

Application of Balanced Scorecard (BSC) in Evaluating the Performance of Health Care Providers: A Review

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Abstract:

Background: As a comprehensive approach to assessing the performance of hospitals, Balanced Scorecard methodology is a tool to transform the organization's mission into concrete measurable objectives, activities and performance.

Methodology: The present study is a systematic review conducted via searching in different sites, such as: Magiran, Irandoc, Google Scholar, Iranmedex. Several studies on the balanced scorecard have been done in different organization. In this study, we chose the articles aiming to assess the health care and hospital using BSC. Then their subjects were compared with the present study, and then the related studies were briefly mentioned.

Finding: Based on the results of studies in this area, the main purpose of using the balanced scorecard can be used in studies such as the ability to update the strategy, the establishment of the strategy throughout the organization, coordination unit and individual goals of the strategy, linking strategic objectives to long-term goals and annual budget through performance measures, assessment of performance for learning and improvement strategies.

Results: The results of this study showed that combining models is a way for assessing function and increasing the satisfaction and commitment. And the balanced scorecard is recommended as a model that can help increase efficiency and better evaluation of the performance.

Key words: Performance Assessment; Health System; The Bbalanced Scorecard;

Assessment of Healthcare Centers

Most organizations work in a competitive and dynamic environment these days. An environment in which all internal and external variables are always changing and it is very difficult to predict such changes. Since organizations spend a high amount of money and time to provide, formulate and perform strategies to reach long term goals and perspectives, acknowledging organizational performance, how much they have achieved their objectives and the position of the organization in today's dynamic and complex environment is of high importance. Organizational performance evaluation is in fact a feedback system containing direct evaluation performance, people and organizations which can be utilized to prevent deviation, make order in actions, waste decline, optimal allocation of resources, weaknesses and strengths detection, determine standards, etc. [1,2].

According to World Bank report, about 50 to 80 percent of national resources in developing countries spent on healthcare, is related to hospitals, of which over 80% is spent in hospitals where the efficiency is less than 50% of their capacity. Because a high percent of national budget is allocated to healthcare sector of hospitals, its performance evaluation seems critical [3-5]. Lack of evaluation leads to higher healthcare costs and ignoring it endangers primary healthcare [9]. From among methods provided to evaluate and navigate organizational performance, Balanced Score Card (BSC) not only is an integrated and uniform method of evaluation but also is a management system with a new approach to strategic management introduced in the 90s by Kaplan and Norton (quoted from Martinson et al) [6-8].

Balanced Score Card technique:

