

Interrelationships Between Non-Financial Perspectives of Balanced Scorecard: Evidence from Sri Lankan Public Listed Companies

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Abstract

The objective of this study is to examine the interrelationship among the non-financial perspectives of the Balanced Scorecard. Out of 285 PLCs listed, 102 PLCs in the Colombo Stock Exchange; Sri Lanka have responded in this study and data collected with a standard questionnaire. Respondents were from the managerial capacity of the companies. The questionnaire captures all aspects that construct each non-financial perspective of the Balanced Scorecard using 5-point Likert scale. Two factors under each non-financial perspective, totaling to six factors were found through a factor analysis and the factors were used in finding the interrelationship between non-financial perspectives. Results reveal that the learning and growth perspective has a relationship with the internal business process perspective where both internal oriented learning and external oriented learning are highly correlated with collaborative process efficiency. The relationship between internal business process perspective and customer perspective is evidenced by the strong correlation that customer satisfaction has with both product delivery process efficiency and collaborative process efficiency. Learning and growth perspective reveals a relationship with the customer perspective having internal oriented learning strongly correlated with customer satisfaction. This study contributes to the body of knowledge by confirming the underlying assumption in the Balanced Scorecard and notifying firms that have or haven't adopted the Balanced Scorecard approach with a general conclusion to focus on the non-financial perspectives by understanding the interrelationship between them.

Keywords: *Balanced Scorecard, Colombo Stock Exchange, Non-financial perspectives*



1. Introduction

Complexity and competitiveness in today's dynamic business world requires all business organizations to focus on winning competition in the industry and to have a sustainable competitive advantage. Financially sound business organizations have collapsed in a short period of time highlighting the importance of looking at business performance from a broader manner. Financial information has become insufficient for decision making and more attention is required on non-financial performance measures that are under the control of the management. Balanced Scorecard introduced by Kaplan and Norton discusses four perspectives that a business should focus on to improve business performance and to achieve the business strategy.

Three non-financial perspectives of the balanced scorecard have a cause - and - effect relationship which has a sequential impact on one another (Kaplan & Norton, 1992). Businesses who have applied the balanced scorecard model to manage their performance and managers who have understood the importance of focusing on the interrelationships between non-financial perspectives of the balanced scorecard have achieved overall performance improvements and successfully implemented the intended strategy. However, the applicability and acceptability of the balanced scorecard in some countries and contexts have been questionable and continuously being researched to establish generalized conclusions. It has been an important matter to investigate which would benefit the business organizations to carefully design the performance management systems and to improve both financial and non-financial performance.

When businesses started moving their strategic thinking from shareholder theory to stakeholder theory, which requires all stakeholders to be overlooked by the business performance a more comprehensive and balanced performance tools were demanded. Balanced Scorecard was initially accepted as a performance management tool by many firms in the world considering the overall coverage of performance parameters and wide measurement of perspectives which leads to better decisions. The concept of balanced scorecard was published by Kaplan and Norton in their article to Harvard Business Review in 1992 which was widely accepted by firms all over the world (Kaplan & Norton, 1992).

Balanced Scorecard was not the first to use non-financial measures to motivate, measure, and assess organizational performance. After careful analysis of many performances management tools and frameworks, Balanced Scorecard devised by Kaplan and Norton in 1992 is found as the widely accepted performance management tool (Kaplan & Norton, 1996a). Further, the subsequent developments made to the initial balanced scorecard by Kaplan and Norton made it a strategic management tool (Kaplan & Norton, 2001a). Studies after one decade reveal that more than 40 percent of the organizations adopt the framework of the balanced scorecard with modifications (Thorpe & Beasley, 2004).

The shift of the nature of businesses from tangible asset based to knowledge-based work, balanced scorecard addressed all the important aspects which had to be considered. Building strong customer relationships, innovative products, and services development, improving the quality and responsiveness of operating processes, concentrating on skills and knowledge of workers were well addressed in the balanced scorecard approach. Further usage of technology in developing customer and supplier links are encouraged in this model which makes balanced scorecard a continuously upgrading and flexible framework for any business organization to adopt and win the competition (Kaplan & Norton, 2001).

