

Application of “Balanced Scorecard”, in performance measurement of National oil-rich south Company

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ABSTRACT: This study aims at investigating the feasibility of the application of “Balanced Scorecard”, in performance measurement of National oil-rich south Company. Balanced Scorecard is one of the management accounting techniques. This technique organized in four distinct prospective: financial, customer, internal processes, and learning and growth. This technique changes the organization vision and strategy to goals and criteria which are organized in four prospective: financial, customer, internal processes and learning and growth. Four prospective related to balanced scorecard were analyzed based on one main hypothesis and four subsidiaries. The gained results of Statistical analysis showed that indicating in all prospective of Balanced Scorecard in Petroleum is possible, but yet pre-required and needed thought to implementing this technique in Petroleum Company is not done well. I found out through more surveys that customer prospective was the most noticeable prospective and internal processes, financial and learning and growth prospective were ranked respectively.

Keywords: Balanced Scorecard strategy, financial measures, nonfinancial measure

Introduction

Now, companies step into information competition from industrial competition, the former phase. At industrial era, financial controlling systems were developed in companies such as General Motors , Dupont , Matsushita and General Electric , to usefully devote and control the financial and physical funds. Criteria such as operating profit and fund revenue can estimate the operational sections effectiveness and usefulness which used financial and physical funds for creating value . In information era, many fundamental hypotheses of industrial competition era are put aside. Companies can't achieve the advantage of the permanent competition by just having new technology and better managing the assets and financial debts. In the information era, companies either productive or servicing need new abilities for being successful in competition. The ability of company in using intangible assets is more important than visible and physical assets.

Studies have shown that strategies achieve approximately 65% of their potential financial operation, financial criteria weaknesses, competition atmosphere, vanish of the old values for marketing and consumers, obliged companies to review their interests views and values (Kurtzman, 1997, p.128).

Theoretical discussions about the difficulties in using financial criteria, discussion about estimating invisible assets, removing the lack between planning and working a strategy, and removing the obstacles of working a strategy

result in the use of the balanced preferential card by the management. Companies apply balanced assessment methods for development, performance and controlling strategy through balance using of financial and non-financial criteria. Balanced assessment method permanently and through the process of systematic control and reporting based on different operational aspects emphasis on obvious and future theory. Balanced assessment includes of a complex of interrelated operational criteria which are extracted from organization's strategy and help the development , implement and control of the organization strategy (Kaplan & Norton, 1996, p.80) .

Boulianne (2006) through studying the reliability and validity of balanced assessment and its related criteria, found that balanced assessment is reliable and valid model for operation assessment.

Chen et al. (2006) analyzed the important aspects of operating the balanced assessment. They found that the participation of the senior manager, of the other managers, the support of the senior management of the organization, and the organization size have an important contribution to the balance assessment method operation. They also showed that these aspects change as the the operation of the balanced assessment moves from one step to the other.

Othman (2006) studied the effects of Causal model of the strategy on conducting the balance assessment method. Studies about balanced assessment acceptance show that many companies that accept balanced assessment don't make a causal model for their strategies . In this paper ,

Othman, Perused differences between companies which made and didn't make a causal model also, for their strategies during balanced assessment performance . His results showed for balanced assessment successful performance, developing and elaborating a causal model strategy for every organization is necessary.

Kohlbecek and Warfield (2007) studied unrecorded invisible assets effects on abnormal revenue and shareholders' rights, in banking industry . They discovered that abnormal revenue monotony then banking abnormal revenue multiple pricing are changing, proportional with unrecorded invisible assets level. Their evidences show that unrecorded invisible assets are very important for understanding monotony and abnormal revenues of banking industry . One of important characteristics of financial information is revenue monotony, that investors using it for company valuation.

Questions and Hypotheses

Research main questions

- 1 – Is it possible to execute “Balanced Scorecard “technique for performance measurement of National oil-rich south Company?
- 2 – Which Balanced Scorecard perspective has the most application?

Secondary questions research

- 1 – Is it possible to make index in Balanced Scorecard financial perspective?
- 2 – Is it possible to make index in Balanced Scorecard customer perspective?
- 3 – Is it possible to make index in Balanced Scorecard in internal business processes perspective?
- 4 – Is it possible to make index in Balanced Scorecard from learning and growing view?

