

PERFORMANCE MEASUREMENT THROUGH BALANCE SCORECARD IN HIGHER EDUCATION: A STUDY ON HIGHER COLLEGES OF TECHNOLOGY IN UAE

Dr. Anuradha Reddy

Freelance Researcher, Visiting Faculty

ABSTRACT

In global scenario education sector has become highly competitive as there are no barriers and commercial bounds. In view of this, globally, higher education institutions are led by competitive market stimulus, commercial and economical necessities. There is large dependency on outside resources along with initiatives to attract students in the competitive market and in such scenarios strategic management and performance measurement plays a vital role. If performance measurement is not up to the mark there is difficulty in survival of educational institutions. In this context Balance Score Card (BSC) helps institutions in making strategic analysis and planning which in turn increase adaptability with environment, customer satisfaction and responsiveness. Need for such measure arises due to globalization and role of university in social and economic development of societies. Thus aim of the study is to identify the challenges and benefits of BSC implementation in higher education. This research is based on a study in Higher Colleges of Technology (HCT) from United Arab Emirates (UAE) Objectives of the study are to (i) analyze four major perspectives of BSC implementation (internal processes data analysis, customer perspective, learning and growth perspective and financial perspective), (ii) Identify advantages and challenges faced by BSC adoption and (iii) Recommend best strategies on identified challenges and issues. Questionnaire includes statements related to four perspectives of BSC and demographic information of sample population. A survey questionnaire with closed ended questions was distributed to 261 employees of HCT (Abu Dhabi, Dubai & Al Ain regions) to indicate their level of opinion (using a 5 point Likert scale). The collected data is analyzed using descriptive statistical tools mostly mean and standard deviation that helped research to identify effectiveness of implementation in chosen four perspectives and challenges faced in implementation process. Findings indicate that BSC has raised challenges on implementation such as lack of effective training, communication and support of top management. Strategies to overcome suggested, top management, to initiate appropriate training, awareness and communication system and support employees which would result in successful implementation of BSC.

Key Words: Balance Score Card, Higher education, organizational performance, Performance measurement, Strategies.

INTRODUCTION

Higher education has been huge importance in entire United Arab Emirates (UAE). To implement government policies HCT has taken number of initiatives including the provision

of opportunities for highly skilled Emiratis to ensure growth in Emiratisation policies. Aim of Academic Advancement and Accreditation (AAA) division is to ensure achievement of quality standards across HCT. Administration has planned strategies for improving quality of academic programs and services continuously and also use various tools for evaluation and improvement in institutional effectiveness. Work profile of AAA is to focus on achievement of specified outcomes and performance indicators as a key measure of institutional effectiveness and improvement. HCT implements new technologies and learning systems that give opportunity to students to study in modern, innovative and progressive learning environment. To ensure that implementation is going in right direction there are set procedures and guidelines for performance measurement (hct.ac.ae.). This paper discusses about the application of BSC and its benefits and challenges in education Sector. Critical analysis of data collected provides basic background for initiating improvement measures in the field of performance measurement (Sharma, 2009).

Students from well-known universities result in new trends for seeking potential studies, in support to that emphasis on need to use strategic management in higher education has become vital. Past two decades, many organizations, universities, institutions and practitioners are continuously implementing BSC in various methods and found them to be beneficial in performance measurement (Amaratunga and Baldry, 2000; Chen et. al., 2003; Delker, 2003). Few other researchers used BSC in education sector in measurement of higher education sector performance and also worked on relationship between performance measurement and quality based on BSC model. Developed effective strategies based BSC model for the California State University for higher education in business administration to measure organizational performance and few institutions developed strategic management tools for higher education (Cadez et al., 2015; Nazari-Shirkouhi et. al., 2020; Oliveira et.al., 2021) though the concept of BSC which has been discussed in different research studies especially how it needs to be applied to higher education programs/ institutions. BSC methodology is an analysis technique helps in translating mission and overall strategy of organization into specific, quantifiable goals and performance is measured on the basis of achieving these goals (Kaplan and Norton, 1996). BSC is a comprehensive approach that analyzes an organization's overall performance in four ways, based on the idea that assessing performance through financial returns only provides information about how well the organization did prior to assessment, so that future performance can be predicted and proper actions taken to create desired future. Major four areas include financial analysis, customer analysis, internal analysis and learning and growth analysis.