1.1. Research Problem

Theoretical underpinning of the balanced scorecard suggests interrelationships between all four perspectives including a cause-and-effect relationship among non-financial perspectives (Kaplan & Norton, 1992). Studies in different contexts suggest positive relationships between the non-financial perspectives. Some studies resulted contradictory findings to the theoretical underpinning of the balanced scorecard (Ittner, et al., 2003). The doubt in accepting the perspectives of the original balanced scorecard model and their interrelationship is a problem to address in Sri Lankan context.

Based on the identified research problem, two research questions had been answered by this study.

1. What are the variables constructing non-financial perspectives of the balanced scorecard?
2. What is the interrelationship between non-financial perspectives of the Balanced Scorecard?

1.2. Research Objectives

This study is carried out towards two specific research objectives based on the research questions on which the need for this study emerged. Subsequent hypothesis development data collection and analysis had been focused on the direction towards these objectives (Cohen, et al., 2008).

1. To find the variables constructing non-financial perspectives of the balanced scorecard?
2. To analyze the relationships among the non-financial perspectives of the

balanced scorecard in Public Listed Companies

1.3. Significance and Organization

The effectiveness of adopting balanced scorecard in performance management has been questioned in the Sri Lankan context. Further the interrelationships between performance parameters of the non-financial perspectives of the balanced scorecard have not been accepted by many business organizations. This study focuses on addressing the concerns in such debate and tries to ensure the importance of balanced scorecard to business organizations in managing their performance parameters and making decisions on the balance of the weight given to performance parameters. Findings of this study contribute to the decision-making process of business organizations by highlighting the interrelationship between non-financial perspectives. This study holds the specialty of considering all business sectors in the CSE which was not tested previously in the Sri Lankan context.

2. Literature Review

Kaplan & Norton (1992) found that mere financial performance measures provide insufficient information of the future direction to the executives of organizations as innovations and continuous improvements affect organizations in the competitive business environment. Skills and competencies expected by modern businesses require better performance measures compared to traditional financial measures. Management of business organizations and academics have focused on this issue and studied to fine a comprehensive model to measure organizational overall performance which is addressed by the tool named as balanced scorecard which is device based on one year long research project. Outcome measures and performance drivers are the expected outcomes of implementing a balanced scorecard. Executives use the balanced scorecard for developing the strategy, communicating the strategy, and implementing the strategy to achieve a common goal (Kaplan & Norton, 1996a)

Performance measures focused more on the financial measures whereas the non-financial measures played a major role in the organizational performance. Integrating the financial and non-financial measures into a single system has driven the development of an effective balanced scorecard and the strategic map. Cause and effect relationship of the strategy is explained by the balanced scorecard which becomes the framework to map all strategies on a common dashboard for management to make futuristic decisions (Kaplan & Norton, 2001).

Perspectives in the balanced scorecard could be divided into two types based on their behavior in the performance measurement and management system. Learning and growth perspective, internal business and production process perspective and customer perspective are identified as non-financial variables on firm performance. (Cohen, et al., 2008).

The cause-and-effect relationship between the non-financial perspectives of the balanced scorecard has been tested in the social enterprises which resulted in positive relationships. Their study suggested a balanced scorecard model of social enterprises in which social objectives are accomplished based on the interrelationships between four perspectives. Perspectives are taken from the original balanced scorecard model that includes financial perspective, customers perspective, internal business process perspective and the learning and growth perspective. In the model, financial perspective constitute the financial

sustainability is positioned as the utmost perspective which is followed by the customers perspective that contains stakeholders and relationships with stakeholders. Internal business process perspective is dominated by business relationships and systems and learning and growth perspective by capability of change and development. These perspectives were placed at the bottom of the model (Lee & Moon, 2008).

Multi company study conducted in Greece provides evidence that the theoretical underpinning of the balanced scorecard exists in the actual performance of companies. Multiple companies were tested to facilitate a comparison between industries. The responses to a survey from chief executive officers, chief financial officers, or any other senior-level executives who are actively involved in the performance and strategic management processes of their companies provide the data for the empirical investigation of the balanced scorecard's theoretical underpinnings. All quantitative and qualitative measures could be grouped in to the four perspectives which are interrelated (Sigalas, 2015).

