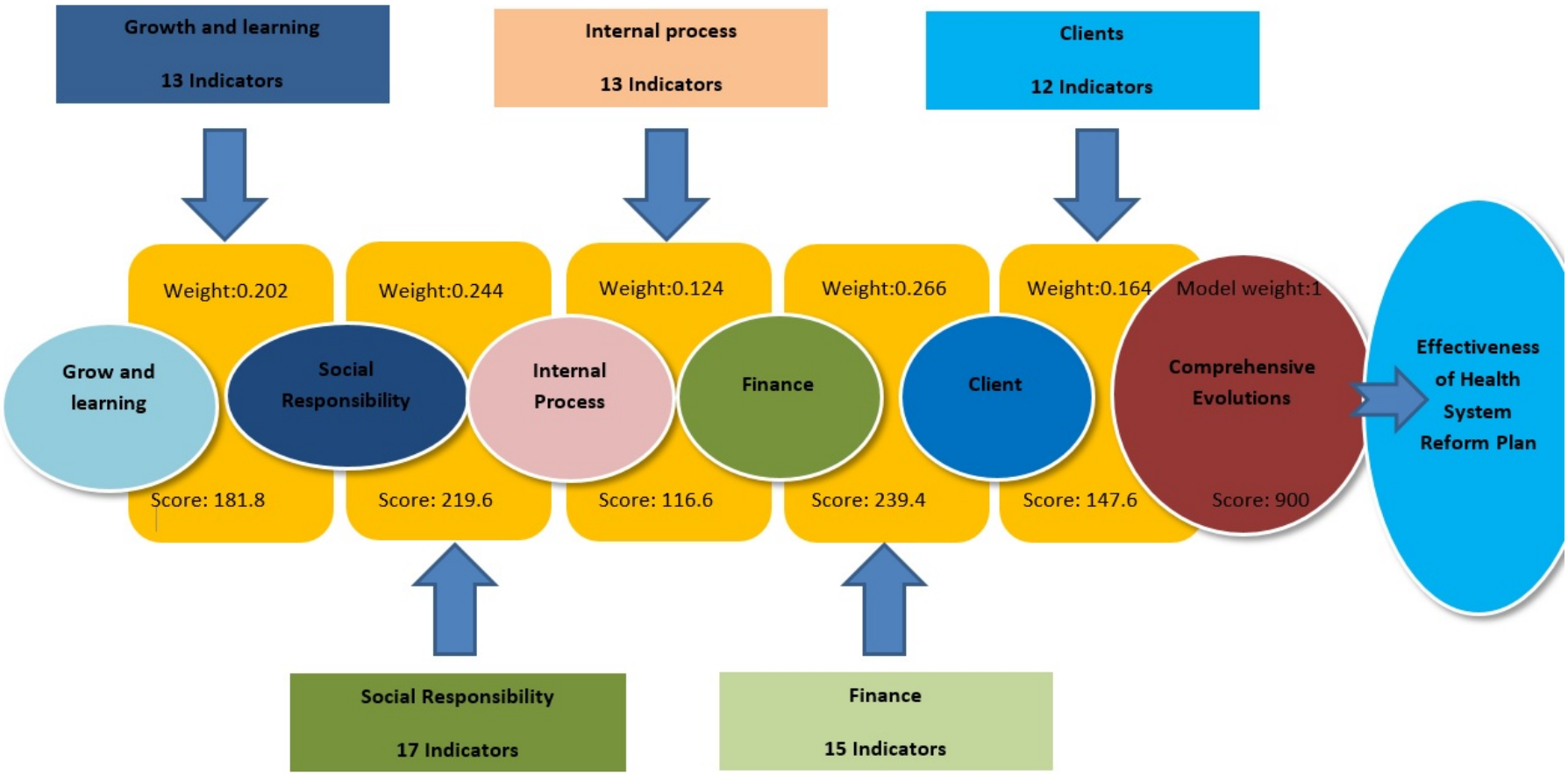

Figure 2. Comprehensive Evaluation Model for Health System Reform Plan in Iran (Janbazi et al., 2019

