

Effectiveness of Strategic and Operational Management Accounting Techniques

Malihe Rostami^{1, 2, *}

¹Department of Management, University of Grenoble, Grenoble, France

²Department of Finance and Accounting, Electronic Branch, Islamic Azad University, Tehran, Iran

Abstract

This study has been done to evaluate the effectiveness of management accounting techniques and tools in bank. Actually, some management accounting tools can influence activities and also, managers' decisions. Management accounting is related to use of accounting information within organizations and provide them with the basis to make informed managers' decisions and control. In this study, according to prior studies about 14 techniques are chosen as strategic and operational management accounting techniques and then those techniques and tools are discussed with a standard questionnaire in terms of effectiveness. "Balanced scorecard (BSC)", "Boston matrix (BCG)", "Competitor analysis", "Core competencies (Prahalad & Hamel)", "Enterprise risk planning system (ERP)", "European fundamental quality management model (EFQM)", "Re-engineering analysis", "Responsibility accounting (RA)", "Return on equity and income analysis", "Risk management & modeling", "Six sigma analysis", "Spread rate analysis", "Strategic planning & mapping" and "SWOT analysis" are finalized in strategic and operational management accounting techniques model. The results show that "competitor analysis", "SWOT analysis" and "Core competencies" are three useful management accounting tools that can present and evaluate performance position in bank.

Keywords

Management Accounting, Effectiveness, Tools and Techniques

Received: May 24, 2015 / Accepted: June 10, 2015 / Published online: June 18, 2015

@ 2015 The Authors. Published by American Institute of Science. This Open Access article is under the CC BY-NC license.

<http://creativecommons.org/licenses/by-nc/4.0/>

1. Introduction

Nowadays, the data reflected in the financial statements and managers' experiences are not sufficient to help managers to decide. So, it is clear that an organization need to have a management system to identify problems, define possible solutions, and evaluate the solutions, choosing the optimal solution, implement, control and evaluation all process. Management accounting that is improved by passing the time can help managers.

Management accounting would be expected to provide measures of performance to influence policy in area such as pricing, product range and product design. In general terms, the types of management accounting data that one might expect to find in a large organization would include:

disaggregated data measuring efficiency and profitability at different levels [1].

The success of an organization depends on successful managers. So doing right and complete managerial tasks is necessary to achieve the goals and programs of the organization. Therefore, because of technology development, management tools for decision should be changed.

The role of management accounting function might also be affected by the implementation of the modern financial and operational control systems. It is a suitable way that employees can carry out routine activities more effectively, to handle large data base quickly, and report in a faster and more flexible way. New management accounting techniques have aimed at helping business decisions and taking control in an increasingly sophisticated way, more so than has

* Corresponding author

E-mail address: mle_rostami@yahoo.com

previously been done [2].

The need of multidimensional performance, like non-financial and financial, internal and external, qualitative and quantitative and comparative and absolute, measures have been demonstrated by many contemporary researchers, like Kaplan (1991), Bromwich and Bhimani (1989), Fitzgerald et al., (1991) [3].

Different organizations in order to achieve the management objectives use management accounting techniques. Some of objectives are:

- Develop long-term strategies and programs
- Decide to allocate resources
- Focus on social responsibility
- Increase the quality of services
- Assist managers in making decisions
- Motivate managers and employees to work more
- Performance measurement and evaluation [4], [5].

2. Management Accounting

Management Accounting includes the design and use of accounting within the organization. The data that is produced by the Financial Accounting and Cost will be analysed by Management accounting techniques and methods. Also, Management accounting is to provide financial reports to whole users and stakeholders.

Important components of management accounting are:

- Identification
- Measurement
- Accumulation
- Preparation
- Analysis
- Presentation
- Planning
- Evaluation
- Control [5].

3. Management Accounting Tools and Techniques

To achieve organization objectives, the selection of appropriate techniques with long-term goals and plans are important. According to prior studies and literature, some of

strategic and operational management accounting techniques are called in table 1.

Table 1. Strategic and operational management accounting techniques.

Row	Tools & Techniques
1	Balanced scorecard (BSC)
2	Boston matrix (BCG)
3	Competitor analysis
4	Core competencies (Prahalad & Hamel)
5	Enterprise risk planning system (ERP)
6	European fundamental quality management model (EFQM)
7	Re-engineering analysis
8	Responsibility accounting (RA)
9	Return on equity and income analysis
10	Risk management & modeling
11	Six sigma analysis
12	Spread rate analysis
13	Strategic planning & mapping
14	SWOT analysis

4. Research Model

In fig .1, Strategic and operational management accounting techniques model is shown with 14 tools.