A study conducted in the Indian context with the objective of empirically proving the theoretical interrelationships between balanced scorecard perspectives found by Kaplan and Norton proved that such interrelationships exist between perspectives and some perspectives have significant mediating effects in India. Both customers and employees were considered as respondents of this study and highlighted the importance of focusing on leading factors which would bring better financial performance for the firm Further the cause-and-effect relationship among the four perspectives were confirmed in this study (Zahoor & Sahaf, 2018).

The evolution of major themes and topics within the Balanced Scorecard (BSC) framework includes a focus on customer orientation, financial management, integrated reporting, strategic performance management, sustainable development, and systems thinking. The prominence of the Sustainability Balanced Scorecard (SBSC) has also increased, driven by the establishment of sustainability as a critical global agenda and grand challenge (Kumar, et al., 2024).

3. Methodology

3.1. Data Collection

Primary data were collected to construct and measure non-financial (leading) variables. Data collected through a standard questionnaire which has been validated to identify the factors constructing non-financial perspectives and to suit the context of the study.

Questionnaire

A standard questionnaire is used to collect data for the three non-financial perspectives of the balanced scorecard that are learning and growth perspective, internal business processes perspective and customers perspective. Cohen, et al. (2008) used a questionnaire which is validated with a pilot study and used for this study to find the interrelationships between all perspectives of the balanced scorecard. That questionnaire addresses all the theoretical underpinnings of the balanced scorecard devices by Kaplan and Norton (1992).

Respondents

Respondents selected from the managerial and strategic level of the firms, who have a strategic and overall view of the firm (Aly & Mansour, 2017). Selected respondents were at a certain level of seniority in the firm to ensure they have good understanding of the business on a strategic view. Further the selected respondents had knowledge on the strategy and performance measurement system of the firm would be critical to provide valid data for the study (Silvi, et al., 2015).

All respondents who participated in the questionnaire survey had been ensured of their privacy as some of the information they provide are important and secured from the competitors.

3.2. Population and Sample

Previous research on interrelationships between performance parameters has approached all the companies in a stock exchange they selected for examining (Cohen, et al., 2008). Following the same approach suggested by considerable number of studies, the population of this study contains all Public Listed Companies (PLCs) trading in the

Colombo Stock Exchange, Sri Lanka. Out of 285 PLCs being approached 146 responses were received and 44 responses had been removed from the list due to duplicates, incomplete information. Further, some of these removed responses were from companies other than the selected sample. 102 successful and complete responses were used for the analysis.

3.3. Hypotheses

Based on the balanced scorecard framework, the following hypotheses were developed to test interrelationships among non-financial perspectives.

Objective 02 ; Hypotheses

Learning and growth perspective has been proven to have a positive relationship with the internal business process perspective as many past authors found (Kaplan & Norton, 1996a). That leads to a hypothesis to test that relationship using correlation as suggested by previous studies (Cohen, et al., 2008).

H1.1 Learning and growth perspective factors positively correlate with internal business process factors.

Internal business process perspective has resulted a positive relationship with the customer perspective as many studies found (Kaplan & Norton, 1996a). That leads to a hypothesis to test that relationship using correlation as suggested by previous studies (Cohen, et al., 2008).

H1.2 Internal business process perspective factors positively correlate with customer perspective factors.

Learning and growth perspective has displayed a positive relationship with the customer perspective as found by many authors (Kaplan & Norton, 1996a). That leads to a hypothesis to test that relationship using correlation as suggested by previous studies (Cohen, et al., 2008).

H1.3 Learning and growth perspective factors positively correlate with customer perspective factors.

Interrelationship between non-financial perspectives of the balanced scorecard is articulated on below figure (I).

