

ICASH-A124

A REVIEW OF THE BALANCED SCORECARD IMPLEMENTATION IN HEALTH SECTOR ORGANIZATION

Silvia Tarigan^{*}, Adang Bachtiar

Faculty of Public Health, University of Indonesia, Jakarta, Indonesia.

Corresponding author's e-mail: Silvia.tarigan78@gmail.com

ABSTRACT

Background: Several studies reported that performance measurement using balanced scorecard is better than using traditional performance measurements. Balanced scorecard approach has been used in many health service sectors, both profit and non-profit, including hospitals, health service system, center for mental health, pharmacy services and health insurance company. This study aims to review the balanced scorecard implementation in health sector organization of the published literature from 2012 to 2019.

Methods: This study was used literature review method by collecting data of the Balanced Scorecard in the health care sector and draws on the 6 years of published literature to January 2019. The literature were found from a search on Google Scholar as well as Thomson Reuters Web of Knowledge. The search terms were used "Balanced Scorecard", "Health Balanced Scorecard" and "BSC" on English language only. The papers were classified by topics, research settings and research methods and data analysis techniques.

Results: From 1465 papers were examined, 12 pieces of literature met inclusion criteria. From 12 pieces of literature have been reviewed, were used case study research method, eleven papers with qualitative research and one paper using the Delphi method. Based on 12 papers found that The balanced scorecard in health sector organization has been implemented in ICO, primary health care, hematology department, hospitals, home care nursing, health facilities, health systems, nutritional therapy company and clinical nutrition. Moreover, the Balanced Scorecard approach was used for health service budgeting, developing key performance indicators, improving hospital performance, assessing the baseline status, as an indicator in conducting evaluations.

Conclusion: This study found that several studies consistently proved that Balanced scorecard is essential for performance and evaluation measurement in the health sector.

Keywords : Balanced Scorecard, , performance measurement, health care, health services

INTRODUCTION

Traditional performance measurement systems focus on financial aspects. However, performance measurement using financial measures alone is considered less representative of the performance itself. Financial size is a lag indicator, a measure that indicates past performance, while non-financial measures are lead indicators, which are measures that can capture future scenarios with the help of data from the past. The limitations of this traditional performance measurement system encourage Kaplan and Norton to design a more comprehensive performance measurement system called the Balanced Scorecard. The term Balanced Scorecard consists of two words, namely balanced and scorecard. The word balanced can be interpreted as a performance that is measured in a balanced manner from two aspects, namely

financial and non-financial aspects, including long-term and short-term measures, and involves internal and external parts. Whereas the definition of a scorecard is a card that is used to record performance results both for the present conditions and for future planning [1].

The first article on the Balanced Scorecard was published in 1992 by Kaplan and Norton [1]. Since then, use of the Balanced Scorecard has grown dramatically as a key strategic management system and is now widely recognized internationally. It is used in private, not-for-profit and public sector organizations, of all sizes and types. For example, in the Bain and Company 2008 global survey of 1,430 international executives from companies in a broad range of industries, it was found that the Balanced Scorecard was the sixth most used of 25 management tools [2]. The same survey showed it had the eighth highest satisfaction rating (3.83/5.00) and that it was used by around 50% or more of surveyed companies in all major world regions. Interestingly, the highest levels of satisfaction were in health care. It has also been quoted as being one of the most important management ideas in the last seventy-five years by the Harvard Business Review [3].

Balanced Scorecard approach to public sector organizations measures performance based on financial and non-financial aspects which are divided into four perspectives, namely customer perspective, business and internal process perspectives, learning and growth perspectives, and financial perspective. Research conducted by Aurora seeks to implement balanced scorecard for use in public sector organizations. The results of the study indicate that performance measurement using balanced scorecard is better than using traditional performance measurements. Balanced scorecard is deemed appropriate to be used as a tool to measure public sector performance because it not only emphasizes the quantitative-financial aspects, but also considers the qualitative and non-financial aspects. This is in line with the objectives of the public sector which places profits not only as a key performance measure, but services that tend to be qualitative and non-financial [4].

