EFFECTS OF LEADING INDICATORS OF BALANCED SCORE CARD ON LAGGING INDICATOR: THE CASE OF PUBLIC HIGHER EDUCATIONAL INSTITUTIONS OF ETHIOPIA

DAGNU LULU BEKELE, Dr. G.S BATRA

1Assistant Professor, Madawalabu University, Bale Robe, Oromia, Ethiopia and PhD Candidate at Punjabi University, India 2Professor and Dean, School of Management Studies, Punjabi University, Patiala, India

Abstract: This study deals with effect of leading indicators of BSC on its lagging indicator in public HEIs of Ethiopia. The main objective of the study was to examine influence on customer perspective from other three BSC perspectives. The study used customer perspective as dependent variable and financial, internal business process and capacity building as independent variables. The study employed explanatory research designs. The study employed stratified random sampling techniques which is one of common probability sampling. Total populations of the study were 8,271. Using Yamane formula sample size was determined to be 382 which increased by 15% and rise to 439 respondents. Both primary and secondary sources of data were used. As data collection tool, self administered structured questioner was employed. The study employed quantitative data analysis method. Stepwise multiple regressions were used for analysis. The findings of the study indicate that financial and internal business process perspectives have positive and significant influence on Customer perspective. However, capacity building has positive and but insignificant effect on customer perspective. From these it is possible to come up with conclusion that performance in leading indicators i.e. financial, internal business process and capacity building perspectives leads to performance in customer perspective which is lagging indicator in this study.

Keywords: Balanced score card, Capacity building perspective, Customer perspective, financial perspective, internal business process perspective, lagging indicators, leading indicators.

I. INTRODUCTION

1. INTRODUCTION

This study deals with examining effects on lagging indicator of BSC (customer perspective) from leading indicators of BSC (i.e. financial, internal business process and learning and Growth) in Public HEIs of Ethiopia. According to Dag and Tonny (2015) balanced scorecard is one of important modern performance measurement that have been using by different organizations throughout the world. It helps to measure both financial and non financial performance of the business. Currently, it is one of the most influential concepts in accounting and management. Since its introduction in 1990s, the balanced scorecard has been the subject of much debate among different academics and practitioners elsewhere in the world. Although BSC was initially born for business types organizations later Kaplan and Norton recommend it for not for profit and public organizations. Many authors suggest as BSC can be used by any size and any types of organizations. This study specifically covers issues of BSC that related to relationship among BSC perspectives and effects of leading indicators on lagging indicators of BSC.

Balanced scorecard constituted of four perspectives which helps to operationalize strategic objectives of the organization by considering both internal factors and external factors as Kaplan and Norton (1992) described. These perspectives include: financial perspective; customer perspective, internal business perspective and learning and growth perspectives. Financial and customer perspectives are external factors as they are expected to fulfill the needs of external parties like shareholders, Donors, Government, customers. There is cause-effect relationship among BSC perspectives. Strategy was defined by Kaplan and Norton’s (1996b) as a set of hypotheses about cause and effect’–calls for the existence of a cause and effect relationships among BSC perspectives.
Kaplan and Norton 1996b, 2001 noted that BSC perspectives have to cover all outcome measures and performance drivers that must be linked together in cause-and-effect relationships among themselves. Based on the theory of Kaplan and Norton, Cause and effect relationship among BSC perspectives, a number of studies (e.g. Al Bento and Regina Bento 2012, Khawla H. Kalaf et.al. 2012, Yael Perlman 2013, Joy Rabo 2014, Shubitinyo 2014, Rillyan N R et.al. 2016 etc.) were done and support the Arguments by Kaplan and Norton. On the other side other studies (like: Nørreklit 2000, 2004; Brignall 2002, Tan, Platts, & Noble 2004 etc) had doubt and argue against cause and effect relationships of BSC perspectives. For example, Norreklit (2000) questioned the reliability (i.e. applicability in different situation) of BSC by arguing (1) that there should be a time dimension in the BSC in order to be able to talk about causality, (2) that cause-and-effect relationship between some of the suggested areas of measurement in the BSC may not exist and (3) that the four dimensions are not independent.