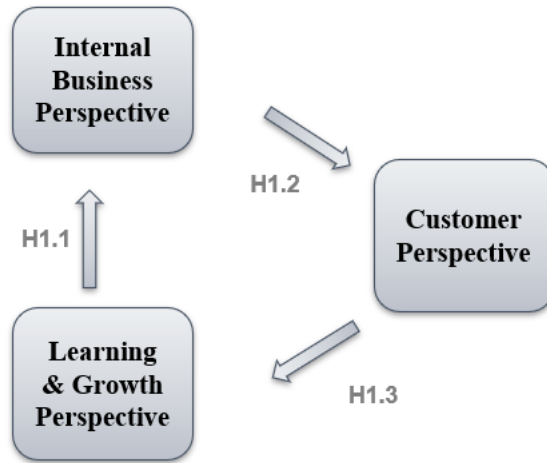


Figure I: Underlying Assumption of Balanced Scorecard Model

3.4. Operationalization of Variables

The following table shows all the variables and their measurement used for operationalization purpose of the study.

Table I: Operationalization

Variable	Abbreviation	Measurement	Literature
Learning and growth perspective:			
Investments in new technology	InvTech	5-point Likert Scale	(Kaplan & Norton, 1996a)
Innovative products and services	IPS	5-point Likert Scale	(Evans, 2004)

Collaboration and information exchange in the organization	FCoEx	5-point Likert Scale	(Kaplan & Norton, 1996a)
Promotion of common business plans with co-operating companies	FPCBP	5-point Likert Scale	(Kaplan & Norton, 1996a)
Exchange of information with co-operating companies	FExCo	5-point Likert Scale	(Konsynski & McFarlan, 1990)
Cooperative companies monitoring	CCM	5-point Likert Scale	(Evans, 2004)
Internal business and production process perspective:			
Effective dispatching of orders	EDO	5-point Likert Scale	(Zahoor & Sahaf, 2018)
Degree of cooperation with suppliers	DoCS	5-point Likert Scale	(Johnson, et al., 2005)
Degree of cooperation with distribution channels	DoCDC	5-point Likert Scale	(Johnson, et al., 2005)

Speed of adopting innovations already introduced in the market	SoAIaI	5-point Likert Scale	(Evans, 2004)
Speed of adopting innovations not yet introduced in the market	SoAIaI	5-point Likert Scale	(Zahoor & Sahaf, 2018)
Customer perspective:			
Market share	MSh	5-point Likert Scale	(Evans, 2004)
Brand awareness	BA	5-point Likert Scale	(Laurent, et al., 1995)
Brand image	BI	5-point Likert Scale	(Ogba & Tan, 2009)
Perceived level of service	PLoS	5-point Likert Scale	(Kaplan & Norton, 1996a)
Perceived level of quality	PLoQ	5-point Likert Scale	(Zahoor & Sahaf, 2018)
Perceived value of money	PVoM	5-point Likert Scale	(Kaplan & Norton, 1996a)
Perceived level of trust to the products	PLoT	5-point Likert Scale	(Zahoor & Sahaf, 2018)
After-sales service	AfSS	5-point Likert Scale	(Johnson, et al., 2005)
Percentage of lost clients	PLC	5-point Likert Scale	(Evans, 2004)

Percentage of PCC 5-point Likert Scale (Kaplan & Norton, 1996a)
customers’ complaints

4. Data Analysis

4.1. Factor Analysis

Data representing variables under non-financial perspectives were collected through the questionnaire and used for a comprehensive analysis. Responses for 21 questions in the questionnaire were used for the factor analysis to identify representative factors for each non-financial balanced scorecard perspective. Following the methodology of similar researchers, two factors for each perspective were identified. This factor identification was performed through a factor analysis. Below table depicts the results of the factor loading under the principal component analysis.

Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
Market share(MSh)				.692		
Percentage of customer complaints(PCC)				.875		
Percentage of lost customers(PLC)				.878		
Brand image(BI)	.749					
Perceived value for money(PVoM)				.695		

Perceived level of service(PLoS)	.833
Brand awareness(BA)	.748
Perceived level of quality(PLoQ)	.698
Perceived level of trust to the product(PLoT)	.787
Effective dispatching of orders(EDO)	.674
After sales services(AfSS)	.763
Cooperative companies monitoring(CCM)	.788
Degree of cooperation with distribution channels(DoCDC)	.765
Degree of collaboration with your suppliers(DoCS)	.698
Promotion of common business plans with co-operating companies(FPCBP)	.703
Innovative products or services(IPS)	.702
Investments in new technology(InvTech)	.675
Speed of adopting innovations already implemented in the market(SoAIaI)	.871

Speed of adopting innovations not yet implemented in the market(SoAInI)	.715
Collaboration and information exchange in the organization(FCoEx)	.779
Exchange of information with cooperative companies (FExCo)	.829

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 8 iterations.