- The financial analysis is the most traditional performance indicator that includes assessment of measures such as operating costs and return-on-investment etc.
- The customer analysis judges customer satisfaction and retention.
- The third important indicator is internal; analysis that looks into innovation and production. This aspect considers profitability from existing products and future productivity.
- The fourth factor is learning and growth analysis that explores the effectiveness of management in terms of measures of employee satisfaction and retention and information system performance.

All these factors reveal that BSC methodology segregate broad goals into vision, strategies, tactical activities and metrics. Based on these parameters the BSC approach has gained popularity globally (Rouse, 2010). Organizations have measuring and monitoring systems for performance at periodical intervals. In industrialized society organizations combine knowledge and people to perform task which is done as a team. Performance of any organization depends upon skill, knowledge level, customer service and innovative culture. These are key factors wherein tools like BSC method are of maximum utility (Kelemu et. al, 2017, Brown 2012). This method was developed by Kaplan and Norton (1996) and is mainly used in converting the strategy of the organization into initiatives for achievements in targets, taking initiatives and meeting performance objectives. Use of BSC is capable of bringing effectiveness of the organization strategy. It is a defined methodology and framework which will evaluate employee performance which is different from existing manual procedures. These methods and tools can be the BSC, Activity Base Costing depending upon the performance objectives of the organizations (Williams, 2010). BSC emphasized comprehensive and holistic approach in the performance evaluation. Methodology includes both financial and non-financial performance metrics. However, the parameters under these two factors are not limited and are customized based on specific organization and industry. Selection of different parameters is based on needs of organization as to how strategy can take competitive advantage of the organization. BSC is a strategic combination of financial and non-financial factors that aligns business activities in vision and mission of organization by measuring and monitoring organization performance (Kelemu et. al, 2017, Brown 2012).

LITERATURE REVIEW

Cullen et al., (2003) in their study suggested that BSC need to be used in educational institutions for strengthening the importance of managing rather than just monitoring performance (Kelemu et al, 2017). The Rossier School of Education at University of Southern California adopted the BSC to assess its academic program and planning process. In similarity to business organizations, there are standard parameters for measuring excellence in higher education too. In education field measurement in higher education give importance to academic variables that are easily quantifiable. These measures are combination of financial and non-financial parameters. Measures include faculty/student numbers (ratios), demographics, student pass percentages etc. There is another area that deserve attention is student, faculty and staff expectations and satisfaction levels (Al Ali, 2012). BSC for educational institutions require systematic measuring performance of students, faculty and staff satisfaction. Studies conducted by Armitage and Scholey (2004) considered the BSC to a specific master's degree program in business, entrepreneurship and technology.

According to Rohm and Malinoski, (2010) BSC with value addition pertains to strategic performance scorecard system is an organization-wide integrated strategic planning, management and measurement system. Under this category of BSC as linked to strategy aligned to vision of the organization. Strategy based BSC incorporates culture of organization into management system (Cadez et al., 2015). Performance measures are only one of several important components of the measures. Previously, BSC was used only as a performance measure for financial and non-

financial parameters but since last one decade the organizations use balanced scorecards that have evolved from holistic strategic planning and management systems that help manage and track strategy execution. The logic of building a scorecard system using the organization strategic planning and management framework give importance to organization's customers and stakeholders. BSC system is framed by considering mission, vision, core values, and strategic perspectives, strategic objectives and performance measures with targets. Strategy is now the focal issue for the balanced scorecard system while giving due importance to customer needs, mission, values into organization goals with new initiative (Camilleri, 2021).

