International Journal of Enhanced Research in Educational Development (IJERED)
ISSN: 2320-8708, Vol. 6 Issue 1, Jan.-Feb., 2018, Impact Factor: 1.554

Balanced Score Card: Study of Awareness and Application by Chief Executive Officers of Manufacturing Companies from Pune, India

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Abstract

Objectives: This is a descriptive cross-sectional study to gauge the awareness and application of the concept of Balanced Score Card (BSC) among CEO of manufacturing companies in Pune, using a survey questionnaire.
Materials and Methods: Descriptive hypotheses were set and studied based on primary data collected from 100 CEOs based in from Pune who were surveyed from different manufacturing companies on the awareness and application of Balanced Score Card, a strategic comprehensive performance related management tool in their actual work. Both knowledge and application were measured on a 5-point Likert scale for responses to 10 items under each of the variables. Sample means were compared against the hypothesized population means of the scale mid-points of 2 and were tested for statistical significance at 95% confidence level.
Results: The study revealed that both the sample means for awareness and application were statistically significant, albeit, on opposite sides. While the awareness mean was found to be well above the hypothesized population mean, the application level mean was found to be considerably lower than the hypothesized population mean. **T**he total awareness level was found to be statistically significant with a mean of 3.24 with an SD of 0.87. The total application level was found to be statistically significant with a mean of 1.43 with an SD of 0.75.
Conclusion: The results of the study have confirmed our earlier speculation when it comes to the application of Balanced Scorecard at the practice level, everything seems so typical Indian and unfortunately they have to tag it off by saying "Not Applicable!"

Keywords: Balanced Score Card (BSC); Manufacturing Companies; Strategy

Introduction

The concept of the Balanced Score Card was based on the importance of the measurement of the intangible assets (Goodwill, Brand, Employee skills, product and process innovation, etc.) and how to incorporate their value into the company's management system. The whole concept of the Balanced Score Card is having a strategy and outlines its objectives; measure the performance; formulate a strategy management system for present and future opportunities (Kaplan, 2010).

The mainstays of measuring the performance of vision and strategy are Financial metrics, Customer, Internal business process, and Learning and growth. They are measured on the four pillars of objectives, measures, targets, and initiatives. But the biggest challenge was how to measure the intangible assets as their value could not be accounted for directly on the balance sheets and their worth indirectly affected the profit and revenue (Kaplan, 2010).

Moreover, the importance of an intangible asset depends upon two important dimensions: *organizational context and strategy*. The example for organizational context can be explained as follows: the worth of an investment banker who manages complex financial products and has niche customers is fruitless on the financial services jobs which accentuate operational efficiency which is low cost and technology-based trades (e-trades). Then again if a new sales strategy has to be implemented, it will need a new database of customers; training of new employees for the same; new information and organization system and thus a new creation of assets and strategy is needed which link it together in a multiplicative manner (Kaplan, 2010).

This means that different companies (organizational context) have to select different metrics for their strategy they want to implement and that should be preceded by the objectives they want to achieve. For example, Wal-Mart has a low-cost strategy as compared to a completely customer oriented strategies by Nordstrom (Kaplan 2010).

Failure to implement the Balanced Score Card was traced back to CEO,s and their lack of executive leadership (Kaplan, 2010), this issue matches our concern in India that a few CEOs who are cognizant that they have even done the Advanced Management Program (AMP) at Harvard and have developed great conceptual clarity. But when it comes to application, everything seems so typical Indian and unfortunately they have to tag it off by saying "Not Applicable!"

A study done by Wu et al (2009) found that the conventional Balanced Score Card was more objective and comprehensive to use for their work and could not consolidate various performance indicators. Therefore this research study intends to elicit the gap between awareness and application of core concepts and advancements in Balanced Score Card among CEOs based in Pune India.

Literature Review

The literature review is based on the following directions:

Historical Perspective

The history of Balanced Score Card, dates back to General Electric staff who had first incorporated the principles of Balanced Scorecard in the 1950s but they never got integrated into their management systems as the managers concentrated on short-term financial goals deeming them as the most important variable. In the 1960s, Anthony (1965) observed that strategic planning with its financial conundrums is- "*cause-effect relationship between action and outcome"* is hard to predict and measure. Furthermore, 1975 – 1990 saw an era of Total Quality Management by the Japanese which was still much better than the U.S based on narrow short-term financial goals.

BSC and Small and medium-sized enterprises (SME)

BSC is a comprehensive framework to implement, execute, and measure strategy, and focuses on drivers of future and past performances. It has been deemed a success with a utilization rate of 44%. (Papalexandris et al, 2004; Malmi, 2001; Rigby 2001). A study done by Basuony(2014) has been observed that SME (small-medium enterprises) in the US and Canada, with about 100 employees, fail 5% to 63% within 2-5 years (Monk, 2000) and this has been attributed to the datum that the owner-manager directs all the operation and could benefit by incorporating principles of Balanced Score Card. Difficulty in implementation of Balanced scorecard in SME range from lack of trained human resources to implement and measure strategy and benefit from developing BSC is a slow process and the cost to do it is comparatively higher (Basuony, 2014).