Balanced Scorecard has been implemented in many sectors, both the private and public sectors, including the health sector which has also implemented the Balanced Scorecard on its management system. Balanced scorecard approach has been used in many health service sectors, both profit and non-profit, including hospitals, health service system, university hospital / department of health, long-term services, center for mental health, pharmacy services and health insurance company [5]. Kaplan and Norton stated that the Balanced Scorecard is not only used as strategic management at the organizational level, but the conceptual framework can also be used in the health sector as an evaluation of health programs, service quality and improvement projects, accreditation, clinical pathways, and as a system of performance measurement in hospitals [1,5]. It is necessary to know the extent of the implementation of the Balanced Scorecard in the health sector and its function in management in the health sector itself. This study aims to review the balanced scorecard implementation in health sector organization of the published literature during 2012 to 2019.

METHODS

This research is a narrative review based on PRISMA-Protocol. The data source of this research comes from the literature obtained through the internet in the form of research articles on the balanced scorecard. This review focuses on the use of the Balanced Scorecard in the health care sector and draws on the 6 years of published literature to January 2019. The variables studied were the balanced scorecard. The population of this study is the application of the balanced scorecard in the health sector. The resulting outcome is how the role of the balanced scorecard is used in management systems in the health sector. The examined papers were sourced from a search of Google Scholar as well as Thomson Reuters Web of Knowledge. The search terms used were “Balanced Scorecard”, “Health Balanced Scorecard” and “BSC”. The papers were classified by topics, research settings and research methods and data analysis techniques.

Inclusion criteria are research papers from journals that examine the implementation of balanced scorecards in health sector organizations. Research that is not related to the implementation of balanced scorecards in health sector organizations as well as research in the form of theses, theses and research reports is excluded from this study.

Those are 217,000 papers based on “Balanced scorecard” keyword, 54,500 papers based on “Health Balanced Scorecard” keyword, and 1,060,000 papers based on “BSC” keyword. The selected 1,465 papers included 28 full papers were evaluated, and the remaining papers only evaluate the abstract. After reading all papers only 12 papers were appropriate for narrative review.