Kaplan and Norton (2004) theorized the causal relationships between the four perspectives of balanced score card. Specifically, they explain the relationships between financial measures which are lagging measures and performance-driving or leading measures (such as internal process and growth and learning). However, the other researchers (e.g. Norreklit 2000, Tan, Platts, & Noble 2004) argued against the unidirectional causality of BSC perspectives and claim that the relationships among the four perspectives of BSC are actually relationships of interdependence and bi-directional causality.

Patel, Wang, Lu, and Chen (2010) recommend that measures of different BSC perspectives may contradict and refute one another, and as a result it is important to see in to hierarchical relationships and vertical relationships among measures. One of most fundamental criticisms of the BSC is directed at the assumed causal relationships between lead and lag indicators, and between the indicators in the four perspectives. It is not an easy task to summarize this criticism as it is complicated and abstract, but it revolves around three aspects of the BSC theory: (1) lack of a time dimension in the BSC, (2) lack of clarity about the relationships between the different perspectives in the BSC, and (3) little knowledge about causal relationships between different measures and performance (Dag and Tonny 2015).

In Ethiopia there were different studies (like: Dawit, 2015; Dereje, 2015; Hiwot, 2015; Mamushet, 2015; Adamitu, 2016; Hailemariam, 2016) that were carried out in relation with Balanced score card. However, none of them examine relationship among BSC perspectives and effects of leading indicators on lagging indicator (customer perspective in this case). Besides, most of the studies were done in other kind of Industry such as Banking industry, Government offices except a study done by Adamitu (2016) on BSC implementation success stories and challenges in Jimma University and Tilaye (2010) concerned with developments of conceptual framework of BSC for higher education in Ethiopia.

From previous discussions in relation with cause and effect relation between BSC perspectives there is no general agreement as finding by different studies varied from one another. Besides, there were only few available literatures that examine the effect of leading indicators on lagging indicator, and those studies took lagging indicator to be financial perspective which is common only for profit oriented organization. Whereas, lagging indicator for not for profit including public organization is customer perspective as noted by Kaplan and Norton as the ultimate goal of such organization move around customer services. Therefore, this study was designed to contribute to this theory by supporting causal and effect relation of BSC perspectives. Thus, the study was aimed to check whether there are relationships among BSC perspectives in Ethiopian PHEIs and thereby examine effect of leading indicators (financial, internal business process and learning and growth perspectives) on lagging indicator (which is customer perspective in this context).

**OBJECTIVES OF THE STUDY**
The general objectives of this study was to examine effect of leading indicators of Balanced score card on its lagging indicator that controlled for staff types in Public Higher Educational institutions of Ethiopia.

**SPECIFIC OBJECTIVES**
The study was specifically aims at achieving the following objectives:

- To examine effect of financial perspective on customer perspective in Ethiopian PHEIs.
- To examine effect of internal business process perspective on customer perspective in Ethiopian PHEIs.
- To investigate effect of capacity building perspective on customer perspective in Ethiopian PHEIs.
2. LITERATURE REVIEW

Balanced score card was defined differently by different researchers. In evaluation of BSC concept, two fundamental moments were identified: First, BSC was presented as a performance evaluation system (Kaplan & Norton, 1992, 1993) and the authors defined BSC as “a set of measures that gives top managers a fast but comprehensive view of the business.” BSC is defined as “as a tool used by the management to keep a record of the activities and actions of the staff and to control and monitor the results or consequences of the actions.” More elaborating Holmes, Gutierrez and kiel (n.d) (as cited in Iqra et al. 2013) defined BSC as “A comprehensive method of measuring organizational performance that is superior to traditional singular and efficiency based measures of agency performance aimed at determining whether management is building the infrastructure necessary to sustain organizational and institutional resilience and accountability.”

Kaplan and Norton, initial proponents of Balanced score card, in their first article had revolutionized the way of leading organizations. Without a doubt, Kaplan and Norton created a tool that, through specific indicators, evaluates the performance of an organization. Robert S Kaplan and David P Norton (1992) first introduced the concept of balance scorecard in their Harvard Business Review article “The Balance Scorecard Measures that Drive Performance”. Focusing on the fact that managers needed a balanced presentation of both financial and operational measures they propounded four perspectives as the drivers of future financial performance:

1. **Customer perspective** – how do customers see us?
2. **Internal perspective** – what must we excel at?
3. **Innovation and learning perspective** – can we continue to improve and create value?
4. **Financial perspective** – how do we look to stakeholders?

