# DESIGNING THE BALANCED SCORECARD WEIGHT ON SYARIAH BANK BRANCHES THROUGH PERFORMANCE MEASUREMENT *(AN EMPIRICAL STUDY ON BANK SYARIAH MANDIRI)*

*A thesis submitted in partial fulfillment of the Requirements for the award of the degree*


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## CERTIFICATE

I, **Unggul Purwohedi**, certify that this thesis has not been submitted previously as part of the requirements of another degree and that it is the product of my independent research.

Signed : _____

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I certify that the Board of Examiners have met on December 23, 2004to conduct the final examination of **Unggul Purwohedi** on his Master of Science in Accounting Thesis entitled " Designing Balanced Scorecard Weight on Syariah bank Branches Through Performance Measurement (Empirical Study on Bank Syariah Mandiri )". The Board recommended that the candidate be awarded the relevant degree. The Board of Examiners for the candidate consists of the following persons :

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**This Thesis is dedicated to my beloved :**

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My Mother, Erdiyatun Soewardi
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# DESIGNING THE BALANCED SCORECARD WEIGHT ON SYARIAH BANK BRANCHES THROUGH PERFORMANCE MEASUREMENT (AN EMPIRICAL STUDY ON BANK SYARIAH MANDIRI)


## ABSTRACT

The objective of the study is to design the appropriate weight for each balanced scorecard perspectives (financial, customer, internal-business process, and learning and growth). To achive that objective, this study is trying to analyze the relationships between balanced scorecard perspectives with organizational and managerial performance. Therefore this study has two hypotheses, first the BSC usage is positively associated with organizational performance . Secondly, the BSC usage is positively associated with managerial performance.

In order to test the hypotheses, this study used the Structural Equation Model by AMOS 4.0. This study analyze managers in Bank Syariah Mandiri as the respondents. There were 51 respondents from all of Indonesia were used in this study which are consists of branch managers, operational managers and marketing managers, and questionnaires were sent by amail.

Using Structural Equation Model (SEM), the results of study indicated that each perspective has different relationship to organizational and managerial performance, either positive or negative. Internal business perspective supported the first hypothesis, on the other hand, financial and internal business perspective supported the second hypothesis. This study gives a recommendtaoion related with weight design for each BSC perspectives.



**Key words** : *Balanced Scorecard Weeight, Organizational Performance, Managerial Performance*

# MENDESAIN BOBOT BALANCED SCORECARD PADA CABANG-CABANG BANK SYARIAH MELALUI PENGUKURAN KINERJA (SEBUAH STUDI EMPIRIS PADA BANK SYARIAH MANDIRI)

## ABSTRAKSI

Tujuan dari penelitian ini adalah untuk mendesain bobot yang sesuai pada setiap perspektif *balanced scorecard* (keuangan, pelanggan, proses internal bisnis, dan pertumbuhan dan pembelajaran). Untuk mencapai tujuan tersebut, penelitian ini bersusaha untuk menganalisis hubungan anatar perspektif-perspektif *balanced scorecard* dengan kinerja organisasi maupun manajerial. Untuk itu, penelitian ini memiliki dua hipotesis, yang pertama penggunaan *balanced scorecard* berhubungan secara positif dengan kinerja organisasi. Kedua, penggunaan *balanced scorecard* berhubungan secara positif dengan kinerja manajerial.

Untuk menguji kedua hipotesis tersebut, penelitian ini menggunakan Model Persamaan struktural dengan dibantu *software* AMOS 4.0. Penelitian ini menganalisis manajer-manajer di Bank Syariah Mandiri sebagai respondenya. Lima Puluh Satu responden dari seluruh Indonesia digunakan dalam penelitian ini, yang terdiri dari kepala cabang, manajer operasional dan manajer pemasaran. Kuesioner dikirimkan melalui *email.*

Dengan menggunakan Model Persamaan Struktural, hasil dari penelitian ini menunjukkan bahwa masing-masing perspektif memiliki hubungan yang berbeda dengan kinerja organisasi maupun manajerial, baik positif maupun negatif. Perspektif proses internal bisnis mendukung hipotesis pertama sedangkan perspektif keuangan dan proses internal bisnis mendukung hipotesis kedua. Penelitian ini juga memberikan rekomendasi terkait dengan desain bobot bagi setiap perspektif.

**Kata-kata Kunci** : *Bobot Balanced Scorecard, Kinerja Organsasi, Kinerja Manajerial*

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# CHAPTER I
# INTRODUCTION

## 1.1. Background

The development of syariah banking has shown its great contribution to community. Syariah bank is an intermediary and trustee of other people's money with the difference that it shares profit and loss with its depositors. Syariah banking introduces an element of mutuality between depositors and bank. Both of them have the same right in distributing the return. However, in practice, most syariah banks have an organizational set-up similar to their conventional counterparts.