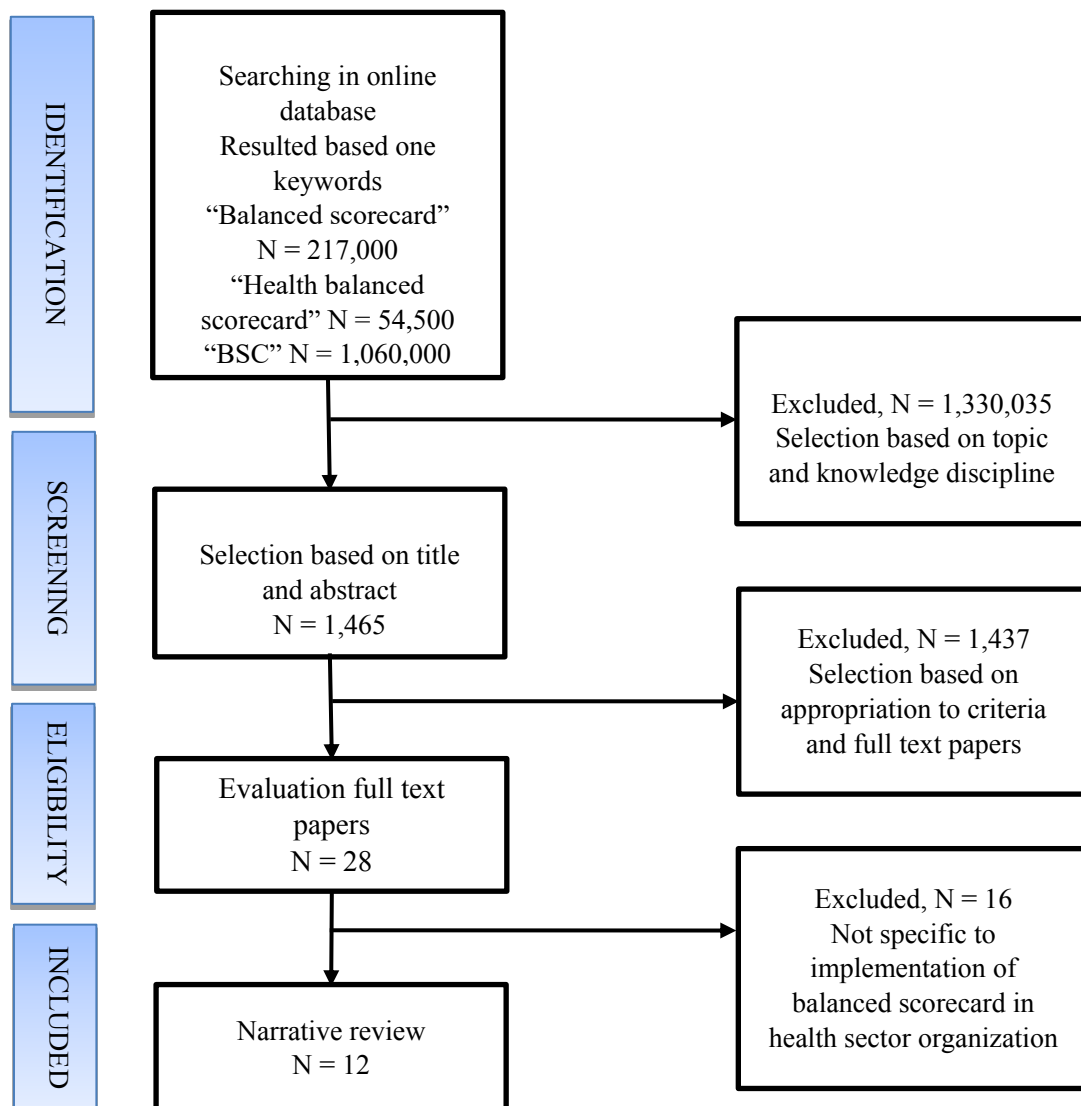


Figure 1. PRISMA-Protocol search result

RESULTS

The results of this study will be presented in the following table. Below is a table of critical appraisal summary outcomes of the twelve papers covering published year, author, topic, research settings, research method and data analysis technique, and conclusions.

Table 1. Critical Appraisal covering Year, Author, Topic, Research Settings, Research Method and Data Analysis Technique, and Conclusions

Year	Author	Topic	Research Settings	Research Method and Data Analysis Technique	Findings
2019	Wu et al. [6]	Establishing Evaluation indicator	Integrated care organizations (ICO)	Case study The Delphi method Weight-based analysis	Balanced Scorecard is implemented as an indicator in conducting evaluation in one of health sector organization
2018	Ramón - Jerónimo et al. [7]	Implementation of budget and balanced scorecard Impacts on human resources motivation	Primary health care	Case study Qualitative study Based on grounded theory	Balanced Scorecard is implemented in health service budgeting
2018	Enrique et al. [8]	Key Risk Indicator (KRI) that enhances the advancement of the health-care management system	Health care	Case Study Qualitative study	Balanced Scorecard is implemented in developing KRI
2017	Catuogno et al. [9]	Implement a multidimensional performance measurement system	Haematology department	Case study Qualitative study	Balanced Scorecard is implemented as performance measurement tools
2016	Kliger [10]	Adoption of balanced scorecard on quality measurement	Health care	Case study Qualitative study	Balanced Scorecard is implemented as quality measurement tools
2015	Wonjunget al. [11]	Develop Key Performance Indicators (KPIs) based on a balanced scorecard	Home care nursing	Case study The content validity index was analyzed using STATA 13.0 BBN was analyzed using HUGIN 8.0.	Balanced Scorecard is implemented in developing KPIs
Year	Author	Topic	Research Settings	Research Method and Data Analysis Technique	Conclusions

