INNOVATIONS

Investigating the Factors affecting Implementation of BSC: a study on Finance Offices in South Nations Nationalities and People's Region of Ethiopia

Venkatesh Andavar

Didha Bacha

Srinivasan Senthilvel

Seada Tilahun

Associate professor in Salale University, Ethiopia, **giftvenkey@gmail.com**

Assistant Professor in Salale University, Ethiopia **dibaat@gmail.com**

Associate professor in Wolkite University, Ethiopia **srini.cud@gmail.com**

Lecturer in Salale University, Ethiopia**, seadatilahun2018@gmail.com**

Abstract: The successful implementation of balanced scorecard requires a great deal of effort and resources. However, besides government's effort and temporal publicity, business entities are not successfully implementing the change and able to benefit from its advantages. The aim of this study is to explore challenges of effective implementation of BSC in South Nations, Nationalities and People's Region of Ethiopia south region finance office. After reviewing prior literature, we have identified six factors as determinants of the successful implementation of BSC i.e. proper communication, top management support and commitment, training, teamwork organizational culture and education. A survey was conducted using the preset questionnaire form 105 financial offices located in the SNNP region of Ethiopia. After checking for the reliability and validity of the data, Multiple Regression Method was used to test the developed hypotheses. The findings of the study indicated that top management commitment and support, training, education and organization culture have positive and statistically significant relationship with successful implementation of BSC. On the other hand, team work and communication were found to be insignificant determinants of the successful implementation of BSC in Ethiopia. Based on the findings of the study, recommendations are made for both practitioners and future researchers.

Key Words:1. Productivity 2. Balanced Scorecard 3. Finance Office 4. South Nations and Nationalities 5. Ethiopia

Introduction

Balance scorecard was first introduced by Kaplan and Norton (1992) posted in the Harvard Business Review Article in 1992. By that time, it was new approach to strategic management. Kaplan & Norton recognize some of the weakness and ambiguity of previous performance management approaches. They have demonstrated that balanced scorecard enables organizations to translate their visions and strategies into comprehensive objectives and substantial set of performance measures. Thus BSC

provides enterprises a view of organization's overall performance by integrating financial measures with other key performance indicators around customer perspectives, internal business processes, and organizational growth, learning, and innovation (Kaplan and Norton, 1996).

Today improvements in the quality of product and services delivered are getting primary importance due to the business environment, which seeks new management tools. BSC has become a global project that spread by various international and domestic business organizations and their employees aimed to improve quality and productivity so as to achieve organizational mission and objectives (Maarof & Mahmud, 2016; Garcia & Rivera, 2016; Glover et al., 2011). The advantages of implementing BSC are enormous and reported along economical, social and technical dimensions of firms and include cost reduction, productivity improvement, decrease in defects and improvement in workers' ethics and incentives for better results (Buunet &New, 2003; Bessant, 2003).

Countries have applied BSC Management for various sectors and encountered multi-dimensional success and challenge stories (Karn, 2009). The Introduction of BSC in Ethiopia doesn't have a long history as compared to other change tools like business process reengineering (BPR). In Ethiopia, there is no BSC institute but Kaizen Institute was established under Ministry of Industry after a bilateral agreement between government of Ethiopia and Japan was signed (Tigist, 2015; EKI,2013). The government of Ethiopia has identified 15sector offices for pilot project so as to better understanding about BSC philosophy while experts from Japanese guide the organizations in implementing the new management system. For the first time, Ethiopia BSC Institute prepared training for 380 sugar corporation managers and supervisors, during this time the Federal Technique, Vocational, Education and Training Development (TVETD) and enterprise agency presented its experience for the trainees (Assefa, 2014).

The Ministry of finance and its regional offices became one of the first implementer of BSC. The south Nation, nationalities and people region finance Bureau is also one of the facilitators of BSC implementation in various Finance Offices.

In spite of increasing recognition of BSC management philosophy, researches show that the implementation of BSC is not effectively accomplished by organizations (Fukuda, 1988).The study done by Imai (2000) shows those over 90% of companies that start to implement BSC give up in the middle of the implementation phase.

Desta et al. (2014) identified important challenges of BSC implementation in the manufacturing industry of Ethiopia. He found that most manufacturing industry did not empower employees; power is mostly concentrated in the hands of top management, and employees lack motivation

The purpose of this study is to investigate the major factors that are affecting the successful implementation of BSC in Ethiopia. The significance of this study is; (1) the findings will provide some insight on what is hindering Ethiopian organizations in order to fully implement BSC principles. (2) It will also provide an input to policy makers particularly, the Ethiopian BSC Institute on what to do next to make BSC a success story in Ethiopia. (3) Lastly, the study will attempt to fill the identified research gap especially in Ethiopia.