One of the most beneficial function in an organization is related to control system. Syariah banking control systems may be divided into internal and external. The former includes managerial remuneration and constitution of Board of Directors. The markets for corporate control and managerial labor, product market competition, juridical constraints, and exit and voice strategies are examples of external control (Dar & Presley, 2000).

There are several reasons why the discussion of control mechanism in syariah banking become more importanat than in conventional banking. First, syariah banking, as one of the Islamic financial institutuion engaged to several Islamic principles, one of them is finacial accountability (*amanah*). Thus, syariah banking through its control mechanism is trying to assure its stakeholders in impiementing Islamic principles in their daily banking activities. Another reason syariah banking as an instrument to achieve economic justice in Islamic framework. The obligation to distribute zakat, is the most common objective item in most Islamic entities.

Basically, the classical method of control which is proposed by the agency theory is a system of incentives that aligns interest of shareholders and managers. Moreover, in agency theory, Management Control System (MCS) provides incentives to align the interests of agents with principals. A contractual form of trust that involves the application of formal arrangements between employees and principals and the design of incentives to direct effort toward the principal' s interests in a cost effective way closely mirrors agency relationships (Chenhall & Smith, 2003).

One of the control mechanism in organization is performance measurement. It contains the method of re-numeration packages for management. Including, incentives strategy includes salary incentives, share options, executive presentations and discussions, and active employment market for senior executives whose salary may be determined by past performance (Dar & Presley, 2000).

The main focus on performance measurement issues is how to seek the best underlying measures in evaluating process. In the early of performance measurement, people tend to rely on financial measures especially accounting performance (Otley & Fakiolas, 2000). This began with Hopwood's pioneering work on the role of accounting data in performance evaluation . Hopwood's (1972) work identified three distinct evaluative styles used by senior managers in holding subordinates accountable for their performance. Hopwood's reports explained where managers perceive that budgetary as financial information plays an important part in the evaluation of their performance, and distinguishes between a rigid, short term orientation and a more flexible, longer term use of budgetary information. Hopwood

measured evaluative style on the basis of questionnaire completed by subordinate managers who reported on the evaluative style they perceived the superior to use.

The Financial measures is extensively modified. The birth of Economic Value Added (EVA) is an alternative in measuring company's performance beside financial ratios (Bacidore et.al., 1997). Many researchers using financial ratios in assessing banks performance, for instance the study of Bank Islam Malaysia Berhad ( Samad & Hassan, 1999)

Conversely, a number of researchers argued that financial measures is insufficiently in evaluating performance. Hayes (1977) in Brownell (1982) has indicated that accounting information is less appropriate as a focal element in organizational control with increasing exposure of the organization, or subunits of it, to the environment. Ittner *et. al* (1997) denoted that the use of non-financial measures in performance evaluation has been on the increase. Such non-financial measures include market share, efficiency/productivity, product quality, customer satisfaction and employee satisfaction. They also found that utilities and telecommunication firms in their study prefer to non financial measures than financial measures in the use of evaluating performance and reward system. Furthermore, the need for more non-financial measures in management accounting has been well articulated. In addition, there is evidence from surveys and interviews that executives value non-financial information better than financial measures (Schiff & Hoffman, 1996).

Non-financial information has also been incorporated in the management accounting and control system provided both financial and non-financial data. One of the principal motivations for this study was the belief that an exploration of how

executives actually utilize financial and non-financial performance measures would contribute to an understanding of the above developments (Schiff & Hoffman, 1996)

The study of Kald and Nilsson (2000) in Nordic companies showed that non-financial measures which reflect profitability, are a very important element in measuring the performance of the business units. Measures which reflect cost effectiveness and the distribution of sales, and which directly relate to profitability, play a significant role in monitoring performance. The greatest shortcomings of current performance measurement is criticized for focusing excessively on the past and on the short run. This bias is reflected primarily by the fact that the most important measures are financial and relate to profitability, cost effectiveness, and distribution of sales.

Agency theory provides a guidance of how multiple signals are commonly available for evaluating managerial performance (Banker & Datar 1989). Kaplan (1983) proposed his notion about how to construct the performance measurement in manufacturing sector. Hence, he mentioned that manufacturing sector which is rely on any single measure to motivate and evaluate the performance of managers in complex production and marketing settings is probably naïve. Any single measurement will have myopic properties that will enable managers to increase their score on this measure without necessarily contributing to the long run profits of the firm. That is why some firms are moving away from an over-reliance on single financial measures of managerial performance. General electric has a flexible incentive system for the managers of its strategic business Units (SBU's).