Year	Author	Topic	Research Settings	Research Method and Data Analysis Technique	Findings
2015	Gutiérrez et al. [12]	Analyse the main characteristics of balanced scorecard	Clinical nutrition	Case Study Qualitative study	Main characteristic of balanced scorecard after implemented in health sector organization
2015	Gao & Gurd [13]	Improve hospital performance with the balanced scorecard (BSC).	Hospitals	Case study Three data sources were used to examine the diffusion and implementation of the BSC in China	Balanced Scorecard is implemented in improving hospital performance
2014	Mutale et al. [14]	The quantitative results of the 12 months follow-up study applying the balanced scorecard approach in the BHOMA intervention	Health facilities	Case study Cluster randomized trial to strengthen the health system. Comparisons were made in the intervention and control sites. STATA version 12 was used for analysis.	Balanced Scorecard is implemented as an approach in BHOMA intervention
2013	Hwa et al. [15]	Development and implementation of balanced scorecard	Academic hospital group	Case study Qualitative study Develop strategic objectives and determine performance metrics across 4 BSC perspectives	Balanced Scorecard is developed and implemented in hospital as one of health sector organization
2013	Mutale et al. [16]	The concept of balanced scorecard to describe the baseline status	Health system	Case study Assess the baseline status of the participating districts were used a modified balanced scorecard approach following the domains highlighted in the MOH 2011 Strategic Plan.	Balanced Scorecard is implemented in describing the baseline status
2013	de Matos Nasser et al. [17]	Implementation of the BSC in a nutritional therapy company	Nutritional therapy company	Case study Sample consisted of 39 collaborators and 44 clients The data was launched in the spread sheet of the Excel Application Program.	Balanced Scorecard is implemented in decision making

Table 1. shows that the implementation of the balanced scorecard has been used in several health sector organizations in the management system. Classification results based on research settings show that the implementation of balanced scorecard has been carried out in ICO, primary health care, hematology department, hospitals, home care nursing, health facilities, health systems, nutritional therapy company and clinical nutrition. The research method used in all papers was a case study, eleven papers with qualitative or quantitative research and one paper using the Delphi method. Balanced scorecard has been implemented in health service budgeting, developing key performance indicators, improving hospital performance, assessing the baseline status, as an indicator in conducting evaluations, as a performance measurement tool and quality measurement tool in hospitals.

DISCUSSION

As shown in Table 1, the list of paper used in the review were all case studies. From twelve papers, eight papers are qualitative research, three papers are quantitative research and one paper is research using the Delphi method. Based on the results, all research examines that the implementation of a balanced scorecard can be used in several functions. In line with the theory of Kaplan and Norton which states that balanced scorecard can also be used in health sector as an evaluation of health programs, service quality and improvement projects, accreditation, clinical pathways, and as a system of performance measurement in hospitals [5].

Integrated Care Organizations (ICO)

Based on the results shown in Table 1. Wu et al. states that the balanced scorecard can be implemented in budgeting planning at the ICO, one of the health sector organizations. It shows that the importance ranking of the core perspectives of the ICO balanced scorecard in the following order: patient, internal process, learning and growth, and financial. The weight-based analysis identified the important ranking of all indicators and pointed to the areas that require close attention in future ICO planning and management [6].

Health Care and Health Facility

As shown in Table 1, Ramón-Jerónimo et al. and Catuogno et al. who stated that both tools are fully implemented but differently used in primary care centers. Budget is perceived as a coercive management tool, which has been imposed for cost saving; however, it is scarcely adequate for day-by-day management. While balanced scorecard is a more flexible tool that allows identifying financial and welfare problems, budgeting limits heavily reduce the possibility of implementing adequate solutions. The policy of incentives is not adequate either, leading on motivation. This study shows that budgeting restrictions have led to a significant reduction in autonomy of Spanish Primary Care centers. Management decision making is much centralized, also focused on cost saving over quality of health care. As a result, two needs emerge for the future: increasing centers' autonomy and improving staff commitment through training and professional development programs. The paper develops and applies a customized version of balanced scorecard based on a new set of performance measures [7,9].