Table II: Principal components analysis extraction table

Based on the Principal Components Analysis (Table II) having the Varimax with Kaiser Normalization as the rotation method, 06 factors were clearly identified from the component matrix each falls into an identifiable perspective. Perceived value for money (PVoM) is the only variable that does not fit into a factor under the customer perspective which needs to be tested for the internal consistency using Cronbach's alpha before excluding in the analysis. Out of the remaining 20 variables, each variable that is represented by each question in the questionnaire is located within the expected scope of the non-financial perspective.

4.2. Sampling Appropriateness

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

The Kaiser-Meyer-Olkin (KMO) test is used to determine the sampling appropriateness of data of the factor analysis used in this study. KMO value should be greater than 0.5 for a sample to be adequate for a factor analysis. Further the KMO value above 0.6 indicates

a considerable adequacy of the sample and a value between 1 and 0.8 is considered as a high sample adequacy. The sample selected for this study is proven for the sample adequacy based on the KMO value of 0.853 which is in the high sample adequacy range.

The correlation matrix is compared to the identity matrix in Bartlett's test for sphericity which determines whether there is duplication among variables that can be summarized using a few elements. Sig value below 0.05 for Bartlett's test indicates a significant association in the data. The data used for the analysis are considered to have a significant association based on the sig value of .000 which is below the acceptable level of 0.05.

<i>KMO and Bartlett's Test</i>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.853
Bartlett's Test of Sphericity	Approx. Chi-Square	1416.744
	df	210
	Sig.	.000

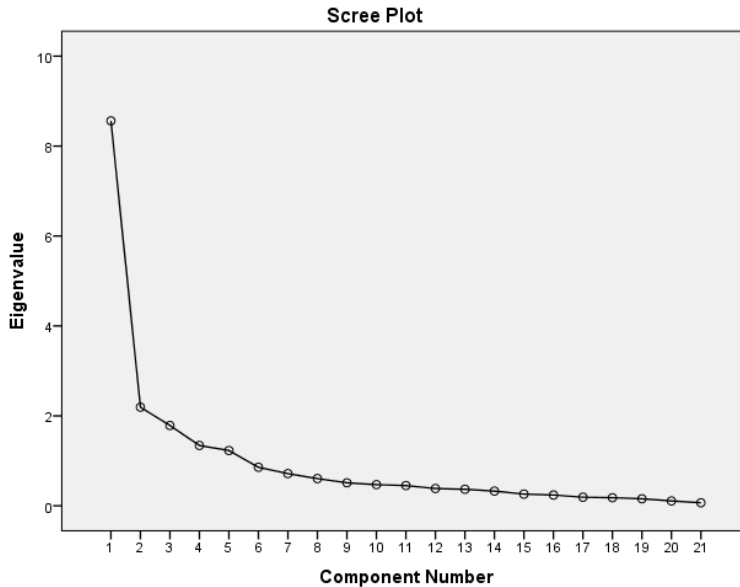
Table III: Sampling Appropriateness

With the support of the above positive results in Table III, the factor analysis led to significant 06 factors that represent three non-financial perspectives in the balanced scorecard.

Scree Plot

The scree plot in Figure II is a line plot of the eigenvalues of factors or principal components in a multivariate study. In an exploratory factor analysis, the scree plot is used to identify the number of factors to maintain or the number of principal components to keep in a Principal Component Analysis. In the scree plot, y-axis represents the eigenvalues, and the x-axis represents number of components. From the eigenvalue that ends the steeper drop of the scree plot, the number of factors to be decided.

Figure II: Number of factors to select



Based on the given scree plot in Figure II , it's evident that the number of factors should be six (06) as the point after the component number 06 starts to smoothen the curve leaving a less steep drop. The scree plot further strengthens the decision to identify 06 factors from the available variables.