The measures on the balanced scorecard ensure a balance between external measures for shareholders and customers, and internal measures of critical business processes, innovation and learning and growth. It strikes a balance between the outcome measures of past performance (lag indicators); the measures that drive future performance (lead indicators), and also between clearly quantifiable and somewhat subjective measures (Kaplan and Norton, 1996). Organizations placed a great deal of emphasis on financial measures in operating their organizations. According to Kaplan and Norton (1992) reliance on financial measures in a management system is insufficient, as financial measures are lag indicators that reflect the outcomes from past actions. The Balanced Scorecard paradigm retains measures of financial performance and supplements these measures with factors that drive future financial performance. The Balanced Scorecard is based upon the cause-and-effect relationships of the financial and non-financial measures derived from the organization’s strategy.

By supporting the work of Kaplan and Norton, Farid et.al (2008) noted that the scorecard provides executives with a comprehensive framework that translates a company’s strategic objectives into a coherent set of performance measures. It represents a fundamental change in the underlying assumptions about performance measurement and helps focus the strategic vision. The financial and customer perspectives describe the desired outcomes sought by the organization. However, these measures may contain many lagged indicators of performance. The internal processes and internal growth perspectives, on the other hand, show how the organization creates these desired outcomes. In this way, managers can identify a causal chain from the performance drivers to financial outcomes. From the top of the chain on down, desired financial outcomes can only be accomplished only if customers are satisfied. To realize the customer value propositions, internal processes must be created and delivered. Finally, the internal processes must be supported by an organization’s learning and growth. Kaplan and Norton (2004, p. 42) explain “Aligning objectives in these four perspectives is the key to value creation, and, hence, to a focused and internal consistent strategy”.

**THE FOUR PERSPECTIVES OF BSC**

The balanced scorecard retains financial measurement as critical summary of managerial and business performance, but it highlights a more general and integrated set of that link current customer, internal process, learning and growth to long term financial success (Kaplan and Norton, 1996). Thus, here under the four BSC perspectives shall be summarized to give some hints for the reader of this article:
FINANCIAL PERSPECTIVE

According to Malgwi & H. Dahiru (2014), financial perspective of Balanced score card seeks to answer the question: to succeed financially, how should the organizations appear to their shareholders? By citing Al-Najjar & Kalaf (2012), the authors discussed that financial measures convey the economic consequences that incur as a result of the actions already taken by the given organization, and it mainly concentrate on profitability related measures on which the shareholders verify the profitability of their investment. Return on Investment (ROI), Cash Flow, Net Operating Income, Revenue Growth are the commonly used measures under financial performance. The authors also mentioned as financial perspective looks at how the investors or the shareholders see the firm in terms of dividend payout ratio, improvement on the cost structure, profit after tax, return on capital employed (ROCE) and growth in the sales volume. In a not-for-profit organization the emphasis is significantly different from that of a for-profit organization. The financial perspective might include a maximization of funding from outside sources instead of profit, or maintenance of fiscal stability. Certainly other factors could also be considered. According to Procurement Executive Association (2011), as not for profit organization, financial considerations for public organizations have an enabling or a constraining role, but will rarely be the primary objective for business systems. Success for public organizations should be measured by how effectively and efficiently they meet the needs of their constituencies. Therefore, in the government, the financial perspective emphasizes cost efficiency i.e. the ability to deliver maximum value to the customer. As a result, for this study the researcher prefer measures recommended by Kaplan and Norton which are more applicable in not for profit organizations such as increases in revenue, Utilization of Assets and budgets properly. Thus, for this study opinions of the employees in relation with increment in revenue generating activities, proper budget allocation and utilization to reduce unnecessary costs, Wise full asset utilization such as repairing, proper allocation were took in to consideration as an indicators for financial perspectives.