Rohm and Malinoski (2010) are of the view that performance measurement is not a new development; the only factor that has changed is methodology of measurement. BSC factors in business support units that are aligned to strategy of organization. BSC studies include how the organization keep scores and communicate progress in performance internally and externally towards achieving goals. BSC is required when the organizations execute strategies and plan for strategy based scorecard system. Measurement-based BSC include simple methodology for performance measures that are grouped into categories with factors primarily focused to an organization's managers and executives (Nazari-Shirkouhi et. al., 2020; Kiriri, 2022). It majorly includes categories of financial measures, customer, process, and organization capacity measures. Measurement-based scorecards report on operational performance measures, and offer little strategic insight into the way an organization creates value for its customers and other stakeholders (Kelemu et. al, 2017; Brown, 2012).

Cokins (2013) in his publication have indicated that BSC linked with strategy provide management with broader and balanced view of organization that gives equal significance to non-financial parameters. This improves implementation of executive team's formulated strategy. It has been suggested that in absence of use of KPI's did not serve the purpose of the BSC in best of its utility. Rouse (2010) concluded that KPIs was a metrics that used to evaluate business factors that helped to success of any organization. Leading indicators measured the activities that affect the future performance and lagging indicators measured the activities that happened in the past. The leading indicators were more powerful than lagging indicators because they gave more time to manage the outcome. Number of studies identified the leading performance indicators to be used such as productivity rate, process efficiency, process effectiveness, employee's capability of learning and growth (Atkinson and McCrindell, 1997; Niven, 2002).

OVERVIEW OF HCT

The Higher Colleges of Technology (HCT) is one of the premium institutions established in UAE with help of federal Government Brown (2012); Kelemu et. al, (2017); Nazari-Shirkouhi et. al., (2020) Raulino et. al., (2020), concluded that the performance of strategic partnering in construction projects should be measured proactively using both financial & non-financial performance indicators. The BSC approach facilitates transformation of the common strategic objectives among partners to a set of standardized and measurable performance metrics. It will help the parties in business association to continue review the performance in terms of achievement of pre-determined strategic objectives in the course of construction. BSC in project

implementation has been found to be beneficial in better communication. By using the BSC approach the partnering business develop a performance measurement system that ensures partners using a common set of metrics to gauge and interpret project performance. BSC brings in creativity and innovation as observed in project strategies and working procedures that need continuous revisions to suit the changing environment. BSC enables partners to focus on this issue by measuring project performance in terms of their creativity and innovation for performance enhancement (Lo et. al., 2006). In conclusion, BSC could be used successfully in Higher Education institutions if it is could drive vision and mission and work toward a strategy that can left up the institution to a higher level of performance and excellence (Nayeri, Mashhadi, and Mohajeri, 2008; Devie and Tarigan, 2006; Kelemu et. al, 2017).

. The organization was initially set up with four campuses in Abu Dhabi Emirates but with steep growth it has developed into a total of 16 campuses across five of the seven emirates. HCT offers more than 82 programs with spread ranging from Bachelors to master, Higher Diplomas to Advanced Diplomas. HCT has been pursuing international accreditation by improvement in academic program and approach and overall performance is measured under different aspects and use of different performance indicators within BSC. There is use of information from the central student management database system. Data is used to support decision-making tasks in the area of quality improvement and strategic planning. All the educational programs are headed by an Executive Dean and provide students with optimal learning experiences. Executive deans work closely with respective College Directors who are assigned responsibility of day to day operations. HCT is reputed educational institution and has reputation for innovative workplace with emphasis on teaching and learning methodologies. Educational programs include Applied Communication, Business, Computer & Information Science, Engineering technology, health Sciences and education at various levels. HCT has established dynamic relationship with UAE companies and organizations and with global leading universities. Organization structure of HCT comprises of central administration and seventeen campuses. Central administration is comprised of Academic Central Services (ACS) and Central Services directorates. ACS provides leadership in academics frame academic policies and guidelines. It helps in planning, coordination and evaluation of instructional programs and processes. ACS also makes processes to maintain academic standards and assessment. Academic division provides academic leadership to ensure the quality of teaching, learning, evaluation and assessment. They manage divisional academic resources to support all HCT campuses.