Hypotheses

- 1 - Index making in balanced assessment financial perspective is possible.
- 2 – index making in balanced assessment customer perspective is possible.
- 3 – index making balanced assessment in internal processes perspective is possible.
- 4 – Index making balanced assessment in learning and growing perspective is possible.

Participants

Participants in this study includes of financial managers and supervisors of national company of south oil- field in this research

Statistical sample

Due to being new of the balanced assessment technique in Iran, no sampling will be done. All the financial managers and supervisors of the different sections of south oil- field national company were surveyed , in fact participants and statistical sample are the same

Period

2011 Iranian financial year is used for measuring variables in this study.

Research method

Based on application aim and method , this study is descriptive and analytical. Based on the topic, this study put in the management accounting field, and perusing the implement of balanced assessment possibility, in south oil - field national company.

To analyze the gathered data, descriptive and deduction statistics are used . For the quality analysis of obtained general data from questionnaires, statistical descriptive methods such as , frequency, mean, median, and mode are used . To test the research theory, non-parametric test Qp (median test) , U test – Mann-Whitney , H test – Kruskal – Wallis are used

Data analysis and hypotheses test results

Questions posed and presented with the answer choices of, at all, low, medium, much, and very much choices and valued by 1,2,3,4,5 numbers. Since every question can be regarded as an random variable, the mentioned statistical methods in the two sections of descriptive statistics and deduction statistics were selected based on meaningful perspective and achieving this research goal by accepting or rejecting this study hypothesis. Non-parametric test Qp by putting $p = .5$ (medium test) , U test – Mann-Whitney , H test – Kruskal – wallis and Freedman test were used for data analysis. Questionnaires were analyzed statistically by using EXCEL and SPSS programs.

Research main theory test

At first, for research main theory as possibility measuring of balanced assessment , questions 1 to 60 are perused. Then, questions 1 to 24 as necessary reflective and operative prerequisites for balanced Scorecard implement were studied and tested. In the below table, results of questions related to research main theory are showed (questions 1 to 60) .

Descriptive information related to main theory test

Mode	median	medium	Some
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4.36	3.78	3.71	151
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Test results related to main theory

stratum	some	Observed p %	Test p	p-value
≤ median	66	026	05	0004
> Median	85	074		
total	151	100		

As can be seen, 45 cases from 151 cases (74%) are bigger than median therefore, we expect that hypothesized Zero is being rejected since p – obtained some is 0004, thus at 001 level main theory is accepted (questions 1 to 60).

Performing supposed test based on the study questions number 1 to 24 .

Descriptive data related to main theory test (prerequisites)

Mode	median	medium	Some
4.36	3.78	3.71	151

Test results related to main theory test (prerequisites)

stratum	some	Observed p %	Test p	p-value
≤ median	104	068	0.5	0.002
> Median	47	032		
total	151	100		

As we can see. In 132 cases from the 151 cases (68%) were equal or less than medium, and in 19 cases were more than medium. we expect that hypothesized Zero is being rejected since p – obtained some is 0004, thus at 001 level main theory is accepted (questions 1 to 60).

Main theory accepted at 0.05 level (questions 1 to 60). Therefore, by considering two results tests related to main

theory research , we can conclude that: Performing balanced assessment is possible at national company of south oil-field .

Thus, by regard to first by-theory results we can conclude that: Index making from financial perspective at national company of south oil-field is possible.

Test results related to second by-theory test

stratum	some	Observed p %	Test p	p-value
≤ median	56	037	05	0000
> Median	95	063		
total	151	100		

Thus, by regarding test results, we can conclude that: Index making from customer perspective at national company of south oil-field is possible.

Test results related to third by-theory test

stratum	some	Observed p %	Test p	p-value
≤ median	47	031	05	0000
> Median	104	069		
total	151	100		

Thus, by regarding test results, we can conclude that: Index making from internal processes perspective at national company of south oil-field is possible.