BSC Strategy

Based on data from 66 Australian Manufacturing companies, Hoque and James(2000) observed that though BSC implementation improves performance but has no statistically significant association with a market position, organization size, or product life cycle.

Methodology

1. A survey questionnaire was administered to 100 CEOs.
2. The selection of the 100 CEOs was based on the judgment of the writer of getting an adequate response in a reasonable time. Convenient sampling was used.
3. The survey questionnaire was divided into two parts: a. Assessment of conceptual knowledge and b. Assessment of concepts practiced
4. 10 questions each for the two sections were framed and responses were sought on Likert-scales.
5. For assessment of knowledge levels the scale used was: 0-Not at all aware, 1-Little bit aware, 2-Somewhat aware, 3-Well aware, and 4-Highly aware. The ten items were: Financial or stewardship perspective, Customer and stakeholder perspective, Internal process perspective, Learning and growth perspective, Vision and Mission, Strategy maps, Strategic objectives, Measures, Targets, Initiatives,

(Source: www.balancescorecard.org, 2017)

1. For assessment of practical application levels the scale used was: 0-Not at all used, 1-Used a little bit, 2-Used somewhat, 3-Used well, 4-Used widely. The ten items listed in point 5 above were assessed for their application levels in practice.
2. A data-set of the 125 respondents was created and the hypotheses tested based on responses to the 10 questions in the two sections were:

Statement of Hypotheses:

H_{o1}: The knowledge levels about the BSC concept is reasonable
H_{a1}: The knowledge level about the BSC concept is better than reasonable
H_{o2}: These concepts are applied in practice as well at a reasonable level
H_{a2}: These concepts in practice are not applied at a reasonable level
The survey instrument returned a Cronbach's alpha of 0.897 that is better than 0.70 (the standard) and hence was considered as reliable.

Data analysis included descriptive analysis specifying features of the sample and the inferential analysis to test the hypotheses. A t-test was used given the fact that the SD of the population is not known, in which case, a Z-test could have been applied. The use of a t-test in practice is widely done as a substitute for the Z-test wherein the SD of the sample is taken as the SD of the population (given unknown population SD).

Results

Male CEO's (93) formed a larger proportion of the sample as compared to females (7).
Most of them belonged to the age group > 50 years (38) with at least ten to fifteen years of experience (37) (Table 1).

Table 1 : Descriptive analysis

Gender		No of Respondents(N=100)
1	Male	93
2	Female	7
Age Groups		
Group 1	< 40years	37
Group 2	40-50years	25
Group 3	>50 years	38
CEO Work Experience		
Group 1	10-15 years	37
Group 2	15-20 years	30
Group 3	>20 years	33
Company type		
1	MNC(Multi-national Company)	50
2	Indian	50

The null hypotheses were set as the sample mean ($\bar{x}$) equals the hypothesized population mean (μ).Summary of the ratings for the awareness levels are given in Table 2 below:

Table 2: Summary of responses for awareness level of the concepts

Concepts	1	2	3	4	5	6	7	8	9	10	Total
Average awareness rating	3.34	3.26	3.16	3.21	3.34	3.17	3.18	3.23	3.34	3.21	3.24

Summary of the ratings for the application levels are given in Table 3 below:

Table 3: Summary of responses for application level of the concepts

Concepts	1	2	3	4	5	6	7	8	9	10	Total
Average application rating	1.36	1.36	1.37	1.53	1.48	1.38	1.27	1.45	1.6	1.47	1.43

Table 4 shows the testing of the two hypotheses at 95% confidence level.

Table 4: Testing of the hypotheses

Parameter	H_1 value	H_2 value
Sample Mean ($\bar{x}$)	3.244	1.427
Hypothesized population mean (μ)	2.000	2.000
SD of sample	0.867	0.750
n (sample size)	100	100
t-value=abs(($\bar{x}$ - μ) / (s/√n))	14.20	7.60
p-value =tdist(t,(n-1),1)	0.00000	0.00000
Decision	Reject Null	Reject Null

Both the null hypotheses were rejected in favor of the alternate that the sample means are significantly different from the hypothesized population mean (μ) = 2.

Discussion of results

The sample mean for awareness was 3.24 (SD = 0.87) on a maximum scale of 4 and was significantly higher than a reasonable level assumed at the mid-point of the scale, that is, 2. Interestingly, the sample mean for the application was only 1.53(SD = 0.75) on a maximum scale of 4 and was significantly lower than a reasonable level assumed at the mid-point of the scale, that is, 2. The gap between the awareness mean of 3.24 and the application mean of 1.53 is 1.82 which is more than fifty percent of the awareness level.

Conclusion

The results of the study have confirmed our earlier speculation when it comes to the application of Balanced Score Card at the practice level- everything seems so typical Indian and unfortunately they have to tag it off by saying "Not Applicable!" But the CEOs of manufacturing companies must realize that Balanced Score Card according to the dictates of literature has a forty-four percent success rate, as seen in our literature review and, therefore they must try and incorporate into their management strategies.

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