Methods

The present study was a case study and its data were collected through library studies, interview tools, and questionnaires in a qualitative method and analyzed by descriptive and content analysis methods. Participants in this study consisted of 17 health policymakers, senior executives, and stakeholders selected through a purposive non-random approach to theoretical saturation. In this study, data analysis was based on the four CEHSRP-IR perspectives of policy-makers, strategic managers, resource providers, health service providers, and clients, as well as the other five perspectives of CEHSRP-IR. Qualitative data classified and Delphi content analysis method and paired comparisons were used to analyze qualitative data. To describe the data, extract the weight of dimensions, components, and indices, SPSS software version 22 and Expert Choice software was used. VISIO software was also used to plot the strategy map graph. This study consists of four phases: First, reviewing documents, vision, and strategic themes; second, adapting the CEHSRP-IR model to the nature of health system reform plan in Iran; third, selecting the strategic components for each perspective and determining their weight and prioritization in the strategy map; fourth, drawing the relationships among goals in the CEHSRP-IR model and designing a strategy map based on the social responsibility approach of the health system reform plan.

Results

The research team, which initially included 17 knowledgeable health and management experts, was reduced to 14 in the final stages of the study. The classification and the policymaking and executive documents of the health system reform plan in Iran were studied. At first, after extracting and agreeing on the strategic goals of the health system reform plan (Table 2),

Table 2. Strategic goals of the health system reform plan in Iran

Increasing the level of public health
National protection of citizens against health costs
Providing people satisfaction

Table 3. Performance analysis of Delphi panelists in phase i of research

Interview	Number	Sessions Number	Duration of Meetings (min.)	Total (min.)
First Round	17	20	120	2400
Second Round	15	17	100	1700
Third Round	14	15	100	1500
Fourth Round	14	14	100	1400

Table 4. Characteristics of research experts

Characteristics	Title	First Round Experts	Second Round Experts	Third Round Experts	Fourth Round Experts
Gender	Female	5	5	4	4
	Male	12	10	10	10
Grade	PhD and higher	15	13	13	13
	Masters	2	2	1	1
Experience	Under 15 years	0	0	0	0
	Between 16 and 30 years	12	11	11	12
	Over 30 years	5	4	3	2
	Total	17	15	14	14

by organizing group discussion sessions in four stages using the Delphi technique, the strategic components were categorized and finalized in the five dimensions of the CEHSRP-IR model. The reluctance to continue cooperation considered as the criterion for excluding panelists from the study. The summary of the research team's activities and expert characteristics presented in Tables 3 and 4. In this study, the components selected based on the total mean and standard deviation, and according to the Kendall test result, 17 strategic components were agreed. According to the Kendall test, to maintain the study's validity, the response rate of the experts in each Delphi round should not be less than 70%, and if the rate of change given by the experts during the two consecutive rounds is less than 15%, there has been consensus on the subject under study. Kendall's coefficient of concordance is a measure of the degree of coherence and agreement between several rank categories related to the N object or individual. Kendall's coefficient of concordance was calculated using SPSS software, version 22, (25). Then, face and content validity were verified several times by the research team and its construct validity by grouping the objectives and after determining the weight of the components and the relationship between the dimensions and the components in the strategy map, the final map was presented. Summary of activities of this step that led to the selection of 17 strategic components by experts presented in Table 5. Since Kendall's coefficient of concordance in the fourth round increased by only 0.01 compared to the third round, and since the consensus among the two consecutive rounds did not show significant growth, it is, therefore, possible to end the repetition of the Delphi rounds. On the other hand, Kendall's coefficients of concordance values show that there is a strong consensus in the second round, but in the third and fourth rounds, there is a strong consensus among the panelists.

In the Delphi stages, according to the mission and vision of the health system reform plan, and the number of the perspective of the CEHSRP-IR model, as well as considering the importance and relationships between the dimensions, the displacement and the leveling of the perspectives were accomplished.

In the next step, by eliminating the less important components, some components related to strategic goals are categorized in the five CEHSRP-IR perspectives: finance, client and citizen, internal processes, growth and learning, and social responsibility, as well as one goal as the main objective, which presented in that perspective with the highest scores.