Results related to fourth by-theory test

stratum	some	Observed p %	Test p	p-value
≤ median	52	032	05	0017
> Median	99	068		
total	151	100		

Thus, by regarding test results, we can conclude that: Index making from learning and growing perspective at petrochemical companies is possible.

Test results of comparing medium grade theories by using FreedmanTest

Medium grade	Comparing parameters
3.79	Second theory
3.31	Third theory
2.99	First theory
2.54	Fourth theory

Statistic's test and some of meaning level of Freedman test for comparing theories grades

Meaning level	Freedom level	Statistic's some	Some
0000	4	55.633	151

Due to obtaining 0 for P and because this some is less than 0.01, therefore from zero assume one can conclude that certainty level H_0 99% is rejected. so, as be seen H_0 is rejected, namely, that theories grades medium are not same.

By using this test various theories performing possibility can define (for example, index making from different perspectives comparing and finding a theory with more possible performance). By regard to this research and base on Freedman test, observed that index making from Customer perspective is more possible.

Conclusion

As mentioned before, this research has a main hypothesis and four secondary hypotheses, all five theories were tested statistically. 176 questionnaires were distributed between managers, assistants, and company's financial supervisors, as well. 151 questionnaires were suitable for analysis. Then, appropriate to sample type, statistical tests were done. Hypotheses were tested in formats of nonparametric test Q_p (median test), U test – mann Whitney and H test – kruscall walis. Finally, Freedman test was used for grading theories respect to each other.

Research outcomes summary

Theory test results	Description	theory
Confirmed	Balanced assessment implement possibility measuring in National oil-rich south Company	Main theory
Confirmed	Index making possibility from financial perspective for balanced assessment in National oil-rich south Company	First by-theory
Confirmed	Index making possibility from customer perspective for balanced assessment in National oil-rich south Company	Second by-theory
Confirmed	Index making possibility from internal processes perspective for balanced assessment in National oil-rich south Company	Third by-theory
Confirmed	Index making possibility from learning and growth perspective for balanced assessment in National oil-rich south Company	Fourth by-theory

Therefore, balanced Scorecard implementation in south oil-field national company is possible.

Reference

- Albright, T. and M. Lam (2006) “*Managerial Accounting and Continuous Improvement Initiatives: A Retrospective and Framework*” Journal of Managerial Issues, Vol. 18, No. 2, pp 157- 174.
- Atkinson, Antony (2000). “*Measure for Measure*”. CMA Management, Vol. 74, Issue. 7, pp. 225- 246.
- Atkinson, A. A & Epstein, M. J(2000). “*Measure for Measure: Realizing The Power of The Balanced Scorecard*”. CMA Management, pp. 22-28.
- Atkinson, A. A, McCrindell, J.Q (1997). “*Strategic Performance Measurement in Government*”. CMA Magazine, pp. 20- 23.
- Banker, R. D. Chang, H. and M. J. Pizzini (2004). “*The Balanced Scorecard: Judgmental Effects of Performance Measures Linked to Strategy*”. The Accounting Review, Vol. 79, No. 1, pp. 1- 23
- Bhagwat, R. and M. K. Sharma (2007). “*Performance Measurement of Supply Chain Management: A Balanced Scorecard Approach*”. Computer & Industrial Engineering, Article in Press.
- Brockett, P. L, Cooper, W.W, Lasdon, L and B. L. and B. L. Parket (2005) “*A Note Extending Gross Koff, Hayes, Taylor and Weber, Anticipating the Consequences of School Reform: A New Use of DEA*” Socio- Economic Planning Science, Vol. 39, pp. 351- 359.