The results of the study shown in Table 1. by Wonjung et al. carry out the implementation of the balanced scorecard in developing KPIs. Wonjung et al. were generated a list of KPIs composed of 4 perspectives, 10 strategic objectives, and 31 KPIs. In the validity test of the performance prediction model, the factor with the greatest variance for increasing profit was maximum cost reduction of HCN services. The factor with the smallest variance for increasing profit was a minimum image improvement for HCN. During sensitivity analysis, the probability of the expert group did not affect the sensitivity. Furthermore, simulation of a 10% image improvement predicted the most effective way to increase profit. KPIs of HCN can estimate financial and non-financial performance. The performance prediction model for HCN will be useful to improve performance [11].

Balanced scorecard also can be implemented as an indicator in conducting evaluation in one of health sector. Gutiérrez et al. in Table 1. shows that balanced scorecard would allow a proper monitoring and tracking system for the main health care indicators. This contributes to a better control in comparison with standards that are associated with adequate quality assistance. Owing to the role of management accounting and cost calculations, the definition of health care professionals as clients or users, and clinical results relevance, it is necessary to adapt the balanced scorecard to the specific characteristics of the clinical field, redefining both perspectives and indicators [12].

Mutale et al. shows in Table 1. that balanced scorecard can be implemented in describing the baseline status. The study applied the balanced scorecard to describe the baseline status of 42 health facilities in three districts of Zambia. Differences in performance were noted by district and residence in most domains with finance and service delivery performing poorly in all study districts. This tool could be valuable in monitoring and evaluation of health systems [16].

Hospital Sector

Based on Table 1. Gao and Gurd shows that balanced scorecard is useful in improving hospital performance. It shows that bonus systems are important, partially because of the poor pay of hospital professionals, and the BSC is perceived as providing a fair system to award such bonuses. This helps explain the relative endurance of the BSC in Chinese hospitals [13].

Hwa et al. in Table 1. also successfully developed and implemented a BSC in an AHG as part of a strategic planning initiative. The BSC has been instrumental in allowing us to achieve balanced success in multiple domains. Academic groups should consider employing the BSC as it allows for a data-driven strategic planning and assessment process [15].

de Matos Nasser et al. also shows in Table 1. that balanced scorecard can be implemented in decision making. The implementation of indicators under the four perspectives of the Balanced Scorecard were favourable in the organizational performance, in helping the decision making process [17].

The balanced scorecard implementation has been carried out in many private sector and public sector. Balanced scorecard was introduced and developed as an approach or method in measuring performance. Likewise in health sector organizations, the balanced scorecard has been widely implemented in hospitals to improve hospital performance. The balanced scorecard is also used as a performance measurement tool and service quality measurement tool. In line with the theory of Kaplan and Norton the application of balanced scorecard can improve hospital work [1,5]. Based on research Nurdan et al. shows that the implementation of the balanced scorecard in 14 government hospitals has been carried out, but the performance of the hospital still does not increase due to one of the factors, the method of implementation that is not appropriate [18]. Therefore, this study examines how the implementation of the balanced scorecard has been successfully carried out in various health sector organizations.

This study has limitations, namely data sources and research articles that are still not varied and comprehensive, using only Google scholar and some open access journals. Researchers can then look for other data sources and conduct more specific studies, for example specifically in the field of hospitals or other fields.

Policymakers can make the results of this study an example of successful implementation of balanced scorecards in health sector organizations. This research can be developed to examine what factors influence the implementation of the balanced scorecard in health sector organizations. This research can be an indicator of consideration in preparing policy recommendations in the application of the balanced scorecard.

CONCLUSION

Balanced scorecard implementation in the health sector is important. It is useful in planning budgeting and implementing evaluations in health services. It is also useful for improving the performance and quality of services in the health sector organization. The implementation of balanced scorecard has been carried out in ICO, primary health care, hematology department, hospitals, home care nursing, health facilities, health systems, nutritional therapy company and clinical nutrition. Balanced scorecard has been implemented in health service budgeting, developing key performance indicators, improving hospital performance, assessing the baseline status, as an indicator in conducting evaluations, as a performance measurement tool and quality measurement tool in hospitals.

Future studies can do more specific studies, for example specifically in the field of hospitals or other fields. Future studies can also examine what factors influence the implementation of the balanced scorecard in health sector organizations.