RESEARCH METHODOLOGY

This study intends to analyze four major perspectives of BSC implementation, examine the process of BSC adoption and identify advantages and challenges faced by BSC adoption in Higher Colleges of Technology in three regions of UAE (Abu Dhabi, Al Ain and Dubai).

Research Design

Aim of the study is to identify the challenges and benefits of BSC implementation in higher education. This research is based on a study in Higher Colleges of Technology (HCT) from United Arab Emirates (UAE) Objectives of the study are to (i) analyze four major perspectives

of BSC implementation (internal processes data analysis, customer perspective, learning and growth perspective and financial perspective), (ii) Identify advantages and challenges faced by BSC adoption and (iii) Recommend best strategies on identified challenges and issues. Questionnaire includes statements related to four perspectives of BSC and demographic information of sample population. A survey questionnaire with closed ended questions was distributed to employees of HCT (Abu Dhabi, Dubai & Al Ain regions) to indicate their level of opinion (using a 5 point Likert scale). The collected data is analyzed using descriptive statistical tools (SPSS) mostly mean and standard deviation.

Sampling Technique and Sample Size

Sample included front office, administrative staff, academic staff and head of the departments. A total of 450 questionnaires were distributed to employees of HCT in Abu Dhabi, Dubai and Al Ain region (Men and women campus in each region) of which 261 were duly filled in and were considered for the study.

Data Analysis

Data responses of 261 employees was analyzed and tested for adequacy and eligibility by KMO (Kaiser-Meyer-Olkin) and Bartlett's test. The Barlett’s test value 0.924 indicates adequacy and reliability of the data suitable for employing analysis because any value greater than 0.9 is considered as reliable (Kaiser, 1974). The KMO results are significant as the ‘p’ values are less than 0.05. Descriptive statistical tools mostly mean were for data analysis. Analysis and interpretation of data was supported by mean value which is presented in table format.

Table 1: Results of KMO and Bartlett’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.924
Bartlett's Test of Sphericity	Approx. Chi-Square	22205.625
	Df	1378
	Sig.	.000

RESULTS AND DISCUSSION

This part of the study discusses the data collected and analyzed and are presented using descriptive statistics.

Demographic Analysis

Demographic analysis of respondent’s indicates that majority of respondents are UAE nationals indicating 86.9% and majority are under the age group of 36-45 years indicating 62.4% with a maximum work experience of 6-10 years indicating 42.9% and another group indicating 41.8% with 3-5 years of work experience. This indicates that majority of respondents are having good

amount of work experience in current organization and are having knowledge on policies and processes of organization.

Following table 2 represents each component of BSC model and its affect in the organization. Following analysis is based on basic four parameters of BSC.

Table 2: Mean and standard deviation values of BSC parameters

No.	BSC parameters	Mean Value	Std Dev.
Customer Perspective			
1	Expectations and demands of customers improved	1.85	1.21
2	Quality and type of products/services improved	1.93	0.59
3	Customer satisfaction and feedback increased	1.87	1.22
Internal Processes data analysis			
4	Improvement in technology up gradation	1.32	0.89
5	Improved Quality control & delivery processes	1.65	1.15
6	Helped to Achieve mission and vision	1.98	0.76
Employee Learning and Growth Perspective			
7	Technological infrastructure	1.21	0.52
8	Company Provides training	1.90	1.21
9	Have Job satisfaction	1.65	1.12
Financial Perspective			
10	Improvement in Cost containment	1.98	1.13
11	BSC lead in managing sufficient funds	1.97	1.07