CUSTOMER PERSPECTIVE

Kaplan and Norton, 2001 indicated that the core of any business strategy is the customer-value proposition which describes the unique mix of product, price, service, relationship, and image that a company offers. Procurement Executive Association (2011) indicates that customer perspective captures the ability of the organization to provide quality goods and services, the effectiveness of their delivery, and overall customer service and satisfaction. According to Kairu et. al (2013) customer perspective encompass the ability of the organization to provide quality goods and services to its customers, the effectiveness of their delivery, and overall customer service and satisfaction which would result from price, quality, availability, selection, functionality, service, partnerships and brand value propositions that will lead to increased customer acquisition and retention. Malgwi and Dahiru (2014) pinpoint that the typical measures used under customer perspective as customer complaints; customer satisfaction, customer lost/won and sales from new products etc. According to Abedalqader and Ashraf (2016) customer perspectives measures are leading indicators that have been found to drive future financial performance of the organization. Considering the nature of the organization for this study indicators of customer perspectives categorized in to three with some modification: First, Customer participation: having questions assessing participation of teachers, students and other staff at different decision making discussions such senate, AC, DC and other committees. Second, accessibility of services and goods: this implies whether different services and goods are accessible to customers in the university. The third and the last is customer satisfactions which collect information whether complains exist or not on the services and whether they satisfy with service they get from other offices in the same university.

INTERNAL BUSINESS PROCESS PERSPECTIVE

Kairu et.al (2013) explain that internal processes perspective concerned with internal business operations and results that lead to success financially and thereby satisfy customers. Study by Abedalqader and Ashraf (2016) put down that internal business processes perspective is all about investigation of an organization’s internal processes in terms of how effectively and efficiently operations are performed in the organization. Abedalqader and Ashraf also said internal business perspective focuses on the internal business results that lead to success in financial perspective and satisfied expectation of the customer, such as cycle time, quality, employee skills and productivity. By considering literatures and nature of the operation in educational institutions, for this study the researcher determine activities related to internal operations of the universities in Ethiopia as indicators of internal business process. These indicators are:
Automation of different data; Linkages internally and externally; improvement in service delivery systems; improvement in quality and diversity of services.

LEARNING AND GROWTH PERSPECTIVE

Kairu et al. (2013) explained that the learning and growth perspective examines the ability of employees (such as skills, talents, knowledge and training), the quality of information systems (systems, databases and networks) and the influences of organizational alignment (culture, leadership, alignment and teamwork), in order to help the accomplishment of organizational objectives. As per Malgwi & H. Dahriu (2014) learning and growth perspective concerned with all issues related to how an employee of an organization learns and grow in his/her career in order to improve the performance of the organization. Kaplan and Norton acknowledged that the measures of learning and growth perspective are the most difficult to select; therefore they suggest the following measures as examples: employee motivation, employee empowerment, employee capabilities, and information systems capabilities. Kaplan & Norton (1992) identified two major indicators enabling for this perspective to be actualized, namely increase Employees’ capacity and Increase Motivation, Empowerment and Alignment. For the current study which is in public educational institutions based on literature and considering the nature of the operation as well as current practices of BSC in universities in Ethiopia, the researcher selected, first activities related to development of skill, knowledge and capacity of employees; and secondly infrastructures that required to provide those services.

RELATIONSHIP AMONG BSC PERSPECTIVES

To investigate relationships among BSC perspectives, especially relationship between leading and lagging indicator and thereby examine influence of leading indicators on lagging indicators various studies were carried out. For example, Al Bento and Regina Bento (2012) conducted a study by using publicly available information from sample of 332 firms in USA. The study aims to examine relationship between financial and non financial measures of BSC perspectives. The researchers used regression to see effects of three non financial perspectives (internal business, customer and learning and growth perspectives) on financial perspectives of BSC. Regression result of the study showed as there is direct positive and significant relation between all non financial perspectives (namely, internal business process, customer and learning and growth) and financial perspectives in a sample firms at different strength. The direct links to financial performance from all nonfinancial BSC perspectives serve as alarm that managers at all levels are responsible for actions and outcomes that directly influence overall financial results. Akkermans and Oorschot, 2005 (as cited by Yael Perlman, 2013) used a system dynamics approach with causal diagramming in order to identify relationships between performance measures of the BSC.