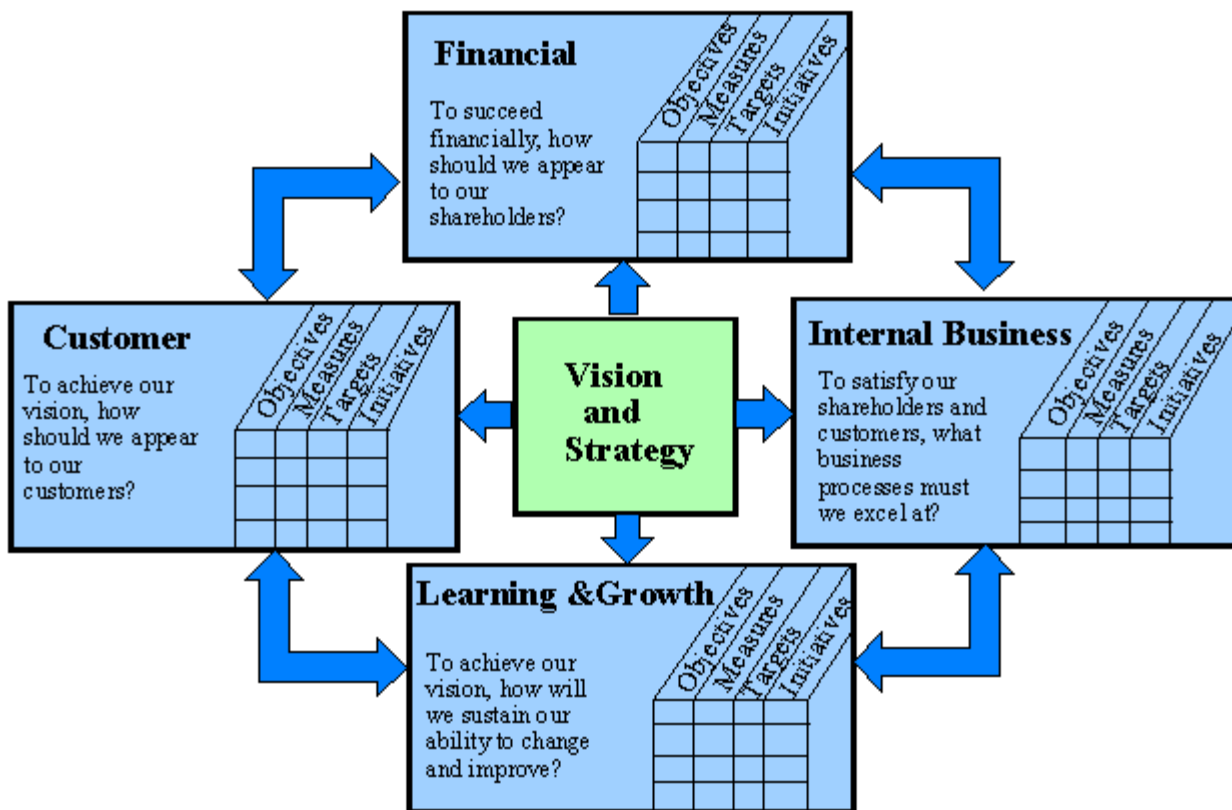
With variations and revolutions in today’s competitive environment, organizational performance needs to be evaluated in a properly. Organizations must pay attention to proper evaluation of their performance as well as considering a system through which evaluation is done desirably and results of evaluation are influential in a desired manner and a suitable mechanism [9-12]. Balanced Score Card help managers investigate activities and trends of growth or drop from different perspectives and provides them with a comprehensive framework to interpret a

company’s perspectives and strategies in form of performance measures [13, 14].

- Financial Perspective
- Customer Perspective
- Internal Processes Perspective
- Growth & Learning perspective [15-18]

Figure 1. [19,20,21]

Balanced Scorecard Framework*



* Adapted from Kaplan & Norton. 1996. *The Balanced Scorecard*. Harvard Business School Press: 9. Original from HBR Jan/Feb 1996, p. 76.

The core of Balanced Score Card forms through perspective and strategy. In fact, these two serve as a base to form four dimensions of Balanced Score Card and financial results are attained when organizational efforts in other three domains are directed in a good way. This method may be used with these aims: clarifying and desirability in organizational strategies, rendering strategies to objectives and goals of sectors and personnel, relating strategic objectives to a bit more long-term goals and annual finance, determining organizational executive actions, conducting periodic and systematic reviews in organizational strategies and giving

feedbacks required for evaluating organizational performance in healthcare organizations [21, 22].

Finally, in order to create and perform balanced evaluation in an organization, the following 9 steps will help managers of organizations: [23]

1. Conduct an organizational audit,
2. Determine and define strategic issues,
3. Define strategic perspectives and objectives,
4. Create an organizational strategic map,

5. Define and determine performance indices,
6. Determine and prioritize executive activities,
7. Computerize and make connections between performance information,
8. Execute BSC through the organization,
9. Collect information, evaluation, review and improve performance,

Information on BSC method is summarized below [24-26]

Since balanced evaluation method is a suitable instrument to make comprehensive connections and execute strategies through all organizational levels, the present study reviews BSC method in evaluating healthcare centers.