From the above table 2 results indicated that BSC model exists in HCT and it had great influence over employees and students. Customer’s expectations are hereby referred to expectations of students and employees. From the customer perspective expectations and demands of customers improved as it is indicated a mean value (1.85) where respondents strongly agree to the statement. There is a strong agreement towards improved quality control & delivery processes in HCT with a mean value (1.93). Mean value (1.87) indicate that Customer satisfaction and feedback increased in HCT. Considering the internal processes data analysis perspective there is a strong agreement that BSC implementation has helped HCT in improving technology up gradation indicating a mean value (1.32), improved quality control & delivery processes indicating a mean value (1.65) and helped to achieve mission and vision indicating a mean value (1.98). Considering the employee learning and growth perspective there is a strong agreement that BSC implementation has helped HCT in bringing changes in technological infrastructure indicating a mean value (1.21) and company is providing training to its employees indicating a mean value (1.90) and employees have job satisfaction indicating a mean value (1.65). Considering the financial perspective there is a strong agreement that BSC implementation has helped HCT in improving in cost containment indicating a mean value (1.98) and lead in managing sufficient funds indicating a mean value (1.97). Therefore it is evident that HCT has established dynamic

relationship with top national and international organizations. Apart from giving on job training to its employees it is also noted that HCT has established relationship with UAE companies and organizations for job recruitments for outgoing students. Internal Processes Perspective pertains to how work is achieved within the organization. It concentrates on the procedures need to achieve customer satisfaction. There are reports that the HCT has got the academic advancement and accreditation (AAA) in achievement of quality standards. AAA work focuses on the achievement of specified outcomes and performance indicators as a key measure of institutional effectiveness and improvement (Al Ali, 2012).

BSC ADOPTION IN HCT

This section reviews different dimensions of the role of BSC implementation activities. It has two main segments (1) the effects of BSC adoption (2) problems faced by BSC adoption. Following table 3 and 4 indicate the effects of BSC adoption in HCT and problems faced during its implementation process.

Table 3: Mean and standard deviation values of effects of BSC adoption

No.	The effects of BSC adoption	Mean Value	Std Dev.
1	BSC makes it easier to communicate organization's strategy	1.85	1.03
2	Activities of different parts of organization are better aligned to the strategy	1.89	0.64
3	Managers are now clearer of the results they are accountable for	2.04	0.98
4	It is now easier to manage performance in organization	1.67	1.05
5	BSC enabled managers to see more clearly the link between short-term and long-term goals	2.95	1.02
6	Organization is now able to overcome the weaknesses in strategy implementation it experienced in the past	3.21	0.78
7	BSC program has significantly improved organization's competitiveness	1.95	1.12
8	There was noticeable improvement in financial performance after introducing the BSC	1.92	1.07
9	The use of BSC had reduced conflicts in HCT	2.31	0.97

From table 4 mean values indicate that there is a disagreement towards managers being clear of the results they are accountable for (2.04), mean values indicate (2.95) disagreement as respondents stated that BSC could not completely enable managers on link between short-term and long-term goals, further mean values (3.21) indicates that there is a strong disagreement that organization is now able to overcome the weaknesses in strategy implementation it experienced in the past, and there is a strong need to overcome issues related to strategy implementation.

Finally there is a disagreement on the use of BSC that lead to reduced conflicts in HCT as the mean values indicate (2.31). There is a strong agreement towards communication (mean = 1.85), aligning activities to strategy (mean = 1.89), managing performance (mean = 1.67), improving organizational competitiveness (mean = 1.95) and improvement in financial performance (mean = 1.92) after implementation of BSC.