Ittner and Larcker (1998) in their study mentioned three aspects which is denote as financial measures shortcomings :

1. Perceived Limitations in Traditional Accounting-Based Measures. Companies believed that, relative to key non-financial indicators, traditional accounting measures (1) are too historical and "backward looking",(2) lack predictive ability to explain future performance, (3) reward short term or incorrect behavior, (4) are not actionable, providing little information n on root causes or solutions to problems, (5) do not capture key business changes until it is to late, (6) are too aggregated and summarized to guide managerial action, (7) reflect functions, not cross-functional processes, within a company, and (8) give inadequate consideration to difficult to quantify " intangible" assets such as intellectual capital. By incorporating non financial indicators into their measurement systems, many firms sought to create a wider set of measures that capture not only firm value, but also the factors leading to the creating of value in the business.
2. Competitive Pressure. Many firms experienced a perceived shock to their operating environments that motivated management to find new ways of managing, measuring and controlling operations. The substantial changes in the nature and intensity of competition forced firms to determine and measure the non-financial "value drivers" leading to success in the new competitive environment. The greater emphasis placed on non-financial measures in firms facing competitive pressure is consistent with research finding positive associations between perceived environmental uncertainty and the demand for broad based information systems incorporating non financial indicators.

3. Outgrowth of other Initiatives. Other firms adopted non-financial measures as an outgrowth of improvement initiatives that required new performance indicators, especially the adoption of Total Quality Management (TQM) programs. Many management accounting researchers argue that effective TQM requires timely, detailed process information for identifying the sources of defects and monitoring the consequences of subsequent improvement activities—information that typically is not available from aggregate accounting data (Kaplan 1983, Johnson 1992). The quality management literature also maintains that TQM requires greater emphasis on customer requirements and customers satisfaction with the firm's products or or services, leading to greater emphasis on non-financial customer measures such as complaints, satisfaction and retention (e.g. US Department of Commerce 1997).

Some researchers criticize the financial measures which are solely focus on their historic nature, which ensures that they reveal a great deal about the company's past actions but nothing about its future alertness. Accounting figures do not emphasize the elements which will lead to good or poor future financial results. One of the problems with accounting figures is that the financial consequences of the uncompleted chains of action extend beyond the time of measurement (Norreklit, 2000; Eccles & Pyburn, 1992; Ittner *et.al*, 2003; Hoque *et.al*, 2001).

In particular, many firms are implementing "Balanced Scorecard" systems that supplement traditional accounting measures with non financial measures focused on at least three other perspectives-customers, internal business processes, and learning and growth (Kaplan & Norton 1992, 1996a,1996b,1996c) .

Another key issue is defining precisely what "balance" is and the mechanisms through which "balance" promotes performance. A common view, perpetuated by early writings on the balanced scorecard concept (e.g. Kaplan & Norton 1992), is that "balance" is achieved by diverse measurement in the domains of financial performance, operational performance, performance for the customer, and learning and innovation. According to this view, multiple measures in each of several domains minimize the risk that information germane to business results will be lost. More recently, Kaplan and Norton (1996c) argue that a balanced scorecard is not merely a collection of financial and non financial measures in various categories, but an integrated set of measures developed from a "theory of the business" that explicitly links the scorecard metrics is a causal chain of performance drivers and outcomes.

Performance evaluation that takes into accounts both financial and non-financial indicators is likely to be viewed by subordinates as a just or fair procedure because such evaluation does not relies on only one aspect or dimension of subordinates performance, multiple measures based performance evaluation views the subordinates performance in broader scope (Mahfud & Lau, 2003; Ainun Naim,*et.al*, 2003). Such a multidimensional approach to performance evaluation is increasingly recognized in the recent writings of Kaplan and Norton (1992, 1993, 1996a, 1996b, 1996c) with a buzzword, The balanced scorecard (BSC). In this study a multidimensional performance measurement system refers to a portfolio of performance measures, financial as well as non financial dimensions including financial, customer, internal business processes, and learning and growth (Kaplan & Norton, 1992, 1996a, 1996b, 1996c).