Review of related literature

A balanced score card is a tool that translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system (Kaplan and Norton, 1992).
A Balanced scorecard is a format for describing the activities of an organization through a number of measures for each of (usually) four perspectives (Nils-Goran and et.al, 2003). According to Niven (2008) ''Balanced Scorecard is a carefully selected set of quantifiable measures derived from an organization's strategy. The measures selected for the scorecard represent a tool for leaders to use in communicating to employees and external stakeholders the outcomes and performance drivers by

which the organization will achieve its mission and strategic objectives in the eyes of financial, customer, internal process and internal growth and development perspective''.
The Balanced Scorecard was developed by Robert Kaplan, an accounting professor at Harvard University, and David Norton, a consultant also from the Boston area. In 1990 Kaplan and Norton led a research study of a dozen companies exploring new methods of performance measurement. The impetus for the study was a growing belief that financial measures of performance were ineffective for the modern business enterprise. The study companies, along with Kaplan and Norton, were convinced that a reliance on financial measures of performance was affecting their ability to create value. The group discussed a number of possible alternatives but settled on the idea of a Scorecard featuring performance measures capturing activities from throughout the organization customer issues, internal business processes, employee activities, and, of course, shareholder concerns. Kaplan and Norton labeled the new tool the Balanced Scorecard and later summarized the concept in the first of several articles, ''The Balanced Scorecard Measures that Drive Performance'' (Niven, 2002)

Since then a number of organizations adopted the Balanced Scorecard technique and found to have achieved immediate results. Kaplan and Norton discovered these organizations were not only using the Scorecard to complement financial measures with the drivers of future performance, but were also communicating their strategies through the measures they selected for their Balanced Scorecard. Balanced Scorecard gained prominence with organizations around the globe as a key tool in strategy implementation also Kaplan and Norton summarized this concept in their 1996 book, *The Balanced Scorecard* (Niven 2002).

Variables and Hypothesis Development

3.1 Top Management Support

Management support and commitment is the process of planning, organizing, leading and controlling the available resources in a way to achieve stipulated objectives efficiently and effectively (Humphrey, 1995). Top management should be committed to empower the workers by providing adequate authority for the employees to make both individual and collective decision. Top management support and commitment is an importance pillar for effective and sustaining the best culture of BSC but most of top managements do not give proper attention for the implementation of BSC and its sustainability (Amanuel, 2014).

***H_1:* Top management support has significant effects on the effective implementation of BSC.**

3.2 Teamwork

Teams are established when a combination of skills, knowledge and expertise are necessary to carry out a specific activities that helps to accomplish the company's goal. On the face of challenges such as falling services, improvements in quality principles, putting together a new project, tackle major change initiatives and cross process can harmonize in huge and complex companies.

One of the most significance part of team work in organizations is to meet regularly for review progress, deal with problems, decide on next steps, and make other decisions relevant to the team's work. One of the most crucial principles of BSC approach is the ability to work in teams. For effective BSC implementation teamwork is highly important because it increase information sharing among team members, to create better decisions and improve employee's motivation and productivity.

***H_2:* Team work has significant impact on the effective implementation of BSC**

3.3 Proper Communication

Communication delivers the organization's value, expectations, and guidelines; provide information company developments. It also provides information about the performance of the organization and allow feedback from all levels (Buunnet & New, 2003).Communication is one of the most crucial supportive dimension to be considered when implementing BSC in a company. From the

principles of BSC management philosophy, it is understandable that communication is one of the key success factors in the process of effective implementation of the philosophy (Oakland 2007).

***H_3*: Proper communication has significant effects on the effective implementation of BSC.**

3.4 Education level

Education is a tool to improve the productivity of citizens in all aspects of the economy. According to Kamau (2012) 62% employees agreed education level of employees strongly affects the effective implementation of BSC whereas 67% managers were not sure if education level affects the effective implementation of BSC. Workers admired education level as important for effective implementation of BSC than managers who doubted if education level has any affects on BSC implementation. This is because most general worker had reached primary school and had problems understanding even BSC poster written in English so they saw their low level of education as a challenge in implementing BSC. Therefore, the view of managers and workers about the affects of education in BSC implementation is different (Kamau, 2012).