Yael Perlman (2013) conducted a study with title Causal Relationships in the Balanced Scorecard to identify causal relationships between different performance measures in each of the four perspectives defined in the balanced scorecard and examine the influence of time lag on relationships between perspectives by using path analysis. The result showed a direct relationship between leading measures in the learning and growth perspective and lagging measures in the financial perspective. Joy Rabo (2014) also had Study entitled Linkages among Balanced Scorecard Perspectives by taking Publicly-Listed Service and Industrial Firms in the Philippines with the aim of validating the cause-and effect relationships among the four perspectives of the BSC framework in service and industrial firms. The study proposed to test if customer, internal process, and learning and growth perspectives have a significant effect on the financial perspective. The finding of the study showed that: (1) customer perspective has a significant positive effect on financial perspective; (2) internal process perspective has a significant negative effect on financial perspective; and (3) learning and growth perspective has no significant effect on financial perspective. Joy Rabo noted that the linkages among BSC perspectives can be achieved only by using publicly-available data thus the chosen measures are readily available from the financial reports (Financial statements) and are substitute of questionnaire-related data. Rillyan N R et.al. (2016) had a study on linkages among balanced scorecard perspectives: the case of Indonesian local banks with the aim of analyzing the relationship of non-financial perspectives to financial perspectives in BSC framework in Corporate Strategy of Local Bank. The research indicated that from 19 variables that were used in hypotheses as a measurement, only 17 variables significantly influence local bank performances.

To summarize and identify the Gaps even if most literatures support cause and effect relationship among BSC perspectives, there were also authors arguing against such relationship. Most studies done for profit oriented organizations (e.g. Khawla H. Kalaf 2012, Joy Rabo 2014, Shutibhinyo 2014) to examine
relationship among BSC perspectives. In profit oriented companies the lagging indicator is financial perspectives. Whereas, the current study is related with BSC implementation in public higher educational institutes where the ultimate goal is providing educational services than generate profit. As a result of this customer services is the primary goal of such organizations, which enforce the researcher to use customer perspective as dependent variable and other three perspectives as independent variables. According to Kaplan and Norton (2001b), although financial performance is not the main target of most governmental and non-profit organizations, the original sequence of the BSC perspectives can be rearranged with the customer perspective moving to the top. Bukh et al, (2001) also stated that the causal relationships in BSC should not be perceived as generic, but specific to the organization, and these are determined by the actual situation and the relevant time dimension between measures. Besides, unlike profit oriented firms, there is no data related to financial and non financial data from annual reports of such companies in organized form (profit, ROA, Debt ratio etc.) as used by other researchers. Therefore, for this study the researcher used primary data prepared mainly with Questioners. The questioners were prepared based on literature and considering the practices in Ethiopian public higher educational institutions. The researcher considers Staff types (Academic v/s Administrative) as a control variable as a result of the effect on customer perspective from the other three BSC perspectives may most likely to be influenced due to difference in staff types in service delivery. Thus, the proposed conceptual framework to show expected effects of financial, internal business process and, learning and growth on customer perspectives controlled for staff types in Ethiopian public higher educational institutions is as follow:

![Figure 1 Conceptual frame work of the study (Figure 2.4 in main text)](image)

### Independent variables
- Financial perspective
- Internal business process perspectives
- Capacity building perspective

### Dependent Variables
- Customer perspective

### Control variable
- Staff types: Academic Vs Administration

Sources: Self developed based on Literature

3. RESEARCH METHODOLOGY

This part deals with different methods that have been used in the study. It covers research approaches and design, Sampling method, Data Collection Methods and data analyzing method that were used in the study. The researcher used explanatory/causal research designs. The study was cross-sectional survey study. It concerned with effects of leading indicators of BSC such as internal business process, Financial and capacity building perspectives on lagging indicator, Customer perspective in this case, in PHEIs of Ethiopia.