Critical issues in multidimensional measures is determining the best weight for each measures. Schiff and Hoffman (1996) reveal that non-financial measures may have a greater weight than financial measures for some types of performance judgments. While the financial cues were used more heavily by the executives for the department performance judgments, this was not the case for the manager performance judgments. Ittner *et.al.*(1997) found that firms engaging in a prospector strategy rely more heavily on non financial measures in the CEO's annual bonus contract than those following a defender strategy. Organizations are characterized as prospectors or firms that exhibit a differentiation strategy. These firms attempt to identify new product/service market opportunities, quickly adapt to changes in the external environment, and follow a "first-to-market" strategy. At the other extreme, organizations are characterized as defenders or firms that exhibit a cost leader strategy. These firms attempt to provide a stable set of products and services to a well defined portion of the total market while emphasizing improvements in current operating efficiencies in order to lower costs.

Datar, Kulp and Lambert (2001) developed an agency theory model to analyze the optimal weights to apply to performance measures in a compensation measures in a compensation contract. Accounting systems produce numerous measures of financial performance, including costs, revenues, and profits. Each of these financial measures of performance can be calculated at the "local" level or at higher levels, including the firm wide level.

In a survey of Balanced Scorecard implementations by the consulting firm Towers Perrin, they found that Balanced Scorecard adopters continue to place the majority of weight on financial measures (mean = 56 percent), followed by customer

measures (19) percent) and internal process measures (12 percent). Corporate and division level measures are most common , with relatively little weight placed on subsidiary or other (e.g. department or team) measures.

Kaplan and Norton (1996c) highlight three potential difficulties in integrating the balanced scorecard measures into formula-based compensation plans. Firstly, the firm must determine the appropriate weights to place on the multiple performance measures. Secondly, formulaic compensation plans may be susceptible to the game playing associated with explicit, formula based rules.

The subjectivity in determining the appropriate weight for each measure, has also become the field of researcher's study (See Ittner.*et.al.*2003). Lipe and Salterio (2000) indicated that business unit in the organization develops its own BSC measures to reflect its goals and strategy. While some of the measures are likely to be common across all subsidiaries or units, other measure will be unique to each business unit (Kaplan & Norton, 1996c). Judgment and decision–making research suggests that decision makers faced with both common and unique measures may place more weight on common measures than unique measures. Therefore, managers evaluating multiple subordinate units (i.e. superior managers) may under use or even ignore the unique measures designed for each unit. The difficulties in using unique measures may be compounded when the manager who carries out a unit's performance evaluation does not actively participate in developing that unit's scorecard and consequently, may not appreciate the significance of the unique measures. Under use of unique measures reduces the potential benefits of the BSC because the unique measures are important in capturing the unit's business strategy. Their study showed that the experimental participants evaluate the divisions based

solely on the common measures. Performance on unique measures has no effect on the evaluation judgments.

Lipe and Salterio (2000) indicated that the pattern of performance on common measures affects the managers evaluations, while the pattern for unique measures does not. They also stated that the disregard or under use of unique measures in evaluating business unit performance has two major implications, first : unique measures are disregarded in the ex-post performance evaluation of a business unit managers has significant implications for the unit manager's ex ante decision making strategy. They also show that items not included in evaluation and compensation of an agent will have little effect on the agent's decision. Secondly, Kaplan and Norton (1996c) note that lagging measures are often rather generic (i.e. applicable to many units), while leading measures are more likely to be customized for each business unit. Thus, evaluators who focus on common measures may largely overlook or disregard leading measures. Further, since financial measures are often common across business units, the unique non-financial measures may receive less attention. Underweighting non-financial and leading measures undermines the goals of BSC, which was expressly designed to incorporate such measures into managerial thought and decision making (Kaplan & Norton 1996b,1996c)

### 1.2. Statement of the Problem

One critical implementation issue that arises when incorporating multiple performance measures in reward systems is determining the relative weights to place on the various measures (Ittner, *et. al.*, 2003). On the other hand, the decision in

setting the appropriate weight for each BSC perspectives tends to be influenced by subjectivity of managers (Ittner *et.al.*, 2003).

Therefore the problem of this research is there is still lack of evidence for managers to determine various performance measures which is effected to managerial or organizational performance, and these statement is supported by several findings on previous research. Lipe and Salterio (2000) found that supervisors tend to rely on common measures than unique measures in evaluating their subordinates, thus it is a subjective decision. Therefore, based on current condition, this study is attempting to answer the research question that is how to design the best performance measurement according to organizational and managerial performance. This study will be used by manager to justify the best weighting for each perspectives in Balanced Scorecard.

### 1.3. Objective of the Study

The main objective of this study is to design the appropriate weight for each Balanced Scorecard perspectives (in financial, customer, internal-business process, and learning and growth), while the specific objective of this study are as follows :

1. To examine the relationships between The Balanced Scorecard perspectives (financial, customer, internal-business process, and learning and growth) and managerial performance.
2. To examine the relationships between The Balanced Scorecard perspectives (financial, customer, internal-business process, and learning and growth) and organizational performance.