Prioritize perspectives and final components derived from Delphi fourth round at macro, mid, micro, and general levels of service based on mean, geometric mean, and weight values, extracted from Expert Choice software, that characterize the research model. As shown in Table 6 and Figure 3.

Table 5. Summary of experts' views on four Delphi rounds

Implementation process	Number of panelists	Instruments	Number of extracted strategic components	Percentage of agreement	Average total	SD	Kendall's coefficient (consensus)
Delphi First Round	17	Brainstorming	70	-	-	-	-
Delphi Second Round	15	Semi-structured questionnaire	52	68	3.219	0.840	0.735
Delphi Third Round	14	Semi-structured questionnaire	30	81	3.640	0.836	0.893
Delphi Fourth Round	14	Semi-structured questionnaire	19	97	3.844	0.823	0.903

Table 6. Extraction, weighting and prioritization of perspectives and components of strategy map of health system reform plan

Perspectives (dimensions)	Average Value	Weight	Prioritization	Strategic components and their weight in the strategy map
Finance	3.948	0.266	1	• Intelligent and targeted monitoring of the supply, distribution, and consumption of pharmaceutical, medical equipment, and supplies (0.108) • Financing the project from the state budget, public and charitable funds commensurate with progress and effectiveness (0.102) • Optimization of income structure, cost, payments and investment based on service level productivity (0.056)
SocialRespon sibility	3.920	0.244	2	• Establishment of the system and mechanism of participation of all groups involved in the project to implement and monitor the plan (0.090) • Full development of health insurance services in all parts of the country and social classes of people (0.083) • The commitment of sovereign apparatus to fully implement the plan and pay attention to the fundamental rights of people (0.071)
Growth and Learning	3.979	0.202	3	• Using health data for research purposes and unraveling the country's health issues (0.083) • Reforming Education System Based on Country Health Map (0.049) • Expanding creativity, innovation, and technology in the health area (0.038) • Comprehensive knowledge management at all plan levels (0.032)
Clients (citizen)	3.891	0.164	4	• Maximum satisfaction of plan clients (0.070) • The growth of public health and disease management (0.048) • Access to accountability at all plan levels to public opinion and establish transparency platforms (0.046)
Internal Process	3.686	0.124	5	• Removing intrusive intermediate chains in-service path and delegating authority to lower plan levels (0.076) • Development of standard protocols, accreditation, and service development (0.036) • Application of intelligent systems in structural modification, processes, and performance at all plan levels (0.022) • Partnerships of institutions and departments within and outside the organization at international, regional, national and local levels (0.018)

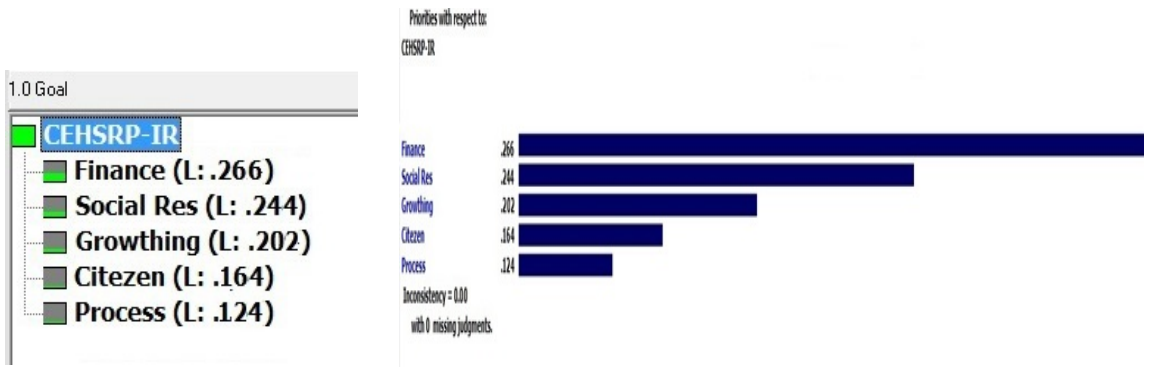

Figure 3. Prioritizing the main perspectives of the strategy map

The comparative results of the weights of the dimensions showed that the growth and learning area is the top priority, and the internal process area is the last priority. In the final step, based on the achievements of the previous step, team members were asked to comment on the internal relationships between the goals in each of the perspectives and also for these relationships to design a strategic map using paired comparisons.