Methodology

This study has been conducted through narrative reviewing surfing web-sites of Magiran, Irandoc, Google Scholar, Iranmedex, and SID as well as using keywords like evaluation, performance, healthcare system, balance, score card (BSC) in data bases like PubMed, Scopus, EMBASE and science direct. Various studies have been done on BSC from 1385 to 1993, in different organizations from which those related to evaluating healthcare and BSC application in healthcare centers or hospitals. Finally, these articles were compared and related studies were chosen whose summaries are as follows:

Article Summaries

A short review on comments and documents (feedbacks)

In a study, Nasiripur reported that in Iran, Resalat, and Durnama hospitals, there were defined strategies and objectives but no objectives were set and the measures were not corresponded to the strategies and objectives. In the study pattern, four perspectives were defined to explain hospital's strategies and create a competitive advantage and the related measures were formulated. Application of four measures of patients and society, internal process and efficiency, development and innovation, and finance to evaluate Iranian hospitals performance will lead to detailed study of their performance which in turn leads to increasing efficiency of hospital resources as well as satisfaction of patients and community [27].

Asaadimir et al., reported that relative efficiency of 13 hospitals in Yazd province using combined models of data envelopment analysis (DEA) and BSC was evaluated. Mean of relative efficiency of the studied hospitals was 0.945. 9 hospitals out of the 13 hospitals are located on efficiency ends and 4 hospitals have efficiencies lower than 1. This

study has incorporated two performance evaluation models BSC and DEA to identify performance evaluation indices of healthcare centers and combining these two models has declined the disadvantages of the individual models and improved their advantages and also has provided a comprehensive model of evaluating these units. Although taking all performance indices into account in improvement of hospital performance, prioritizing these recommendations by managers will be helpful [28].

In other studies conducted in Hashemi-nezhad hospital in Tehran, first of all a list of performance evaluation indices was made using BSC approach and then paired comparisons from the field method followed by distributing standard hierarchical analysis gave an degree of flexibility of lower than 0.1 among 7 decision makers. After that, weight of each index and perspective was found using FAHP. Among all perspectives of BSC the perspective of community beneficiaries and services was 28.11 percent, a bit higher than other perspectives. Among the indices, satisfaction level of patients and their companion as well as learners has got the highest importance level. Also, the final score of performance in 2010 was obtained 95.88. This study is recommended in order to improve hospital performance evaluation. Its results may therefore help managers and customers of healthcare sector to make the best decisions and take the best strategy in their future plans [29].

Another study, with emphasis on the fact that formulating informational systems strategy based on the results from informational systems' performance will lead to up-to-date strategies, puts importance on the parallel relationship between strategic management of informational systems with BSC and informational systems' performance.

Results of the above-mentioned study show that increase/decrease in strategic management of informational system alignment with BSC leads to increase/decrease in informational systems' performance [30].

Ghazi-Nuri et al., conducted a research in which they evaluated performance of clinical laboratories using BSC. Results of applying the model recommended in this project in one of the big experimental centers led to 20% increase in efficiency, 27% promotion in service quality level coefficient, 33% increase in income, and 4% increase in customer satisfaction.

Results

The model recommended in this study is a valuable instrument for evaluating and improving performance of clinical and research laboratories the applications of which

leads to increase in resource benefits and customer and community satisfaction with laboratory services [31].

Ghasembaglu argues that various organizations in healthcare sector have employed balanced evaluation. These organizations have made some changes (including modification or adding model dimensions). Generally, the added dimensions were care quality, results and availability. In some cases, the model has been employed widely in healthcare sector organizations. In this case, the two mentioned examples for wide-range application of balanced organization can act as a conceptual framework in applying the model in healthcare in a wide range. There are also key differences between wide range application and limited application of this model in healthcare sector organizations such as analysis units, objectives, audience, methods, data and results [32].

Lotfi et al., reports that future planning and allocation of public hospitals' resources in Iran must be paid special attention. Results are obtained from evaluating requirements of every region with regard to potential, population and geographic and cultural indices of that region. Because of potential limitations of different models, in order to show the entire picture of future planning in hospitals, we recommend to apply different performance evaluation models [33].

Evaluation requires specific instruments and patterns. There are different models of organizational performance evaluation, the most important and the most popular ones are namely:

1) analytic hierarchical process (AHP), 2) international standard organization (ISO), 3) performance pyramid, 4) business process, 5) Medori and Staple framework 6) analytic model of beneficiaries, 7) managements by objectives (MBO), 8) organizational excellence model (EFQM), 9) Pabon Lasso model, 10) Pabon Lasso model of balance score card (BSC) which is the most well-known models of system performance evaluation [34]. Some of the above-mentioned models have been incorporated in health care sector several times among which one can count: Vali-Qazvini et al [35], Ebadiazar et al [36], Riahi et al [37], Baradaran Kazem-zade et al [38] and Kalhor et al [39].