3. To examine the relationships of each Balanced Scorecard perspectives to organizational performance.

## 1.4. Contribution of The Study

This research contributes to the accounting world in three ways :

1. Contribution to Theoretical

   This study will enrich the theory that according to the agency problems, the multi signals performance measurement is the best way to minimize those problems.

2. Contribution to Practical

   This study will help practitioners in developing Balanced Scorecard in their company with the precise weighting system.

3. Contribution to Organizational

   This study will proves that Multiple-Measured Based Performance is better than single measures performance in evaluating overall performance.

# CHAPTER II

# LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

## 2.1 Literature Review

This chapter will discuss about the theoretical framework of performance measurement. As indicated before, performance measurement issues is derived from Agency Theory which explains the contractual relationship between principal and agent (Belkaoui, 2000). Thus, management, as an agent, tends to maximize their utility by implementing various effort such as management control system.

Management Control System contains a variety of control mechanisms, including performance measurement, to align individual's behaviors with the strategies and goals of the organization (Chenhall & Smith, 2003). Therefore, The Balanced Scorecard as one method of performance measurement clearly related to those background theories

### 2.1.1. Agency Theory

Agency Theory, as used in management accounting research, is concerned with contractual relationships between a person(s) , a principal, and another person(s), an agent, to perform some service on the principal's behalf involves a delegation of the decision-making authority to the agent. Both principal and agent are assumed to be motivated solely by self-interest, that is, to maximize their subjectivity utility, but also to be aware of their common interest The agent is striving to maximize the contractual fee he receives subject to the necessary effort levels. The principal is striving to maximize the returns from the use of his resources subject to

the fee payable to the agent. These conflicts of interest are assumed to be brought into equilibrium by the agreed-on contracts. The contracts engage the members to agree to a set of cooperative behaviors, given implied self-interest motives. Two reasons may lead to the divergence between self-interest and cooperative behavior, adverse selection and moral hazard, which are information-based problems (Belkaoui, 2000).

Supporting Belkaoui's statement, Banker and Datar (1989) stated that the agency literature in accounting and economics, or the related literature in statistics, provides little guidance about how signals should be combined in constructing an evaluation measure. Multiple signals are commonly available for evaluating managerial performance. We distinguish between the performance evaluation measures based on basic signals and the compensation schedule based on the evaluation measure.

### 2.1.2. Management Control System (MCS)

Management control is a process whereas manager influence their sub-ordinates in the organization to implement organizational strategy (Anthony & Govindarajan, 2000). Schiff and Hoffman (1996) described the concept of Management Control System from management accounting point of view. The purpose of management accounting is to provide information for planning, evaluating and controlling within an organization. One type of evaluation which occurs regularly in organizations is an evaluation of the performance of operating departments and the managers of those departments. Management accounting should make it possible for the executives who perform this activity to judge whether the

performance of a department and its manager is excellent, poor or somewhere in between.

Moreover, Chenhall and Smith *(2003)* wrote that in agency theory, MCS provides incentives to align the interests of agents with principals. A contractual form of trust that involves the application of formal arrangements between employees and principals and the design of incentives to direct effort toward the principal' s interests in a cost effective way closely mirrors agency relationships. Their study examined the effectiveness of MCS in International Global Services firm.

### 2.1.3. Balanced Scorecard (BSC)

The usage of BSC has been implemented widespread in every organization either profit or non-profit organization such as hospital (Stefano, 2001). A survey conducted in the USA estimates that 60 percent of the fortune 1000 firms have experimented with BSC (Malmi, 2001). Lipe and Salterio (2002) had also conducted an experiment which resulted that logically organized performance measurement in

The reason of using of BSC could be different in different countries. Malmi (2001) found the reasons for adoption BSC in Finland :

1. Some companies stated that BSC translate strategy into action. The BSC model was found to be "smart", as one business planner of a medium-sized service organization put it. Hence, it seems that companies have had some problems in tying strategy work and yearly operations together and that BSC appear to be an appealing solution to this problem.

2. Quality programs and especially various types of quality awards sought by organizations seem to encourage BSC adoption in Finland
3. Some companies seem to have adopted BSC to support some other change agendas. In one service company, The BSC was adopted to support a new value chain concept
4. A surprisingly high number of the interviewees mentioned motives which relate to managerial fads and fashions. In addition to consultants selling new ideas, public seminars seem to have been important source of information about the BSC for companies. In addition to providing information, a number of seminars and workshops devoted to a certain issue tends to promote the topic as fashionable.
5. It seems that in some companies the motive for the BSC has been abandonment of traditional budgeting. Some companies have found budgeting laborious and regard it as an inaccurate estimate of the future, even when it is completed. In another large manufacturing company, The BSC was introduced as part of total redefinition of the company control system, one integral part of that redefinition being total abandonment of traditional budgeting.