Policymakers can make the results of this study an example of successful implementation of balanced scorecards in health sector organizations. The results of this study can also be indicators of consideration in preparing policy recommendations in the application of the balanced scorecard.

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

REFERENCES

1. Kaplan RS, Norton DP. The balanced scorecard: measures that drive performance. 1992.
2. Kaplan RS, Norton DP. The execution premium: Linking strategy to operations for competitive advantage. Harvard Business Press; 2008 Aug 4.
3. Rigby, D and Bilodeau. Management tools and trends. Bain and Company. 2009.
4. Aurora N, Rahardja R. Penerapan Balanced Scorecard Sebagai Tolak Ukur Pengukuran Kinerja : Studi Kasus Pada RSUD Tugurejo Semarang (Application of the Balanced Scorecard as a Measure of Performance Measurement: A Case Study in Tugurejo Regional Hospital Semarang). Semarang: Universitas Diponegoro.
5. Zelman WN, Pink GH, Matthias CB. Use of the balanced scorecard in health care. *Journal of health care finance*. 2003;29(4):1-6.
6. Wu X, Li S, Xu N, Wu D, Zhang X. Establishing a balanced scorecard measurement system for integrated care organizations in China. *The International journal of health planning and management*. 2019 Jan 7.
7. Ramón-Jerónimo JM, Flórez-López R, Domínguez-Lario N. Usefulness of the budget and the balanced scorecard in managing Primary Care Centres. Impact on staff motivation. *Atencion primaria*. 2018 Mar;50(3):166-75.
8. Jiménez-Rodríguez E, Feria-Domínguez J, Sebastián-Lacave A. Assessing the Health-Care Risk: The Clinical-VaR, a Key Indicator for Sound Management. *International journal of environmental research and public health*. 2018 Apr;15(4):639.
9. Catuogno S, Arena C, Saggese S, Sarto F. Balanced performance measurement in research hospitals: the participative case study of a haematology department. *BMC health services research*. 2017 Dec;17(1):522.
10. Klinger AS. Quality measures for dialysis: Time for a balanced scorecard. *Clinical Journal of the American Society of Nephrology*. 2016 Feb 5;11(2):363-8.
11. Noh W, Seomun G. Development and Application of a Performance Prediction Model for Home Care Nursing Based on a Balanced Scorecard using the Bayesian Belief Network. *Journal of Korean Academy of Nursing*. 2015 Jun 1;45(3).
12. Gutiérrez CL, Mauriz JL, Culebras JM. Balanced Scorecard as a management tool in clinical nutrition. *Nutricion hospitalaria*. 2015 Jul;32(1):403-10.
13. Gao H, Chen H, Feng J, Qin X, Wang X, Liang S, et al. Balanced scorecard-based performance evaluation of Chinese county hospitals in underdeveloped areas. *The Journal of international medical research*. 2018;46(5):1947-62.
14. Mutale W, Stringer J, Chintu N, Chilengi R, Mwanamwenge MT, Kasese N, et al. Application of balanced scorecard in the evaluation of a complex health system intervention: 12 months post intervention findings from the BHOMA intervention: a cluster randomised trial in Zambia. *PLoS one*. 2014;9(4):e93977.
15. Hwa M, Sharpe BA, Wachter RM. Development and implementation of a balanced scorecard in an academic hospitalist group. *Journal of hospital medicine*. 2013;8(3):148-53.
16. Mutale W, Godfrey-Fausset P, Mwanamwenge MT, Kasese N, Chintu N, Balabanova D, et al. Measuring health system strengthening: application of the balanced scorecard approach to rank the baseline performance of three rural districts in Zambia. *PLoS one*. 2013;8(3):e58650.
17. de Matos Nasser E, Reis da Costa SR. Implementation of indicators through balanced scorecards in a nutritional therapy company. *Nutricion hospitalaria*. 2013;28(3).
18. Nurdan JH, Sjafrizal S, Handra H, Dasman H. Performance Analysis of Indonesian Public Hospitals: A Panel Data Method. *Indian Journal of Public Health Research & Development*. 2019;10(4):447-52.