Conclusion

In foreign countries, Norton-Kaplan model for evaluating organizational performance which is suitable for non-profit public organizations has been used all of which considered four main perspectives in their patterns. Determining for perspectives of balanced score card leads to a balance between short- and long-term objectives and also between

Lag indicators and Lead indicators. Although higher number of measures of BSC leads to confusion, uniformity of objectives is created through BSC in which all measures are uniformed along one strategy. Measurement system must make a cause-effect relationship between objectives and measures o different perspectives [40]. In developing BSC, the main criterion is not the number of measures but attention and care in proper choice of measures, so that the key measures which are critical would not be ignored or deleted. These measures are capable of measuring efficiency in very complicated and political-governmental environments that can provide a complete and brief report of basic and general components of an organization. Perspective of learning and growth is proposed as the footstone of other perspectives of BSC which must be paid more attention when selecting measures [41,42].

Findings showed that BSC is influential in focusing on the entire organization and performance improvement by transforming strategy to performance measures. Actually, applying this technique improves organizational performance. Some of the most important goals of applying BSC in these studies are updating organizational strategy, establishment of strategy all over the organization, coordinating unit and individual objectives with the strategy, relating strategic objectives with long-term and annual financial objectives via performance measures, repeating performance evaluation periodically to improve learning and strategies.

Limitations

Since this system has not been applied for a long time, there are some obstacles and limitations on its way of application, and it needs proper actions to remove them. In the mentioned studies, most managers agreed on application of this system and know it as a strategy to improve service quality and increase customer satisfaction. They had low information about it, though. The model focuses on maintaining the customer; this criterion is not suitable for systems which emphasize on local hospitals, physician references and low power of consumers. Difficulty in making changes in regulations and processes of healthcare sector, increasing variable costumer needs, emerging conflicts among objectives of mangers and physicians, conflicts in values recommended to different customers, lack of new approaches to performance evaluation, insufficient informational systems, lack of commitment, lack of stability in environmental circumstances, lack of understanding or even misunderstanding concepts and culture shock are among the obstacles and limitations on this model. Also, BSC model is a conceptual model and cannot turn into a measurable one easily and does not consider the

role of community in defining the environment in which the organization works and applying this approach is possible only if the organization has got a defined strategic perspective. Although BSC is a valuable framework to evaluate critical points, it does not say how to introduce and apply the identified indices.

Recommendations:

Because of the importance of performance evaluation systems in healthcare improvement and the critical role of hospitals in healthcare sector, it is strongly recommended to create a support approach of applying new systems of performance evaluation, started from higher-rank managers of universities. Chief executive officers' commitment during all steps of BSC application, creating affective relationship and making strategies and objectives understandable for all hospital levels, participation and supervision of key members and units experts in determining and selecting performance measures, holding training courses on BSC and its concepts, creating culture among employees in a good manner to ensure system execution, in-time delivery of results and reports from evaluation system to the authority in order to make suitable decisions also have impacts on removing obstacles. Reported insufficient in-time availability of reports and results from the evaluation systems indicates the necessity of much attention to evaluation results and delivering them to the authorities to make in-time decisions. Because Pabon Lasso model is much extended, integration of these two models can lead to a more comprehensive evaluation of healthcare centers and help managers make plans in a better and more complete manner.