Actually, The Balanced Scorecard (Kaplan & Norton,1996c) is another model which integrates financial and non financial strategic measures. It is distinct from other strategic measurement systems in that it contains outcome measures and the performance drivers of outcomes, linked together in cause-and-effect relationships(Kaplan and Norton,1996a; Kaplan and Norton, 1996c).

Kaplan and Norton (1996c) assume the following causal relationship : measures of organizational learning and growth→measures of internal business processes→measures of the customer perspective→financial measures. The measures of organizational learning and growth are therefore the drivers of the measures of the internal business processes. The measures of these processes are in turn the drivers of the financial measures. A good balance scorecard should have a mix of outcome measures (lag indicators) and performance drivers (lead indicators). An example of a lag indicator is increased turnover, while order execution time is a lead indicator. The assumption that there is a cause and effect relationship is essential because it allows the measurements in non-financial areas to be used to predict future financial performance. Thus the claim is that financial measures say something about past performance while non-financial measures are the drivers of future performance (Kaplan & Norton,1996c)

Kaplan and Norton (1996c) further point out that the balanced scorecard is not just a strategic measurement system but also a strategic control system which may be used to :

1. Clarify and gain consensus about strategy;
2. Align departmental and personal goals to strategy;
3. Link strategic objectives to long-term targets and annual budgets;
4. Identify and align strategic initiatives ;and
5. Obtain feed back to learn about and improve strategy (Kaplan & Norton,1996)

Kaplan and Norton concept including four major perspectives; Financial, Customer, Internal Business Processes , and Learning and Growth. The performance

measurement literature suggest that use of Multiple measures of performance may motivate breakthrough improvements in critical activity areas such as products, ,processes, customers, and market developments. Kaplan and Norton (1996c) suggest that, while traditional financial measures report on what happened last period without indicating how managers can improve performance in the next, a multidimensional approach to performance evaluation functions as the cornerstone of a company's current and future success.

Several researchers reports how non-financial performance measures can be best combined with financial measures to obtain the best measurement of performance in a competitive situation (see also Kaplan & Atkinson,1998; Hoque & James,2000). The relations among competition, computer aided manufacturing and use of multiple performance measures are discussed in turn.

A BSC looks the following four key perspectives :

1) Financial perspective—includes profitability measures such as operating income, return on capital employed, sales growth, generation of cash flow, or economic value added;
2) Customer perspective-encompasses such as customer satisfaction, customer retention, new customer acquisition, customer response time, market share , and customer profitability.
3) Internal Business processes perspective—the key measures include product design, product development, post-sale service, manufacturing efficiency, quality etc. and

4) Learning and Growth perspective—measures the ability of employees, information systems, and organizational procedures to manage the business and adapt to change.

The BSC was initially described as a performance measurement system containing both financial and non-financial measures (Malmi, 2001). The Balanced Scorecard with its large number of performance measures presents a complex task to a manager asked to use the scorecard to evaluate a division's performance (Lipe & Salterio, 2002). The value BSC is that it assists development of a consensus around the firm's vision and strategy, allowing managers to communicate the firm's strategy throughout the organization and forces managers to focus on the handful of measures that are most critical (Maiga & Jacobs, 2003).

BSC are primarily applied at business unit level. Business unit refers to profit center, division, subsidiary, or the like, in contrast to corporate level on the one hand and to department, activity, team or individual level on the other. This is not surprising, because it is usually at business unit or division where competitive strategies become crucial. Similarly, Kaplan and Norton (1996c) argue that the initial scorecard process works best in a strategic business unit.

In the normal course of a BSC implementation, each unit manager (and his or her team) develops that unit's scorecard, while higher level managers approve the scorecards and use them for evaluation and further decision making. Chow et al (1997) indicate that even small business develop multiple scorecards, each tailored to the strategy and goals of a specific sub unit.

Kaplan and Norton (1996c) argue that an important strength of the BSC is that each business unit in the organization will have its own scorecard specifically

tailored to that unit. Yet Kaplan and Norton (1996c) also note that all balanced scorecards are likely to use "certain generic measures". Thus, units at the same organizational level will have some common measures in addition to others that are unique to their business and strategy. Since operational reviews of performance typically occur at regular intervals (e.g. quarterly), the superior manager makes evaluations of multiple subordinates units (and their managers) within a short time frame, based on both common and unique measure.