This study employed stratified random sampling techniques which is one of common probability sampling. There are 34 public universities which were categorized in to three as first, second and third generation Universities. Then, from each classes or strata 2 Universities were taken for this study. As the Universities in the same generation are assumed to be similar and all policies, procedures, rules and regulations, including BSC guidelines provided by the Ministry of Education, there is homogeneity in between the universities. Thus, this Homogeneity lead the researcher to took only 2 Universities from each strata which constitute 20% of total population for first and third generation and 17% for the second generation Universities. The sampling procedures were as follow which calls for multi stage sampling: First, Universities were classified in to three stratum, namely, first generation Universities, second generation

---

1 Generation refers to categorization of Public HEIs of Ethiopia based on their year of establishment. Accordingly, there are three generations.
universities and third generation universities which is category of public Higher learning institutes in Ethiopia. Next, based on proportionate sampling, universities included in the sample were selected and besides, number of respondents from each University and strata were determined depending on proportion of total employees of each university to total employees in all sample Universities. Lastly, with simple random sampling, respondents were selected to give all respondents equal chance. Total population of the study was 8,271 academic and support staff of the Universities under study. The sample size of the study was determined by using Yamane formula to be 382 respondents which increased by 15% to 439 to compensate for non responses.

Even if the main sources of data were primary, secondary sources were also used to achieve objectives of the study. Primary data were collected by mainly using a self administered structured questionnaire arranged in 5-point Liker scale ranging from strongly Disagree to strongly agree from both academic and administrative staff of sample Universities. Whereas, secondary data were collected from the selected Universities, Ministry of Education of Ethiopia, internet, Websites, Journal articles, Books etc.

In this study Quantitative data analysis were used to achieve objectives of the study. Both descriptive and inferential statistics were employed in this study. Descriptive statistics such as Percentages, Maximum, Minimum and Mean were used in the analysis. To examine relationship among BSC perspectives Pearson Correlation were utilized. Stepwise multiple regressions Analysis were used to predict effects of impendent variables like financial, internal business process and capacity building perspectives on dependent variable customer perspective. Furthermore, Exploratory factor Analysis were used to reduce and create dimension for the data. In SPSS to check reliability, the Cronbach alpha estimates of reliability were calculated for the whole items, each items and dimensions and approved to be above minimum acceptable level.

4. DATA ANALYSIS AND DISCUSSIONS

As it was mentioned total samples of this study were 439. Self administered questioners were distributed to respondents in the 6 universities. Even if much effort exerted to collect all questioners distributed, it was impossible to do so and only 406 respondents returned back by filling completely. From this we can see that the response rate is 92.5% which is good.

RESULTS OF REGRESSION ANALYSIS

As per objectives of the study the hypothesis were prepared to examine effects of financial, internal business process and capacity building perspectives on customer perspective of BSC. Accordingly, to investigate the effects of the three independent variables on dependent variable multiple regressions were employed. To predicts effects of financial, internal business process and capacity building perspectives of BSC on customer perspective step wise multiple regression was run that controlled for staff types. The followings are statements that hypnotized and to be tested in this section.

**H 1:** Financial perspective has a significant and positive effect on customer perspective.

**H 2:** Internal business process perspective has a significant and positive effect on customer perspective

**H 3** Capacity building perspective has a significant and positive effect on customer perspective.

Interpretation of regression results and testing for hypothesis were done in parallel in the following sections.

Step wise multiple regression was used to predict effects of financial perspective on customer perspective in fist Model. Then, effects of financial and internal business process perspectives were shown in the second Model (step). The third model dealt with effects on customer perspective from financial, internal business process and capacity buildings that controlled for staff types.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.590a</td>
<td>.348</td>
<td>.346</td>
<td>.55272</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.620b</td>
<td>.384</td>
<td>.381</td>
<td>.53768</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.623c</td>
<td>.388</td>
<td>.382</td>
<td>.53720</td>
<td>1.909</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FINAPT
b. Predictors: (Constant), FINAPT, IBPPT
As it can be seen from Model summary table above, Adjusted R square =0.346 for the first model which means customer perspective explained 34.6% as a result of variation in financial perspective. In the second Model Adjusted R square =0.381 indicating variation in financial and internal business process perspective together explained customer perspective by 38.1% and the other remaining percentages explained by other variables. The table also showed Adjusted R square of 0.382 for the third Model which means that customer perspective explained by 38.2% due to variation in financial, internal business process and capacity building perspectives and control variable types of staffs.