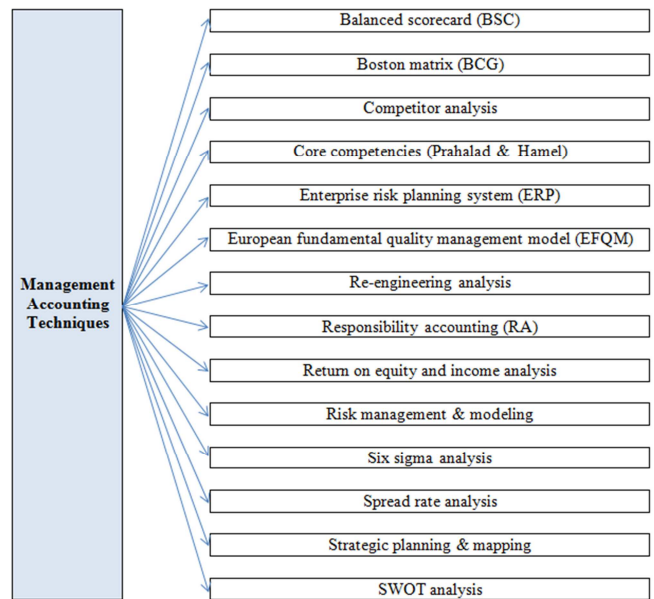


Fig. 1. Management accounting techniques model.

5. Definitions

5.1. Balanced Scorecard (BSC)

Balanced Scorecard is a tool used by many organizations used to evaluate the performance of different aspects. The model is not only to consider the organization performance internally, but many investors and shareholders, are able to monitor the results of this organization, assess and ensure [6].

This model suggests to evaluate the performance of each

organization must use the set of indicators. So that managers can monitor four major aspects of the organization:

So these four aspects are:

- Financial aspects
- Customer aspects
- Internal business aspects
- Learning and growth aspects [7].

5.2. Boston Matrix (BCG)

Boston matrix is planning tool that was developed by the Boston Consulting Group (BCG) in the 1970s. This matrix uses graphical shape and representations of organizations' services to help to decide what they do.

The BCG growth share matrix plots a company's offerings in a four square matrix, with the y-axis representing rate of market growth and the x-axis representing market share.

- Stars (rapid market growth and market share increases)
- Dairy cows (the market growth and increased market share)
- Dogs (market growth and market share low)
- A question mark (rapid market growth and market share low)

5.3. Competitor Analysis

The competitor analysis is a system to discuss on environment and whole industry and focus on external atmosphere as well as internal. Gathering and analyzing competitors' information is very important to find business position and take decision.

The growing complexity of the competitive environment of many industries convinced many top managers that they did indeed need more systematic analysis of their competitors [8].

5.4. Core Competencies (Prahalad & Hamel)

Core competencies for the first time are introduced by C. K. Prahalad and Gary Hamel. They deserve special key factor for any business that is based on the work of the organization and employees.

Core Competencies are a set of skills that a company or organization enables customers to offer unique products or services. This technique creates organizational learning with coordinating production and the use of a variety of skills and integration of multiple technologies.

Core Competencies creates a competitive advantage for the organization. Core Competencies tool allows organizations to invest significant difference on their strengths to create competition and integration in the strategy of the

organization.

Core competencies fulfill three criteria:

- Provides potential access to a wide variety of markets.
- Should make a significant contribution to the perceived customer benefits of the end product.
- Difficult to imitate by competitors.

5.5. Enterprise Risk Planning System (ERP)

Enterprise risk planning systems are a corporate marvel, with a huge impact on both the business and information technology world [9]. ERP systems promise to integrate business processes within and across functional areas in organizations. Early ERP systems primarily included inventory control software, material requirements applications and manufacturing planning modules. The continual evolution of ERP systems has subsequently encapsulated the full spectrum of business processes such as selling, marketing, purchasing, warehousing, accounting, and human resource planning into tightly integrated enterprise-wide information databases. The latest generation of ERP systems extends beyond the organization by capturing inter-organizational processes such as customer and vendor relationship management [10].

5.6. European Fundamental Quality Management Model (EFQM)

European Foundation for Quality Management is one of Business Excellence Model. Evaluation based on this model helps organizations to evaluate and analyze the industry and themselves.