References

- [1] Cheng-ruwu, chin-tsai lin and pei hsuan tsai 2008 financial serv of wealth management banking balanced scorecard approach /journal of social sciences 4(4)/255-263.
- [2] Opiyo, R. Influence of Balanced Scorecard on Employee Job Satisfaction: A survey of the Cooperative Bank of Kenya, Unpublished MBA project, University of Nairobi. 2010.
- [3] Sabbaghe Kerman M, Shaghaghi Shahri V.[Estimating Production Function of Iran's Hospital (Persian)]. Bi quarterly Journal of Economy Essays . 2004;1(2):37-66
- [4] Kavousi Z, Goodarzi S, Almasiankia A.[Performance evaluation in hospitals of Lorestan University of Medical Sciences using Pabon-Lasso Model (Persian)]. Payavard Salamat.2012;6(5):365-75.
- [5] Garg A, Deshmukh S. Designing balanced scorecard for multi echelon repair inventory systems. Journal of Modelling in Management 03/2012; 7(1):59-96.
- [6] Martinsons M, Davison R, Tse D. The balanced scorecard: a foundation for the strategic management of information systems. Decision Support Systems 1999; 25: 71-88.
- [7] Chapman C, Hopwood A, Shields M. Handbook of Management Accounting Research: Volume 3 (Elsevier, 2010).
- [8] Lin L, Liu L, Liu H, Wang D. Integrating hierarchical balanced scorecard with fuzzy linguistic for evaluating operating room performance in hospitals. [online]. Expert Systems with Applications, 40(6). 2013.
- [9] Nasiri Pour A, Tabibi J, Ghasem Begloo A, Jadidi R. Designing a Performance Evaluation Model for Iranian Public Hospitals: Using the Balanced Scorecard. J Arak Univ Med Sci 2009; 12(1): 95-106. [In Persian].
- [10] Sheikh zade R. Design, evaluation and management of health system performance. Research Management. 10(3). 2010. 83-108
- [11] Boorsma, M. and Chiaravalloti, F. (2010). Arts Marketing Performance: An Artistic-Mission-Led Approach to Evaluation. The Journal or Arts Management, 40: 297-317.
- [12] Dillon B. Organizational Leadership and the Balanced Scorecard: Lessons to be learned from Marketing Activities in a Nonprofit Setting. International Journal of Business and Social Science. Vol. 3 No. 15; August 2012 .
- [13] Alirezai MR, Mir-Hosseini SA, Khalili M, Keshvari A. Comprehensive efficiency system using DEA with BSC core; Second National Conference of Performance Management 2005; Tehran,Iran.p.16. [Persian]
- [14] Nawangwulan I, Anantadjaya S, Finardi A. Does BSC Represent an Organizational Development? Evidence from Indonesian Manufacturing Firms. Society of Interdisciplinary Business Research . Rev. Integr. Bus. Econ. Res. Vol 3(1) . 2014.
- [15] Kaplan RS, Norton DP. The Balanced Scorecard: converting strategy into action(Translator: Melmasi R, Seyfi J) .Tehran: business publish; 2007.p. 45. [Persian].
- [16] Bruce G, Tian G. An analysis of the BSC in health care organization. International Journal of Productivity and Performance Management 2008; 57(1): 6-21.
- [17] BISBE J, BARRUBÉS J. The Balanced Scorecard as a Management Tool for Assessing and Monitoring Strategy Implementation in Health Care Organizations. 65(10). 2011.
- [18] Indra J, Anantadjaya S. Balancing Firms' Scores: A Performance and Control Study in Indonesian Financing Industry. The 7th Asia Pacific Management Accounting Association Conference. Shah Alam, Selangor, Malaysia: APMAA .2011.
- [19] Wheelen, T. L. and Hunger, J.D. Concepts in Strategic Management and Business Policy. New Jersey: Prentice Hall, 2008.
- [20] Gajrati A, Hosini Nasab H, Almasi V. Using the Balanced Scorecard as a prerequisite for Six Sigma. Presented at the first International Conference on Six Sigma.
- [21] Kaplan RS, Norton DP. The balanced scorecard, translating strategy into action. Boston: Harvard Business School Press; 1996. p.142.