### 2.1.4. An Overview of Syariah Banking

According to syariah banking as a research object, this study will also explain the main concept of syariah banking. Syariah banking fully implemented the Islamic principles in their daily operations. Like conventional banks, a syariah bank is an intermediary and trustee of other people's money with the difference that it shares profit and loss with its depositors. This difference introduces an element of mutuality in syariah banking, making its depositors as customers with some ownership rights in it. However, in practice most syariah banks have an organizational set-up similar to their conventional counterpart. This study is held on Bank Syariah Mandiri, as the second fully Syariah Bank in Indonesia, which is established 1999.

Most Islamic banks are confined to short-term, low risk investment, principally in the form of trade financing for inventory accomplished through the markup (*murabaha*) contract in which the bank buys inventory from the supplier to resell it to the customer at a price covering the bank's cost plus mark up. Investments are also scattered in profit-sharing partnership called *mudaraba* and *musharaka*, and in leasing arrangements called *ijara*, but these represent a small portion of the total

investment pool and historically are concentrated in the portfolios of more innovative vendors.

## 2.2. Hypotheses Development

### 2.2.1. Designing The Weight in Each Balanced Scorecard Perspectives

In designing the weight of BSC this study is using two method . Firstly, this study is attempting to determine the association of each Balanced Scorecard perspectives (financial, customer, internal business process and, learning and growth) with managerial and organizational performance. If there is an association, then through some statistical analysis, we can determine the highest significant perspectives. The summary of the relevant studies is shown in Table 2.1.

**TABLE 2.1**
**SUMMARY OF THE PREVIOUS RESEARCH ON THE ASSOCIATION BETWEEN BSC USAGE AND PERFORMANCE**

| Author | Variables | Research Method | Result |
|---|---|---|---|
| Hoque and James (2000) | Balanced Scorecard Usage, Organizational Size, Product Life Cycle stage, Strength of Market Position, and Organizational Performance | Moderated Regression Analysis, to see the relationship and moderated roles among those variables | Greater BSC Usage is associated with organizatrional performance improved |
| Hoque *et.al.* (2001) | Performance Measures Usage, Intensity of Market Competition, Computer Aided Manufacturing, and Business Unit Size | Multiple Regressions Analysis, where Performance Measures Usage as Dependent Variable and the remains as independent varaiable | Greater emphasis on multiple measures for performance evaluation is associated with business facing high competition and making greater use of computer-aided manufacturing processes |
| Ainun Na'im *et.al.* (2003) | Multiple Measures Based Performance (MMBP) Evaluation, Procedural Fairness, Interpersonal Trust and Managerial Performance | Path Analysis, to see whether direct or indirect effect between MMBP and managerial performance | The use of multiple measures for performance evaluation has a direct effect on managerial performance |

### 2.2.2. The Linkage between Balanced Scorecard Usage with Organizational Performance

Several companies have already adopted the balanced scorecard. Their early experiences using the scorecard have demonstrated that it meets several managerial needs. First, the scorecard brings together, and a single management report, and many of company's competitive agenda are related with: becoming customer oriented, shortening response time, improving quality, emphasizing teamwork, reducing new product launch times, and managing for the long term. Second, the scorecard guards against sub-optimization. It means that, the scorecard allows mangers to see the whole aspect of company's performance (Kaplan & Norton, 1992).

The Balanced Scorecard supplemented traditional financial measures with criteria that measured performance from three additional perspectives-those are customers, internal business processes, and learning and growth. It therefore enabled companies to track financial results while simultaneously monitoring progress in building the capabilities and acquiring the intangible assets they would need for future growth (Kaplan & Norton, 1996). The study of Hoque and James (2000), revealed that BSC usage is associated with the increased organizational performance. Therefore, the first hypothesis is :

***H1 : BSC usage in each perspectives (financial, customer, internal-business process, and learning and growth) is positively associated with organizational performance.***

**Figure 2.1**
**First Theoretical Framework**


### 2.2.3. The Linkage between Balanced Scorecard Usage with Managerial Performance

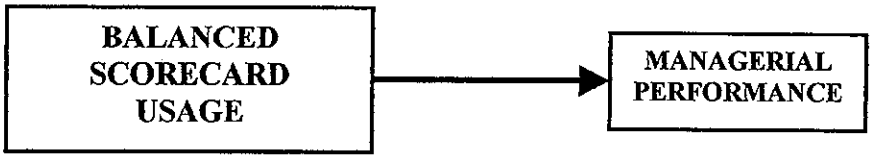
Effective measurement, however, must be an integral part of the management process. The Balanced Scorecard provides executives with a comprehensive framework that translates a company's strategic objectives into a coherent set of performance measures. Much more than a measurement exercise, the balanced scorecard is a management system that can motivate breakthrough improvements in such critical areas as product, process, customer and market development (Kaplan & Norton, 1993). BSC affects the behavior of managers and employees, and helps organization deliver dramatically improved performance (Kaplan & Norton, 2001). Moreover, this concept is supported by Kald and Nilsson (2000) in their survey in several Nordic companies found that BSC as a model in measuring performance.