In this technique, managers focus on goals and strategies. The objective and long-term goals help managers to develop the organization.

5.7. Re-Engineering Analysis

Reengineering in organization means a new beginning and new start up in process, minds, attitudes of managers and employees, the culture and value system, structure, and the use of information and communication technologies. Michael Hammer first theorized that the proposed re-engineering.

Features and benefits of re-engineering are:

- Integration Jobs
- Employee orientation
- Natural flow processes
- The logical reference
- Reduce inspection
- Reducing differences

- To create concentration and decentralization
- Promoting and enhancing organizational capital

5.8. Responsibility Accounting (RA)

Many commercial and industrial units are divided into smaller units and each given a special responsibility. Each section includes managers and staffs with specific tasks. Responsibility accounting helps all managers to move in the direction of the organization's goals and it help to do evaluation performance based on responsibilities.

The Responsibility accounting which is consistent with the notion of being answerable for what one is able to influence, may be viewed as conforming to a commonly held concept [11].

5.9. Return on Equity and Profit Analysis

5.9.1. Return on Equity (ROE)

The Return on equity in a business attempts to measure the return earned on equity component. It relates the earning left over for equity investors after debt service costs have been factored in to the equity invested in the asset [12].

5.9.2. Profit Before Tax (EBT)

The Profit before tax measures business's profits before paying income tax. This measure deducts all expenses from income including interest expenses and operating expenses, but it leaves out the payment of tax [13].

5.10. Risk Management & Modeling

The objective of risk management is to manage uncertainty and includes activities to identify, assess, monitor and mitigate the impact of risk in the business [14] Risk modeling refers to the use of formal econometric techniques to determine the aggregate risk in a financial portfolio. Risk modeling is one of many subtasks within the broader area of financial modeling. Risk modeling uses a variety of techniques including market risk, value at risk (VaR), historical simulation (HS), or extreme value theory (EVT) in order to analyze a portfolio and make forecasts of the likely losses that would be incurred for a variety of risks. Such risks are typically grouped into credit risk, liquidity risk, interest rate risk, and operational risk categories [15], [16].

5.11. Six Sigma Analysis

Six Sigma management philosophies in recent years have been popular. All the people in an organization, regardless of the organization should be involved in the implementation of Six Sigma and take effect. Contrary to the view of many people that Six Sigma is a set of secrets of their skills, which is only available to those with a university education, Six

Sigma is understandable for all employees; So that at the end of its implementation in an organization, everyone will have special skills. Six Sigma systems includes a set of techniques and tools to focus on the continuous improvement process, analyze and compare them to the resource allocation process that requires more attention.

Actually, as of its foundation, Six Sigma teaches people throughout the organization who are efficient and helpful. One Six sigma tool is DMAIC (define, measure, analyze, improve, control) [17].

Principles of Six Sigma are:

1. The real focus on customer
2. The management based on the information and facts
3. A focus on process management and improvement
4. Preventive Management
5. Cooperation infinite
6. Towards perfection (zero errors), power failure tolerance (error)

5.12. Spread Rate Analysis

The spread rate is the difference between the average rate earning and receives from loans and other assets and the average rate paying from deposits and other debts. Spread rate show business ability to gain profit [18], [19].

5.13. Strategic Planning & Mapping

Strategic Planning and strategic decision-making process of the organization define a strategy for how to find the resources needed to achieve strategic objectives. This process also involves people and resources.

The organization will know where it is located and how to manage all things and make future. A document obtained from this process is called the strategic plan of the organization.

5.14. SWOT Analysis

SWOT analysis is an established method for assisting the formulation of strategy that focus on Strengths and Weaknesses, and Opportunities and Threats of business [20].

This analysis helps managers to recognize organization and decide accurately. Also, this method can be used to analyze the situation as an input to the strategic planning process for an organization.

6. Research Tool

In this study, a questionnaire with 5 Likert scale based on

table 2 and 32 questions is used. In this questionnaire for each tool, the relative questions are discussed to evaluate techniques effectiveness.

Table 2. Five-point Likert scale.

1	2	3	4	5
Seldom	Not Much	So-So	Much	Very Much

7. Reliability and Validity of the Research Tool

7.1. Reliability Analysis

In order to analyze the reliability of the employed questionnaire in this study is examined Cronbach's alpha. The results are depicted in table 3. As it is clear all the variables are devised reliable according to calculated alpha

Table 3. Cronbach's alpha.