***H_4*: Educational level has significant effects on BSC implementation.**

3.5 Organizational culture

Organizational culture is regarded as the specific collection of values and norms that are shared by people and groups in an organization and that control the way they interact with each other and with stakeholders outside the organization. BSC involves changes in organizational culture and structure which allows open-communication, teamwork, and trust development (Imai, 2000; Ohno, 2009). Such concept as BSC which is context-dependent, level of effective transfer is highly dependent on the organizational culture that BSC involves. Desta et al. (2014) found that organizational culture and motivation were critical factors that affects BSC implementation within the organization context.

***H_5*: Organizational culture has significant relationship with effective implementation of BSC.**

3.6 Training as a mediator

Training is learning process which involves the acquisition of knowledge, sharpening of important skills, procedures, rules, changing of behaviors and attitudes so as to improve the effectiveness of every employee. It is a continuous activity in which employees get the knowledge. According to Mangal (2009) training helps to acquire and develop necessary skills, attitude, and knowledge through learning experience so as to attain the firms' established mission and objectives. BSC related training also helps management to develop their managing knowledge and skills (Amanuel, 2014).Lack of adequate training and information about BSC leads to lack of understanding about BSC management tools and techniques which results fail to implement the new management philosophy (Michael, 2014).

***H_6*: Training mediates the relationship of indentified independent variables and effective implementation of BSC.**

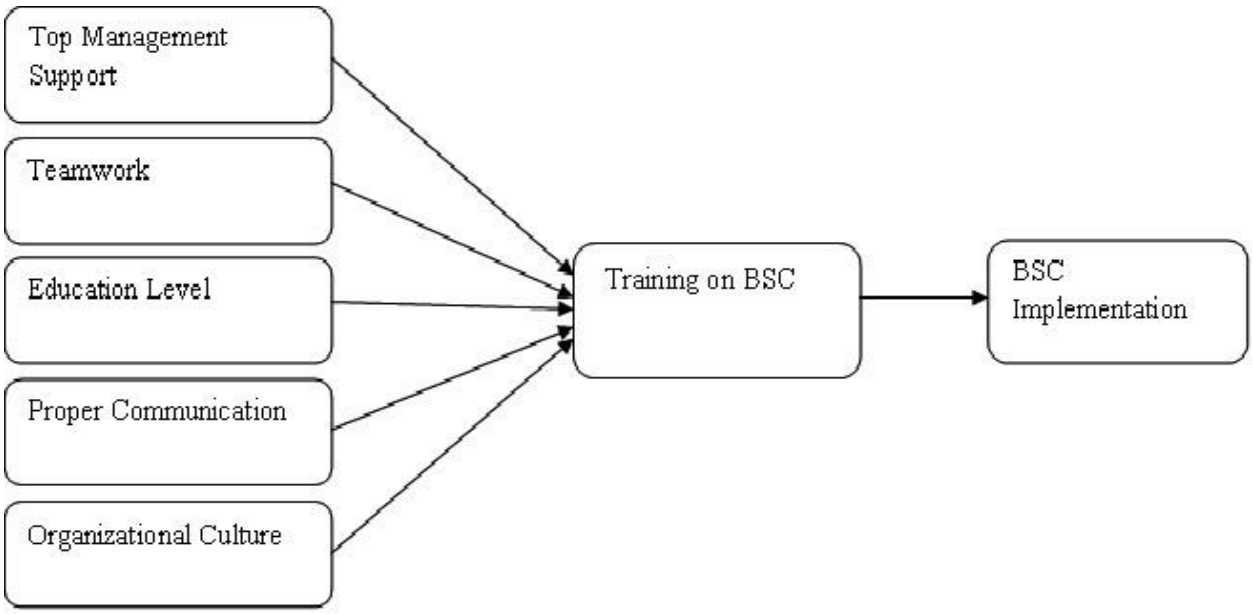

Figure 1: Proposed framework

Research Methods

*4.*1 Survey Administration and Data Collection

Data for this study was obtained from a questionnaire based survey. Questionnaire items were adopted from prior researches after conducting a comprehensive literature review in the field of BSC and other organizational change tools. The necessary data to test the hypotheses was collected from a sample of 105employees randomly drawn from a total of 214 employees of Finance Offices located in South Region, Ethiopia. We primarily targeted individuals with an educational level of college diploma and above from those organizations. The research specifically targeted these group of individuals based on the notion that they have a better knowledge on the concepts of BSC. Table 1 shows the summary of demographic data of respondents.