Table 4: Mean and standard deviation values of BSC challenges

No.	BSC Challenges	Mean Value	Std Dev.
1	Developing internal expertise on BSC was easy	1.75	1.02
2	Communication between departments became easy	3.51	0.94
3	Information system of HCT could track the performance of non-financial measures	1.67	1.21
4	Cascading the scorecard to lower levels has become easy	2.85	0.74
5	All the employees had clarity and update on BSC the strategy	2.95	1.02
6	Strategy included long term targets and annual budgets	3.21	0.72
7	The performance targets set for managers were well accepted	2.94	0.91
8	Managing BSC system was easy once the consultants engaged finished their job	1.83	1.12
9	The consultant engaged by HCT greatly helped the BSC initiative	1.69	1.20
10	Feedback and control of the BSC implementation was easy	1.98	1.09

Considering BSC challenges from table 4 it is evident that there was a strong agreement towards developing internal expertise on BSC (mean = 1.75), information system of HCT was able to track performance of non-financial measures (mean = 1.67), managing BSC system was easy once the consultants engaged finished their job (mean = 1.83), further consultant engaged by HCT greatly helped the BSC initiative (mean = 1.69) and finally there was an improved feedback and control of the BSC implementation (mean = 1.98). From the analysis and mean values it is also evident that HCT has been facing few challenges as there is a strong disagreement from respondents towards communication between departments (mean = 3.51) which was tough, BSC strategy did not include long term targets and annual budgets (mean = 3.21), cascading the scorecard to lower levels was tedious task (mean = 2.85), not all managers were ready to accept given performance targets (mean = 2.94) and finally most employees did not have clarity and update on BSC the strategy (mean = 2.95). There are number of challenges faced by organizations who implement the BSC methodology for performance measurement. The scoring of different questions there was an increased development in non-financial matters but there was a lack of strategy that did not include long term targets and annual budgets. There are issues that may

impact getting performance measures as most managers were not able to reach given targets.

CONCLUSION AND RECOMMENDATIONS

The Balanced Scorecard (BSC) is an extensively adopted performance management framework. The Balanced Scorecard has proved to be a measurement system and it has been proposed as the basic for a Strategic Management System. It can be concluded that the Balanced Scorecard is combination of set of measures derived from an organization's strategy. HCT has initiated steps to implement BSC method for performance measurement of different activities. Importance of combinations of financial and non-financial parameters is seen in analysis. The study has confirmed that HCT has played magnificent role in the sustainable development of the organization. The study concludes that there is expansion of BSC in higher educational intuitions.

Further implementing BSC in education needs effective organizational procedures as it has to focus on think and rethink of effective employment of the concept. According to Chesley (2009) it is recommended that every educational institution should follow five major steps to mage BSC implementation successful.

- ✓ Step 1: Develop an organizational strategy in a perspective way so that organizations vision changes into action
- ✓ Step 2: Link up the strategy and framework to all departments through effective communication methods and finally apply them in reaching long term goals of the organization
- ✓ Step 3: Make a startup of the strategy with effective academic planning giving priority to resources that could facilitate in further operations.
- ✓ Step 4: Develop and effective communication, feedback, flexibility, performance measurement and accountability within the organization and all functional departments.
- ✓ Step 5: Develop benchmarks for internal and external performance indicators.

It is recommended that BSC needs to be implemented from top to bottom in all educational institutions. There is need for obtaining feedback from the customers for future suggestions to improve the BSC methodology. The performance of HCT needs to measure in different perspectives including performance of HCT under Professional and Continuing Education (PACE). Different programs are offered under PACE that includes Diploma, Advanced Diploma, and Bachelor level degree credentials aimed at developing the workforce in a constantly changing environment but the performance under independent heads can enable the HCT administration to improve further. Based on the level of implementation of BSC and challenges in the HCT it is recommended as follows:

- 1) All the employees need to clarify and update the strategy to be followed by BSC
- 2) Communicating the strategy throughout the company is immediately required.
- 3) Align unit and individual goals with overall strategy of the HCT.
- 4) There is need for development of strategy that includes long term targets and annual budgets.

- 5) There is need for identification of strategic initiatives and align these initiatives towards strategic goals.
- 6) There is need for conducting performance reviews to learn about the improved strategy through continuous training and awareness programs.

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