- [22] Opiyo, R. Influence of Balanced Scorecard on Employee Job Satisfaction: A survey of the Cooperative Bank of Kenya, Unpublished MBA project, University of Nairobi. 2010.
- [23] Hanne, Norreklit. The Balanced Scorecard: what is the Score, A rhetorical analysis of the balanced Scorecard. Accounting Organizations and Society 28.2003.
- [24] Sheikh zade R, Sheikh zade M. The strategic integration of BSC and EFQM Create synergy in the organization. Journal of Applied Bank, Inspection and control. 5 (14). 2006.
- [25] Wongrassam,G , Simmons J., "Performance Measurement Tools: The Balanced Scorecard And The EFQM Excellence Model", Journal: Measuring Business Excellence, 7 (1) :14-28.2003.
- [26] Martello M, Watson J, Fischer M. Implementing A Balanced Scorecard In A Not-For-Profit Organization. Journal of Business & Economics Research – September 2008. Volume 6, Number 9.
- [27] Nasiri Pour A, Tabibi J, Ghasem Behloo A, Jadidi R. Design an evaluation system of using public hospitals with BSC. Journal of Arak Medical Sciences. 12(1). 2010. 905-106.
- [28] Assadi ,M ,M.Ghafouri ,S,H.Sadeghi Arani ,Z. Khosravanyan ,H. (2010). Performance assessment in hospitals of Yazd University of Medical Sciences medical university using Balanced Card models combined, Data envelopment analysis and Srkval, Journal of Medical Sciences of Yazd,6(18), 559-569.
- [29] Iravani Tabrizi amirPour, P. Fazlli, S.Alvandi ,M. (2012).Using combined approach of FAHP-BSC To evaluate the performance of Hashemi Nejad Hospital Tehran", Health Information Management, 9(3).p.327-338.
- [30] Ebrahimi ,M.(2005).Study the relationship strategic management of information systems in line with the card balance and performance of information systems, Master's thesis.
- [31] Ghazi Nouri S, Asadi Far R, Ebrahimi A, Dastmordi M. A comprehensive model for the assessment of the clinical laboratory and research centers. Journal of Medical Laboratory Sciences. 4(2). 2011.
- [32] Ghasem Begloo A. Employing a balanced assessment model in health sector. The Third National Conference On Performance Management .15 -16 may 2007.
- [33] Lotfi F, Kalhor R, Bastani P, Zadeh NS, Eslamian M, Dehghani MR, et al. Various Indicators for the Assessment of Hospitals' Performance Status: Differences and Similarities. Iranian Red Crescent Medical Journal. 2014;16(4).
- [34] Tavalae R, New approaches to assessing organizational performance . POLICE HUMAN DEVELOPMENT. 2007; 4(12).
- [35] Vali Ghazvini S, Shah Bahrami E, Nazari Y, Moradi F, Kalhor R. Performance Evaluation of Rajaei Hospital Based on «EFQM» Organizational Excellence Model. Payavard Salamat. 2012;6(1):70-8.
- [36] Ebadi Fard azar F, Choopani A, Mohammadi N, Arkian S H , Choopani F. Designing indicators hierarchy tree by using Analytical Hierarchy Process in obstetrics and gynecology wards - RASOOL hospital, .2008. .journal of hospital.2012; 10 (4) :61-70
- [37] Riahi L, Mohammadi F, Ganjkanloo A. Comparison of bed turnover rate between the hospitals using Quality Management System and the ones lacking it in Zanjan province. JHPM. 2013; 2 (1) :59-65.
- [38] Baradaran Kazemzadeh R, Sepehri M, Firouzi Jahantigh F. Department of Industrial Engineering, Faculty of Engineering, Tarbiat Modares University, Tehran, Iran.. jhosp. 2014; 12 (4) :41-50.
- [39] R Kalhor, A Salehi, A Keshavarz, P Bastani and P Heidari Orojloo. Assessing Hospital Performance in Iran Using the Pabon Lasso Model. Asia Pacific Journal of Health Management 2014; 9: 2
- [40] Kaplan R, Norton D (Author). Hosseinian H (translators). Measuring the strategic readiness of intangible assets. Monthly of Gozideh of Management.2004; (37). [In Persian].
- [41] Ahmadi -Daniali A. [Comparative study of performance management in selected hospitals of Tehran and proposing a suitable model for Iran in 2002]. [PhD thesis]. Tehran Science and Research Branch : Islamic Azad University2002; p.9.