Title	variables	Cronbach's alpha
Management Accounting Tools alpha = 0.975	Competitor analysis	0.759
	SWOT analysis	0.985
	Core competencies (Prahalad & Hamel)	0.684
	Boston matrix (BCG)	0.878
	Six sigma analysis	0.718
	Spread rate analysis	0.734
	Strategic planning & mapping	0.396
	Responsibility accounting (RA)	0.983
	EFQM model	0.877
	Balanced score card	0.918
	Risk management & modeling	0.860
	Enterprise risk planning system (ERP)	0.750
	Re-engineering analysis	0.970
Return on equity and income analysis	0.970	

7.2. Validity Analysis

Validity of the tool ensures that a sufficient number of appropriate questions to measure the concept are considered and construct validity indicates apparent ability to measure the concept. For facial and content validity, the questionnaire was debated by experts both academics and professionals.

8. Respondent's Organizational Position

According to data collected, 5 managers, 10 deputies, 10 senior experts in an Iranian bank respond questionnaires. Minimum age of the gathered sample was 28 year old and maximum was 45 year old. Also, Minimum work experience

was about 11 years and maximum was about 21 years.

9. Research Analysis Method

Confirmatory factor analysis (CFA) is a statistical method for verifying the factor structure of a measurement instrument. CFA allows the researcher to test the hypothesis that a relationship between the observed variables and their underlying latent construct(s) exists. The researcher uses knowledge of the theory, empirical research, or both, postulates the relationship pattern a priori and then tests the hypothesis statistically [21].

10. Results and Discussion

In this article, some practical management accounting tools are chosen and after is tried to find their importance to use. According to questionnaire results and some analysis such as CFA and Freidman test Competitor analysis, SWOT analysis, Core competencies are three important techniques to convince managers to decide and conduct.

In table 4, one-Sample Statistics are described. Significant level of each tools are zero and valued. In order to perform the T-Test the normality of the gathered data probed and the test value defined as 3 since that the midpoint of the scale was about 3 as well.

According to table 5, Friedman test is calculated and is shown the priority of Strategic and operational management accounting techniques. By Friedman Test, Competitor analysis, SWOT analysis, Core competencies, Boston matrix, Six sigma analysis, Spread rate analysis, Strategic planning & mapping, Responsibility accounting, EFQM model, Balanced scorecard, Risk management & modeling, Enterprise risk planning system, Re-engineering analysis, Return on equity and income analysis are important as Strategic and operational management accounting techniques in priority.

11. Conclusion

This article's results describe some strategic and operational management accounting techniques those are different methods to manage short-terms and long-terms plans and strategies in an organization. This is clear that the results will be different in another organizations and industries.

Managers can select some useful tools to use and monitor weekly or monthly to improve organization's level.

According to results of research population, focus on competitor analysis can help organization to keep itself in industry. Actually, when organization's managers compare

and analyze some output with others, they can improve organization plan and route. On the other side, by core competencies theory, they can choose important indicators key to monitor and check organization activities and revise

some strategies and long-term plan to reach on main goals and mottos. With some strategic methods, organization can find the best way to move and gain more results, especially in finance aspect and increase stakeholder's welfare and power.

Table 4. One-Sample Statistics.

Tools	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Boston matrix (BCG)	29.892	24	.000	4.04000	3.7611	4.3189
Competitor analysis	28.864	24	.000	4.32000	4.0111	4.6289
Core competencies	33.794	24	.000	4.06000	3.8120	4.3080
Enterprise risk planning system	23.496	24	.000	3.72000	3.3932	4.0468
Balanced score card	31.007	24	.000	3.66000	3.4164	3.9036
Re-engineering analysis	21.833	24	.000	3.49333	3.1631	3.8236
EFQM model	35.542	24	.000	3.81333	3.5919	4.0348
SWOT analysis	41.714	24	.000	4.22667	4.0175	4.4358
Responsibility accounting (RA)	41.355	24	.000	4.08000	3.8764	4.2836
Return on equity and income analysis	24.000	24	.000	3.36000	3.0711	3.6489
Risk management & modeling	33.047	24	.000	3.68000	3.4502	3.9098
Six sigma analysis	51.000	24	.000	4.08000	3.9149	4.2451
Spread rate analysis	51.000	24	.000	4.08000	3.9149	4.2451
Strategic planning & mapping	44.434	24	.000	4.04000	3.8523	4.2277

Table 5. Friedman Test.