4.3. Reliability Test (Objective 01)

Cronbach's alpha is a measure for internal consistency, or how closely a group of variables are related. It is regarded as a scale dependability indicator. A coefficient value of .70 or above in Cronbach's alpha is regarded as an acceptable level for measuring reliability (Cohen, et al., 2008). For the factors and constructing variables identified in the principal components analysis, internal consistency is tested using Cronbach's alpha. Below table summarizes the variables included used in constructing factors and the respective Cronbach's alpha coefficient values.

Cronbach's alpha coefficient values

Factor	Variable	Cronbach's alpha coefficient
Customer Retention (CR)	Market share (MSh)	.803
	Percentage of customer complaints (PCC)	
	Percentage of lost customers (PLC)	
Customer Satisfaction (CS)	Brand image (BI)	.898
	Perceived level of service (PLoS)	
	Brand awareness (BA)	
	Perceived level of quality (PLoQ)	
	Perceived level of trust to the product (PLoT)	
Product Delivery Process Efficiency (PDE)	Effective dispatching of orders (EDO)	.765
	After sales services (AfSS)	
Collaborative Process Efficiency (CPE)	Cooperative companies monitoring (CCM)	.860
	Degree of cooperation with distribution channels (DoCDC)	
	Degree of collaboration with your suppliers (DoCS)	

	Promotion of common business plans with co-operating companies (FPCBP)	
Internal Oriented Learning (IOL)	Innovative products or services (IPS)	.961
	Investments in new technology (InvTech)	
External Oriented Learning (EOL)	Speed of adopting innovations already implemented in the market (SoAIaI)	.889
	Speed of adopting innovations not yet implemented in the market (SoAInI)	
	Collaboration and information exchange in the organization (FCoEx)	
	Exchange of information with cooperative companies (FExCo)	

Table IV: Factor analysis results of non-financial perspective variables

Excluded Variable

Cronbach's alpha coefficient of the "Customer Satisfaction (CS)" factor reported a value of .858 when all 06 variables classified under the factor Customer Satisfaction (CS) are used in the measurement.

Item-Total Statistics						
	Scale if Deleted	Mean Item	Scale Variance Item Deleted	Corrected if Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Brand image (BI)		17.32	13.587	.770	.672	.815

Perceived value for money (PVoM)	17.73	16.934	.225	.071	.898
Perceived level of service (PLoS)	17.49	12.530	.730	.595	.818
Brand awarenes s (BA)	17.78	12.725	.707	.575	.823
Perceived level of quality (PLoQ)	17.43	13.139	.711	.568	.822
Perceived level of trust to the product (PLoT)	17.44	13.041	.770	.677	.812

Table V: Variables to be deleted to improve Cronbach's Alpha

However, "Cronbach's Alpha if Item Deleted" in the Item total statistics suggest that the Cronbach's alpha coefficient is to be improved to .898 if "Perceived value for money (PVoM)" variable is excluded from the factor. Following the suggestion by both principal component analysis results and the Cronbach's alpha coefficients, the Customer Satisfaction (CS) factor is constructed using the remaining five (05) variables.

4.4. Factor Values

As exposed in Table VI , based on the results of principal component analysis six (06) factors are identified each balanced scorecard perspective representing two (02) factors. Based on the nature of the variables grouped together in the principal component analysis, factors are named as mentioned in the below table. Factor computation is conducted as a mean value computation of all variables under the considered factor. These factors are established as new variables for testing the hypotheses developed under the broad research objectives.

<i>Descriptive Statistics</i>			
	Mean	Std. Deviation	N
Customer Retention (CR)	2.9118	.79593	102
Customer Satisfaction (CS)	3.5451	.82301	102
Product Delivery Process Efficiency (PDE)	3.4559	.73155	102
Collaborative Process Efficiency (CPE)	3.5196	.74602	102
Internal Oriented Learning (IOL)	3.6422	.89658	102
External Oriented Learning (EOL)	3.4926	.81785	102

Table VI: Descriptive statistics of non-financial factors

Variables under the learning and growth perspective were categorized in to two components in the factor analysis and named as Internal Oriented Learning (IOL) and External Oriented Learning (EOL) due to the orientation of the collected variables under each of the factor.