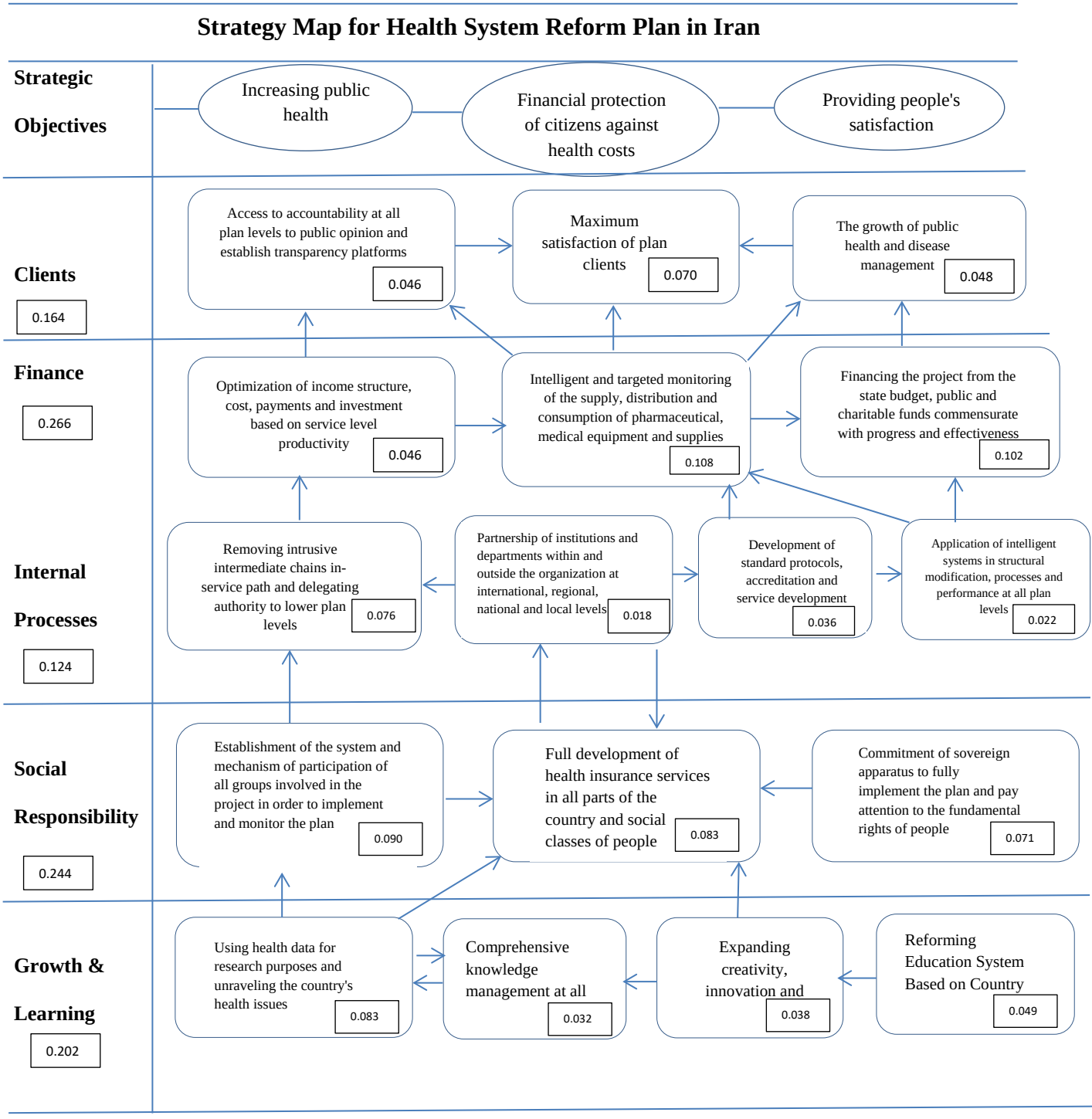

Figure 4. Strategy map for the health system Reform plan in Iran

This means that paired comparisons were made to find the relationships between the two components within each perspective or other perspectives. The results of the comparisons were analyzed using the Expert Choice software.