Table 1: Summary of Demographic information of respondents (*n = 214*)

* **Variable**	**Frequency**	**Percentage**
Sex		
Male	65	61.9%
Female	40	38.01%
Experience (Years)		
≤ 1 year	10	9.5%
1 - 5 years	45	42.86%
≥ 5 years	50	47.62%
Department		
Accountants	40	38.01%
Finance	46	43.8%
Planning & Control	19	18.1%

Validity and reliability of items

In the first step, measurement model was tested and reliability, convergent validity, and discriminant validity are checked. In assessing the reliability of the constructs, we used both Cronach's alpha and composite reliability approach (Fornell & Larcker, 1981). All the values were well above the threshold (> 0.7) with values ranging from 0.8761 to 0.9667 as shown in Table 2. Multicollinearity was assessed using the variance inflation factor (VIF) method. All the values were found to be below the 5.0 standard (Hair *et al.,* 1998).

Table 2: Summary of measurement scale (*n = 214*)								
Factor	Item	Mean	S.D	Loading[a]	Alpha[b]	CR[c]	AVE[d]	VIF[e]
Top Management Support	MS1	2.75	1.05	0.8537	0.9165	0.9075	0.7298	1.24
	MS2	2.74	1.01	0.9101				
	MS3	2.73	1.07	0.8627				
	MS4	2.77	1.02	0.9357				
	MS5	2.83	1.07	0.8668				
	MS6	2.73	1.04	0.9003				
Team work	TW1	2.66	1.07	0.7519	0.7496	0.7891	0.816	2.12
	TW2	2.63	1.03	0.7860				
	TW3	2.66	1.07	0.8029				
	TW4	2.70	1.08	0.8074				
	TW5	2.64	1.07	0.7749				
EducationLevel	EL1	3.55	1.15	0.8890	0.8955	0.9254	0.7602	1.72
	EL2	3.54	1.17	0.9634				
	EL3	3.53	1.20	0.6483				
	EL4	3.51	1.16	0.9498				
Proper Communication	PC1	3.09	1.13	0.8660	0.9666	0.9742	0.8831	1.24
	PC2	3.08	1.18	0.9597				
	PC3	3.09	1.16	0.9677				
	PC4	3.12	1.12	0.9525				
	PC5	3.11	1.16	0.9491				
Organizational Culture	OC1	3.06	1.13	0.7887	0.8761	0.9098	0.6697	1.85
	OC2	2.72	1.10	0.8921				
	OC3	2.65	1.10	0.8052				
	OC4	3.05	1.15	0.7272				
	OC5	2.69	1.09	0.8679				
BSC Training	KT1	2.68	1.21	0.7296	0.8783	0.912	0.6759	1.63
	KT2	2.50	1.12	0.8539				
	KT3	2.41	1.06	0.8854				
	KT4	2.51	1.12	0.8707				
	KT5	2.40	1.14	0.7589				
BSC Implementation	KI1	2.59	1.06	0.9787	0.9370	0.9578	0.852	2.01

	KI2	2.81	1.12	0.7314				
	KI3	2.58	1.07	0.9784				
	KI4	2.59	1.06	0.9787				

***[a] All items loadings are significant at p < 0.001**

***[b] Cronbach's alpha value**

***[c] CR = Composite score**

***[d] AVE = Average variance extracted**

***[e] VIF = Variance Inflation Factor**

The researchers used partial list square (PLS) based SEM to test the structural model. We favored PLS-SEM over covariance based SEM (CB-SEM), due to the advantages that the former can bring, such as, (1) it does not require the data to follow normality; (2) can be applied when the researcher has fewer indicators; (3) large number of indicators can be included in the model; (4) it assumes all measured variance (including error) is useful for explanation and prediction of the relationship (Hair, 2011; Afthanorhan, 2013). Since all factors included in this study are second order variables, we used a "reflective – formative" based CFA known as "hierarchical component model" (HCM) in PLS-SEM. HCM helps researchers to reduce number of indicators in SEM besides making the entire model more parsimonious. It is proved to be very essential when constructs are highly correlated which makes the estimation more biased to multi-collineariety (Afthanorhan, 2013).

4.2 Analysis of the inner model

According to Cohen (1998), R^2 value, > 0.26 is considered substantial, > 0.13 as moderate and < 0.02 as week indication of explained variation of an endogenous variable by a given exogenous indicator. All values were well above the "moderate" threshold. Predictive relevance of a reflective endogenous variable can be tested using Q^2 and according to Chin (1998), Q^2 value greater than zero indicates that the respective endogenous variable has a significant predictive relevance. As shown in table 4, all Q^2 values were well above zero hence predictive relevance has been achieved.