Product Delivery Process Efficiency (PDE) and Collaborative Process Efficiency (CPE) are the identified factors under the internal business process perspective, based on the concern of the variables included in the factors to the internal business processes.

Customer perspective had been divided into two factors and named them as Customer Retention (CR) and Customer Satisfaction (CS). Variables that support retention of the existing customers were categorized as customer retention and the variables that focused

on providing customers with satisfactory service were categorized as customer satisfaction.

4.5. Relationship Between Non-Financial Perspectives (Objective 02)

Correlation

According to Table VII, Pearson's correlation between the factors constructed under non-financial perspectives are critically analyzed to find the relationships. The sequential relationship between non-financial perspectives of the balanced scorecard is focused on the correlation matrix. Each factor is a part and partial a perspective where the Customer Retention (CR) and Customer Satisfaction (CS) represents customer perspective, Product Delivery Process Efficiency (PDE) and Collaborative Process Efficiency (CPE) represents internal business processes perspective and the Internal Oriented Learning (IOL) and External Oriented Learning (EOL) represents learning and growth perspective.

<i>Correlations between non-financial perspectives</i>							
		Customer Retention (CR)	Customer Satisfaction (CS)	Product Delivery Process Efficiency (PDE)	Collaborative Process Efficiency (CPE)	Internal Oriented Learning (IOL)	External Oriented Learning (EOL)
Customer Retention (CR)	Pearson Correlation	1	.349**	.254**	.336**	.367**	.334**
	Sig. (2-tailed)		.000	.010	.001	.000	.001
	N	102	102	102	102	102	102
	Pearson Correlation	.349**	1	.634**	.563**	.506**	.444**

Customer Satisfaction (CS)	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	102	102	102	102	102	102
Product Delivery Process Efficiency (PDE)	Pearson Correlation	.254**	.634**	1	.466**	.470**	.370**
	Sig. (2-tailed)	.010	.000		.000	.000	.000
	N	102	102	102	102	102	102
Collaborative Process Efficiency (CPE)	Pearson Correlation	.336**	.563**	.466**	1	.531**	.554**
	Sig. (2-tailed)	.001	.000	.000		.000	.000
	N	102	102	102	102	102	102
Internal Oriented Learning (IOL)	Pearson Correlation	.367**	.506**	.470**	.531**	1	.513**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	102	102	102	102	102	102
External Oriented Learning (EOL)	Pearson Correlation	.334**	.444**	.370**	.554**	.513**	1
	Sig. (2-tailed)	.001	.000	.000	.000	.000	
	N	102	102	102	102	102	102

** . Correlation is significant at the 0.01 level (2-tailed).

Table VII: Correlations among factors of the three non-financial perspectives

Relationship between learning and growth perspective and internal business process perspective (H1.1)

- External Oriented Learning (EOL) being a factor under learning and growth perspective has a strong positive correlation of .554 with Collaborative Process Efficiency (CPE) which is a factor categorized under internal business process perspective. This provided evidence of the association between learning and growth perspective and internal business process perspective.
- Internal Oriented Learning (IOL) being a factor under learning and growth perspective has a strong positive correlation of .531 with Collaborative Process Efficiency (CPE) which is a factor under internal business process perspective. This result provides an important insight that all factors of learning and growth perspective show a strong and positive relationship to one aspect of internal business process perspective.
- Product Delivery Process Efficiency (PDE) under the internal business perspective has a positive weak relationship with both factors of learning and growth perspective. Correlation is .470 with Internal Oriented Learning (IOL) and .370 with External Oriented Learning (EOL). The relationships are not strong based on the correlation value. However, the correlations are positive securing the movement of the variables in the same direction which is confining to the expectations of hypotheses.
- Correlation between External Oriented Learning (EOL) and Internal Oriented Learning (IOL) is .513 which is a positive strong correlation. This result suggests that the factors within the learning and growth perspective are interrelated. Such parallel behaviors among the factors under the same perspective could be natural due to the similar scope of within which those variables behave.