Based on the obtained results and determining the weight and priority of the perspectives and components, and after identifying the relationships focusing on the main objective, summarizing the views of the experts, various revisions, and the direct and indirect relationships between the perspectives and the components, were finalized. Ultimately, 25 various relationships were created from the impact of the strategic components in each perspective to achieve the final goals of the clients, as well as the strategic goals, and the strategy map of the Iranian Health System Reform Plan was designed using the CEHSRP-IR approach and organizational chart of Visio software (Figure 3).

Discussion

The CEHSRP-IR model, like its base BSC model, establishes a cause and effect relationship between the various components of the organization and considers it as a unified body. Therefore, it should be noted that designing a strategy map is the key component to the successful implementation of any plan or program in the organization, and the health system reform plan is also not an exception (3).

Most non-profit and government organizations have trouble with the main structure of the Balanced Scorecard model, especially since the finance perspective is at the top of the hierarchy perspectives. Since financial success is not the primary objective of most organizations, this method can be changed as clients or stakeholders place at the top of the hierarchy. Non-Profit and government organizations should place a comprehensive goal on the top of their balanced evaluation model, which should be their long-term goal representative. Then, the objectives of the process can be adapted to achieve the high-level objective. There is a fundamental difference in the field of clients of World Health Organizations (WHO), and the health reform plan in Iran is considerable. In the strategy map of organization and service-oriented programs, clients have climbed to the top of the balanced scorecard model as effective delivery of services to clients. This embodies the philosophy of the existence of organizations, and non-profit and government programs (2).

In this study, the first BSC problem resolved by reviewing the classification of perspectives and taking into account the social responsibility perspective using the CEHSRP-IR model in the strategy map, so that the perspective of clients climbed to the top of the Balanced Scorecard model, which is not consistent with the results of the other studies (6-17). Perhaps the reason is that Iran's healthcare reform plan is non-profit plan. Compared with other studies, placing the client's perspective and its objectives at the top perspectives in this study lead to a deeper understanding of the needs of clients in the health reform plan in Iran. Besides, the number of components selected in this group was 17 that was similar to the number of goals stated in the study of Torbati et al. (17) and were not consistent with other studies (8, 14, 15). The reason may be the nature of social responsibility and client-focused of this national program. In this research, the strategy map showed that the relationship between goals is not necessarily the unilateral objectives and from top to bottom, so that in subsequent steps, using CEHSRP-IR model to evaluate the health reform plan, the analysis of this connections can contribute to accurate identification of evaluation key

indicators. The limitation of the current study was non-participation of some experts of health reform plan in group discussion sessions; however, their views were taken through individual interviews.

Many policymakers and managers at different levels of implementation and evaluation of the health system reform plan, despite the desire to implement strategies, present a very limited explanation to the service providers and clients about the activities that need to be done and the importance of the determined tasks. Therefore, sectors and levels of performance in this plan require a means to convey their concept of strategy. The strategy map identifies the strategic goals of the plans and organization, as well as provides the cause and effect relationship. As a result, it can be stated that the design of health system reform plan considered as an investment in learning and growth area with the aim of the achieving abilities and capabilities required as foundational purpose of the strategy map is essential because ultimately it is the people who influence the processes and outcomes of the organization. This fundamental objective directly effects on the individual and group growth. Learning and growth, directly and indirectly, affect the components of social responsibility, which subsequently improves internal processes through the fulfillment of the objectives. On the other hand, the structure of the health system reform plan with the persistence and promotion of standards, development, and quality of services can balance between income and expenses at the macro and strategic levels, and makes optimum use of resources. The efficient use of resources can improve service quality and can lead to increased accountability. Clients' satisfaction, as expected, is at the highest level of the map, and is directly the result of increasing the quality of services, accountability, and improves public health.

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Conflict of interest

Authors declare no conflict of interests.

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