- Chen, H. Duh, R. and J. Lin (2006). *"The Determination of Implementation Stages of Balanced Scorecard"*. International Journal of Management & Decision Making, Vol. 7, Issue. 4, pp. 1-11.
- Chan, Y. L (2006) *"An Analytic Hierarchy Framework for Evaluating Balanced Scorecard of HealthCare Organization"* Canadian Journal of Administrative Science, ABI/INFORM Global, p. 85.
- Cameron. P(2002). *"The Balancing Act"*. CMA Management, pp. 28- 31.
- Chan, Y. L & HO, S. K(2000). *"Performance Measurement and The Use of Balanced Scorecard in Canadian Hospital"*. Advanced in Management Accounting. Pp. 145-169.
- Fernandes, K. J. Venesh, R. and A. Whalley (2006). *"Lessons From Implementing The Balanced Scorecard in A Small and Medium Size Manufacturing Organization"*. Techno Vation, Vol. 26, pp. 623- 634.
- Folly, B. Saliva. G And Prochoice. V (2005) *"Seven Challenges for the Implementation of Balanced Scorecard in Hospital"* Paper Presented at the 3th Conference on Performance Measurement and Management Control. Brazil.
- Ittner, C. D, Larcker. D. F. *"Subjectivity and The Weighting of Performance Measure: Evidence from a Balanced Scorecard"* The Accounting Review, Vol. 78, pp. 725- 768.
- Ittner, C. D, Larcker. D. F. (1998a) *'Are non-financial measures leading indicators of financial performance? An analysis of customer satisfaction'*, Journal of Accounting Research, 36 (Supplement), 1-34.
- Gumbus, A. and R. N. Lussier (2006). *"Entrepreneurs Use a Balanced Scorecard to Translate Strategy Into Performance Measure"*. Journal of Small Business Management, Vol. 44, Issue. 3, pp. 407- 425.
- Gumbus, A. and Lyron, B (2002) *"The Balanced Scorecard at Philips"* Electronics Strategic Finance, pp. 45- 49.
- Horngren, C. T. Datar, S. M. and G. Foster (2006). *Cost Accounting: A Managerial Emphasis*. 12th Edition , New Jersey: Prentice- Hall, Inc.
- Kaplan, R. S. and A. A. Atkinson (2007). *Advanced Management Accounting*, Third Edition, Prentice-Hall of India Private Limited, New Delhi- 1110001, pp. 367- 441.
- Kaplan, R. S. and D. P. Norton (1993). *"Putting The Balanced Scorecard To Work"*. Harvard Business Review, Vol. 71, Issue. 5, pp. 134- 142.
- Kaplan, R. S. and D. P. Norton (1996). *"The Balanced Scorecard: Translating Strategy To Action"*. Boston: Harvard Business Riview, Jan- Feb, pp. 75- 85.
- Kaplan, R. S. and D. P. Norton (1996). *"Using Balanced Scorecard as A Strategic Management System"*. Harvard Business Riview, pp. 115-137.
- Kaplan, R. S. and D. P. Norton (2001). *The Strategy Focused Organization*. Boston: Harvard Business School Press.
- Kaplan, R. S. and D. P. Norton(2006). *Alignment: Using The Balanced Scorecard To Create Corporate Synergies*. Boston: Harvard Business School Press.
- Kershaw & Kershaw, S. (2001). *"Developing a Balanced Scorecard To Implement Strategy At St. Elsewhere Hospital"*, Management Accounting Quarterly, 2(1), pp. 28- 35.
- Kurtzman, J(1997). *"Is Your Company Off Course? Now You Can Find Out Why"*. Fortune, pp. 128- 130.
- Libby, T. Salterio, S. and A. Webb(2004). *"The Balanced Scorecard: The Effects Of Assurance and Process Accountability On Managerial Judgment"*. The Accounting Review, Vol. 79, No. 4, pp. 1075- 1094.
- Lipe, M. G. and S. E. Salterio(2000). *"The Balanced Scorecard: Judgmental Effects of Common and Unique Performance Measure"*. The Accounting Review, Vol. 75, No. 3, pp. 283- 298.
- Lisiecka. K (2002) *"The Balanced Scorecard"* Quarterly Problem, no. 6, p. 4.
- Mencius, Michael and Steele, Richard (2005). *"Turning Great Strategy into Great Performance"*. Harvard Business Review, p. 58.
- Michalska. J (2005) *"The Usage of The Balanced Scorecard for the Estimation of Enterprise Effectiveness"* Journal of Materials Processing Technology, No. 162- 163, pp. 751- 758.
- Mc Stravic, S. (1999) *"A Really Balanced Scorecard"* Health forum Journal, Vol. 42(3), pp. 64- 67.