Relationship between internal business process perspective and customer perspective (H1.2)

- Correlation between Collaborative Process Efficiency (CPE) and Customer Satisfaction (CS) is .563 which is a positive strong correlation. Collaborative Process

Efficiency (CPE) being a factor under the internal business process perspective and Customer Satisfaction (CS) being a factor under the customer perspective, this correlation confirms the theoretical association between internal business process and customer perspectives.

- Product Delivery Process Efficiency (PDE) has a positive and strong correlation of .634 with Customer Satisfaction (CS). This strengthens the assumption of internal business perspective having an association with customer perspective as the Product Delivery Process Efficiency (PDE) is a factor under the internal business process perspective and the customer satisfaction is factorized under the customer perspective.
- Both Product Delivery Process Efficiency (PDE) and the Collaborative Process Efficiency (CPE) demonstrate weak relationships to the factor Customer Retention (CR) which is a partial of the customer perspective. However, both above relationships are positive which does not confirm contradictory behaviors.

Relationship between learning and growth perspective and customer perspective (H1.3)

- Internal Oriented Learning (IOL) is correlated to the Customer Satisfaction (CS) and that represents a strong positive relationship of .506. Internal Oriented Learning being a factor under the learning and growth perspective and customer satisfaction being a factor under customer perspective the theoretical underpinning is confirmed with the result.
- External Oriented Learning (EOL) has a weak correlation with customer satisfaction. However, the relationship is positive, denoting a movement of the variables in the factors to the same direction.
- Both Internal Oriented Learning (IOL) and External Oriented Learning (EOL) showing weak positive correlations with Customer Retention (CR) that does not confine to the theoretical interrelationship between learning and growth perspective and the customer perspective.

5. Conclusion

Kaplan and Norton's Balanced Scorecard is based on the assumptions of interrelationship between leading perspectives and their final impact on the lagging perspective that is financial performance. Objectives of this study were to identify the factors constructing the non-financial perspectives and to examine the interrelationship among the non-financial perspectives. All Public Listed Companies in the Colombo Stock Exchange, Sri Lanka were selected for the study and a standard questionnaire was used to collect data of non-financial perspectives that contained information for the period 2017 to 2019. The standard questionnaire used for this study consists of questions to capture all aspects that construct each non-financial perspective of the balanced scorecard. This study expected the empirical results to confirm the theoretical assumption underlying the balanced scorecard.

Factor analysis based on the selected data suggested six factors under the non-financial perspectives where each perspective contained two factors. When aggregating the variables into factors "perceived value for money" was removed from the variables list as it could not confirm the factor to which it should be attached. Mean of the Likert scale scores given for variables within each factor was calculated to measure the values for factors as per the first research objective. Interrelationships between non-financial factors using the Pearson's correlation analysis suggested a strong and positive correlations among the non-financial perspectives of the balanced scorecard addressing the hypothesis under the second research objective.

In conclusion, the theoretical underpinning of Kaplan and Norton's balanced scorecard (1992) was accepted, and the balanced scorecard model was recommended to Sri Lankan firms as an appropriate performance management tool. The cause-and-effect relationship among non-financial perspectives of the balanced scorecard was highlighted for managers attention in managing business and making strategic decisions. This study contributes to the existing body of knowledge of business performance management and strategic performance management by confirming the assumptions in the Balanced Scorecard and fills the practice gap by bringing the attention of the firms that have or haven't adopted the balanced scorecard approach to a common conclusion. Businesses are suggested to

consider the interrelationship between non-financial performance parameters in making their business decisions.

6. Limitations and Future Research Directions

Many studies conducted using the balanced scorecard as the framework in different contexts have found an impact from sustainability factors and structures in the organizations on selecting and executing performance measurement systems. Further the strategy selected by the top level of the organization has a direct impact on the selection of performance parameters that affects the results of any study conducted in the said context (Gosselin, 2011).

Following the same limitations encountered by many other researchers, findings of this study represent the performance management practices embedded in the Sri Lankan context that would contain the impact of some country specific factors. Conducting similar studies in different contexts and a comparison study between the results of different sectors are suggested as future research directions.

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