Table 2 ANOVA table (table 5.15 in the main Text)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>65.805</td>
<td>1</td>
<td>65.805</td>
<td>215.402</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>123.421</td>
<td>404</td>
<td>.305</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>189.226</td>
<td>405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>72.717</td>
<td>2</td>
<td>36.358</td>
<td>125.762</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>116.509</td>
<td>403</td>
<td>.289</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>189.226</td>
<td>405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Regression</td>
<td>73.504</td>
<td>4</td>
<td>18.376</td>
<td>63.677</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>115.721</td>
<td>401</td>
<td>.289</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>189.226</td>
<td>405</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The output of regression Analysis also show ANOVA table (table 2) to evaluate over all fit of regression Model. The results for Step wise regression from the table witnessed that the first Model was statistically significant and fit well where DF=1, F=215.4 and p=0.000 which is below acceptable significant level of 0.05. When we look at Second Model DF=2, F=125.7 and p=.000, which implied the results were statistically significant and the Model fit well. The third Model in Step wise regression result was also statistically significant where, DF =4, F=63.77 and P=.000 which is below Maximum acceptable level of significance which is 0.05.

Table 3 Regression Coefficients (table 5.16 in the main Text)

<table>
<thead>
<tr>
<th>Models</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sign.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>1.341</td>
<td>.103</td>
<td>12.987</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>FINAPT</td>
<td>.517</td>
<td>.035</td>
<td>.590</td>
<td>14.677</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>1.157</td>
<td>.107</td>
<td>10.783</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>FINAPT</td>
<td>.357</td>
<td>.047</td>
<td>.407</td>
<td>7.522</td>
</tr>
</tbody>
</table>

The table also showed Adjusted R square of 0.382 for the third Model which means that customer perspective explained by 38.2% due to variation in financial, internal business process and capacity building perspectives and control variable types of staffs.

As it can be seen from Model summary table above, Adjusted R square =0.346 for the first model which means customer perspective explained 34.6% as a result of variation in financial perspective. In the second Model Adjusted R square =0.381 indicating variation in financial and internal business process perspective together explained customer perspective by 38.1% and the other remaining percentages explained by other variables. The table also showed Adjusted R square of 0.382 for the third Model which means that customer perspective explained by 38.2% due to variation in financial, internal business process and capacity building perspectives and control variable types of staffs.

The output of regression Analysis also show ANOVA table (table 2) to evaluate over all fit of regression Model. The results for Step wise regression from the table witnessed that the first Model was statistically significant and fit well where DF=1, F=215.4 and p=0.000 which is below acceptable significant level of 0.05. When we look at Second Model DF=2, F=125.7 and p=.000, which implied the results were statistically significant and the Model fit well. The third Model in Step wise regression result was also statistically significant where, DF =4, F=63.77 and P=.000 which is below Maximum acceptable level of significance which is 0.05.
Stepwise regression result also displays coefficients table which is essential for developing regression equation as it indicate constants and Beta coefficients in the models. The constants are 1.341, 1.157 and 1.150 for model 1, 2 and 3 respectively showing decreasing trends. Table 5.16 above helps to examine effects of financial, internal business process and capacity building on customer perspectives that is also controlled for staff types. The result exhibit that there is positive and statistically significant effects from financial perspective on customer perspective where, Standardized beta Coefficients =.407, t=7.501 and p=.000 which is below the acceptable significance level of 0.05. Therefore, Hypothesis 1 (H1) accepted and may be concluded as financial perspective influences Customer perspective significantly in Ethiopian public HEIs as perceived by the respondents.

The results of regression analysis also indicate that internal business process perspective influences positively and significantly customer perspective, where standardized beta coefficients =.243, t =4.339, and p=.000 which is below the Maximum acceptable significant level of 0.05. Therefore, Hypothesis 2 (H2) was accepted and leads to conclusion that respondents perceived that there is positive and significant effects from internal business process perspective on customer perspective in public HEIs of Ethiopia. The effect of capacity building perspective on customer perspective was another result from regression output. The table reveal that there is insignificant positive effect from capacity building perspective on customer perspective with standardized beta coefficients =.059, t =1.392, and p=0.165 which is above the acceptable significant level of 0.05. As a result of this, Hypothesis 3 (H3) was rejected and may be concluded as respondents perceived capacity building have no significant effect on customer perspective even if it has positive influences.