The effect size f^2 is used to assess the impact of a specific predictor (exogenous) variable on an endogenous variable. The value of f^2 tells what happens to the R^2 value of an endogenous variable when a specific predictor variable is omitted from the model

Table 3: Summary of effect size

Factor	R^2	Q^2	f^2
Top Management Support			0.3756
Team work			0.2498
Education Level			0.4560
Proper Communication			0.1031
Organizational Culture			
BSC Training	0.397	0 .2169	
BSC Implementation	0.254	0.0646	

Cohen (1998) suggests that f^2 value > 0.35 represents strong effect size while > 0.15 shows moderate effect size and > 0.02 indicates a week effect size. In our case, all exogenous variables' effect size value ranges between moderate to strong effect size (Table 3).

The hypotheses were tested by assessing the direction, strength, and level of significance of the path coefficients estimated by PLS, using a bootstrap resample method with 5000 resample following Chin's (1998) suggestion. Table 4 provides the summary of findings and indirect effects. Hypotheses 1, 2, 3 and 6 were supported at 5% significance level. Hypothesis 5 can still be supported at 10% alpha level. Hypothesis 5 was not supported.

Table 4: Path coefficients and significance level (*n= 214*)

Hypothesis	Independent -> dependent variables	Path coefficients	t- statistics	Result
H1(+)	Top Management Support ->BSC Training	0.2426	2.5223***	Supported
H2(+)	Team Work ->BSC Training	0.2080	2.1372***	Supported
H3(+)	Education Level ->BSC Training	0.1661	2.1624**	Supported
H4(+)	Proper Communication ->BSC Training	0.0162	0.1827	Not Supported
H5(+)	Organizational Culture ->BSC Training	0.1845	1.94807*	*Supported*
H6(+)	BSC Training ->BSC Implementation	0.3924	4.435***	Supported

***hypothesis supported at 0.1 alpha level**
****hypothesis supported at 0.05 alpha level**
*****hypothesis supported at 0.001 alpha level**

Sobel's test is used to test the indirect (mediation) effects. Table 5 provides the summary of findings and indirect effects. All the hypotheses were supported at 5% alpha value except hypothesis one which still can be supported at 0.1 alpha levels.

Table 5: Sobel's test of mediation significance

Latent variable	Linkage	Dependent Variable BSC Implementation
Top Management Support	BSC Training	2.0448(0.042)
Teamwork		1.99083(0.050)
Education Level		2.1324 (0.033)
Proper Communication		3.1321(0.005)
Organizational Culture		4.1321(0.005)

Conclusion and Recommendations

Around the late 2010s, BSC was one of the priorities of the Ethiopian government in order to bring quality and competitiveness in both public and private organizations. Despite the temporal hype, however, the implementation of BSC has been sluggish and not to the fullest of the management philosophy. The purpose of this study was to identify determinant factors of successful BSC implementation in Ethiopia. After intensive review of prior studies, we have identified that a persisted

top management commitment and support, effective team work, education level of employees, proper communication within the organization and organizational culture are the most important factors that help facilitate the adaptation process of any organizational change tools including BSC. There is also strong literature evidence that proper training on the philosophy itself will mediate the relationship between the above independent variables and BSC implementation.

We have collected a primary survey data from 214 employees of 105 Finance Office located in South Region, Ethiopia using an Amharic version of structured questionnaire. Once we have checked for validity, reliability, and multi-collinearity of items, data and variables, we have tested our hypothesis using PLS – SEM.

Top management support, teamwork, and education level were found to be the most important determinants of effective BSC implementation in Ethiopia. Organizational culture was also a modest determinant of successful BSC implementation. We have also found that proper intervention through training on BSC management philosophy significantly mediates the relationship between the identified independent variable and effective BSC implementation. Despite strong prior empirical evidence, proper communication was not found to be a significant determinant of effective BSC implementation in Ethiopia in general and in South Region in particular. The most plausible reason can be the fact that BSC is a continuous process improvement technique; hence communication should be bottom – up. In Ethiopia, however, communication seems top – down where the top management introduces changes and generates process improvement ideas then communicates to lower level employees.

Based on the finding of the study, researchers have forwarded the following recommendations. To successfully implement BSC, organizations should create conducive environment for team work. Since the implementation process involves every one, employees must be multi-skilled (well educated) to be able to understand and work with BSC philosophy as it requires a versatile work force. It is also important to have empowering and encouraging organizational culture. For any gap, in employees' competency, awareness on BSC and attitude, proper training on BSC principles is also very important. Future researchers may look into other variables that may potentially affect the successful implementation of BSC in different cases.

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