Rank	Tools	Mean Rank
1	Competitor analysis	10.12
2	SWOT analysis	9.94
3	Core competencies (Prahalad & Hamel)	9.32
4	Boston matrix (BCG)	9.20
5	Six sigma analysis	9.16
6	Spread rate analysis	9.16
7	Strategic planning & mapping	8.96
8	Responsibility accounting (RA)	8.60
9	EFQM model	7.40
10	Balanced scorecard	6.44
11	Risk management & modeling	6.40
12	Enterprise risk planning system (ERP)	5.46
13	Re-engineering analysis	5.27
14	Return on equity and income analysis	5.12

References

- [1] Billings, M., & Capie, F. (2004). The development of management accounting in UK clearing banks, 1920–70. *Accounting, Business & Financial History*, 14(3), 317-338.
- [2] Järvenpää, M. (2007). Making business partners: A case study on how management accounting culture was changed. *European Accounting Review*, 16(1), 99-142.
- [3] Hussain, M. (2005). Management accounting performance measurement systems in Swedish banks. *European Business Review*, 17(6), 566-589.
- [4] Alwattage, C., Hopper, T., Wickramasinghe, D., (2007), Introduction to management accounting in less developed countries, *Journal of accounting & organizational change*, Vol. 3, No. 3, 183-191
- [5] Modarres, A. & Kazemi, M., (1390), Management accounting tools in banking industry, MSc dissertation, Tehran university, Iran
- [6] Wu, H. Y., Tzeng, G. H., & Chen, Y. H. (2009), A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. *Expert Systems with Applications*, 36(6), 10135-10147.
- [7] Feizi, A., & Solukdar, A. (2014), Combined with a balanced scorecard approach to performance assessment of the banking industry - with Fuzzy TOPSIS method, *Engineering and management of securities*, 20, 57-78
- [8] Ghoshal, S., & Westney, D. E. (1991). Organizing competitor analysis systems. *Strategic Management Journal*, 12(1), 17-31.
- [9] Van Everdingen, Y., Van Hillegersberg, J., & Waarts, E. (2000). Enterprise resource planning: ERP adoption by European midsize companies. *Communications of the ACM*, 43(4), 27-31.
- [10] Hunton, James E., McEwen, Ruth Ann and Wier, Benson, The Reaction of Financial Analysts to Enterprise Resource Planning (ERP) Implementation Plans. *Journal of Information Systems*, Spring 2002. Available at SSRN: <http://ssrn.com/abstract=302826> or doi:10.2139/ssrn.3028
- [11] Choudhury, N. (1986). Responsibility accounting and controllability. *Accounting and Business Research*, 16(63), 189-198.
- [12] Damodaran, A. (2007). Return on capital (ROC), return on invested capital (ROIC) and return on equity (ROE): Measurement and implications. *Return on Invested Capital (ROIC) and Return on Equity (ROE): Measurement and Implications (July 2007)*.
- [13] Huizinga, H., & Laeven, L. (2008). International profit shifting within multinationals: A multi-country perspective. *Journal of Public Economics*, 92(5), 1164-1182.
- [14] Santomero, A. M. (1997). Commercial bank risk management: an analysis of the process. *Journal of Financial Services Research*, 12(2-3), 83-115.
- [15] Ahmed, A. (2010). Fifty Two Tools of Management Accounting. Available at SSRN 1654466.

- [16] Rasmussen, J. (1997). Risk management in a dynamic society: a modelling problem. *Safety science*, 27(2), 183-213.
- [17] Mozafari, M.M., Tolouee, M., (2015), Six sigma role in organization's performance improvement, International conference of accounting and management
- [18] Afanasieff, T. S., Lhacer, P. M., & Nakane, M. I. (2002). The determinants of bank interest spread in Brazil. *Money Affairs*, 15(2), 183-207.
- [19] Wong, K. P. (1997). On the determinants of bank interest margins under credit and interest rate risks. *Journal of Banking & Finance*, 21(2), 251-271.
- [20] Dyson, R. G. (2004). Strategic development and SWOT analysis at the University of Warwick. *European journal of operational research*, 152(3), 631-640.
- [21] Suhr, D., & Shay, M. (2009, September). Guidelines for reliability, confirmatory and exploratory factor analysis. In *Proc. 2009 Western Users of SAS Conf. San Jose, CA*.