Lastly, the table displays the effects of control variable (in this case) types of staff (Academic V/s Administrative) on customer perspective. The result indicates that there is a negative effect when we move from Academic staff to Administrative staff. But, still there is insignificant effect with standardized beta coefficients =.031, t = -.793, and p=.428 which is above the acceptable significant level of 0.05. Therefore, it can be concluded that type of staff (whether they are Academic or Administrative) have negative insignificant effect on customer perspective.

To investigate the effects of leading indicators (BSC perspectives) on lagging indicators there are a number of studies that were carried out. But, all previous studies were carried out by using data from profit oriented organizations where lagging indicator is financial perspective. Most of these studies found positive and significant influences of leading indicators on lagging indicator, but there were also studies that found negative and insignificant for some perspectives. For example, finding by Joy Rabo (2014) showed that: (1) customer perspective has a significant positive effect on financial perspective; (2) internal process perspective has a significant negative effect on financial perspective; and (3) learning and growth perspective has no significant effect on financial perspective. On the other side, Regression result of the study by Al Bento and Regina Bento (2012) reveal that, there is direct positive and significant relation
between all non financial perspectives (namely, internal business process, customer and learning and growth) and financial perspectives in a sample firms at different strength.

5. CONCLUSIONS

To sum up discussions in the above section showing effects on customer perspective from other three BSC perspectives, financial, internal business process, and capacity building, we can conclude that financial and internal business process perspectives have positive and significant influence on Customer perspective. However, capacity building has positive and insignificant effect on customer perspective. On the other side, the result shows the control variable, staff types have negative and insignificant influence on customer perspective. This means academic staffs have more effects on customer perspective than on administrative staff.

From these, it is possible to come up with that performance in financial, internal business process and capacity building perspectives leads to performance in customer perspective. All leading indicators have significant influence on lagging indicator except capacity building. Here, the result give a click to concerned body (Government and Management of the Universities) for working on customer perspective (which is essential pillar in nonprofit organizations), they should give also attention to other perspectives. It is also alarm that even if capacity building such as training, workshop, and infrastructure are believed to have significant effect on customer services, the result for this study shows insignificant effect. This may most likely happen as capacity building training, workshop etc. were not aligned to customer services (how to handle, satisfy etc. customers). As public organization, HEIs in Ethiopia are required to give more attention on customer services and satisfaction as ultimate goal than financial perspective. Above all, as universities in Ethiopia mainly depend on government budget, utilizing of the budgets properly and using for its purpose (customer services) are important and should get priority. Therefore, to achieve these critical issues public universities in Ethiopia and their managements get alarm from this result and should take in to account all other BSC perspectives, especially financial and internal business process. This leads to conclude that to achieve good performance in customer perspective, giving due attention to performance in other three perspectives of BSC is essential.

REFERENCES


Dag and Tonny (2015). Perceived problems associated with the implementation of the balanced Scorecard: evidence from Scandinavia, journal on Problems and Perspectives in Management, Volume 12, Issue 1


Farid et.al. (2008). Balanced scorecard application in universities and higher education institutes: Implementation guide in an iranian context / Annals of University of Bucharest, Economic and Administrative Series, pp 31-45


Joy Rabo (2014). A Study on Linkages among Balanced Scorecard Perspectives: Presented at the DLSU Research Congress 2014 De La Salle University, Manila, Philippines

Kairu et.al. (2013). Effects of balanced scorecard on performance of firms in the service sector; European Journal of Business and Management Vol.5, No.9, 2013; ISSN 2222-1905 (Paper), ISSN 2222-2839


Khawla H. Kalaf et.al. (2012). Designing a Balanced Scorecard to Measure a Bank's Performance. International Journal of Business Administration Vol. 3, No. 4


Rillyan N.R et.al. (2016). A study on linkages among balanced scorecard perspectives: the case of Indonesian local banks. Asia pacific Journal of Advanced Business and Social Studies, ISSN:2205-6033 Volume5, issue 2; Bandung Institute of Technology, Bandung, Indonesia

Shutibhinyo (2014). Determinants of balanced scorecard usage: indirect correlation through attitudinal factors. Volume 8, number 4; global journal of business research


Tilaye K. (2010). Rethinking institutional excellence in Ethiopia: adapting and adopting the balanced scorecard (BSC) model. JBAS, Vol.2 No.1