BSC usage may also be associated with subordinates behavior (e.g. performance) because the multiple measurement system is capable of providing continuous signals and motivating breakthrough improvements in critical activities in such critical areas as product, process, customer and market development (Kaplan & Norton,1993, Hoque, *et.al.*,2001; Ainun Naim, *et.al.*, 2003)

In addition, BSC usage also reflects the complexities of the work environment, which enable managers to recognize the various dimensions of their work. Kaplan & Norton (1993,1996a,1996b,1996c) provide evidence that companies which use the multiple measurement system can operate in a more efficient way. From the preceding statement, this study hypothesize that :

***H2 : BSC usage in each perspectives (financial, customer, internal-business process and leaning and growth) is positively associated with managerial performance***

**Figure 2.2**
**Second Theoretical Framework**



# CHAPTER III

# METHODOLOGY

## 3.1. Data and Samples

The study is used primary data. For the primary data, this study will collect using questionnaire survey, sent to managers in each Bank Syariah Mandiri Branch. Managers are contains of branch manager, vice branch manager, and department manager. Bank Syariah Mandiri has 51 branches through out Indonesia. The functional managers is selected for the following reasons :

1. They provide some degree of control over the seniority of the respondent across organization (Ainun Na'im, *et.al.*, 2003).
2. They have been familiar with company's strategy, whereas these knowledge is the main idea of Balanced Scorecard implementation.

Questionnaires were sent to managers by e-mail.

## 3.2. Measurement Instruments

### 3.2.1. Organizational Performance

Organizational performance was measured by appraising five dimensions of performance ; return on investment, margin on sales, capacity utilization, customer satisfaction, and product quality. The instrument is conceptually consistent with Kaplan and Norton's (1992) BSC theorizing. The procedure used by others (e.g., Hoque and James, 2000; Ainun Naim, *et.al.*, 2003). Respondents were asked to indicate their organization's performance compared to their competitors along the above five dimensions on a scale from 1 = below average to 5 = above average.

### 3.2.2. Managerial Performance

The performance measure developed by Mahoney et. al (1963,19650 was used in this study. This instrument is widely used by many researchers, such as Brownell and Mc Innes (1986); Merchant (1981); Kren (1992) and Frucot and Shearon (1991). This asks for ratings for each of eight dimensions of performance as follows: planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, and representing. It also asks for a single overall rating, bearing in mind that different managerial positions re likely to require different mixes of the eight dimensions.

According to Brownel and McInnes (1986), this performance measure should meet two criteria: (1) reasonable assessment of independent dimensions of performance, and (2) the majority of the variation in the overall rating (item 9) should be explained by the eight items. Regressing the overall rating as the dependent variable on the ratings of each of the eight individual dimensions resulted in 75.6 percent explained variation, suggesting that the second criterion was met.

### 3.2.3. BSC Usage in Four Perspectives

BSC Usage was measured using a 20-item scale similar to that developed by Hoque and James (2000). The instrument comprised items that incorporate Kaplan and Norton's (1992) four dimensions of the BSC. It asked respondents to indicate the extent to which each item was used to assess their organization performance on a fully anchored, five point Likert scale ranging from 1 (not at all) to 5 (to a great extent). It is possible between performance indicators in BSC Usage have the same indicators in neither organizational nor managerial performance. It is happened

because performance indicators in BSC Usage has not classified yet into specific objective, organizational or managerial. Previous studies also conducted in this condition and still, those studies have meaningful conclusions.

### 3.3. Statistical Method for Data Quality Assurance

This study will deliver a pilot study to analyze the quality of the data which will be used related to the research instrument. There are two kind of test for this purpose, validity test and reliability test.

#### 3.3.1. Validity Test

Validity test is trying to know are measurement tools can be sensitive to all the nuances of meaning in the variable and to changes in nuances of meaning over time (Cooper & Schindler,2001). Statistical method to conduct the test is using correlation analysis whereas each indicator should have significant correlation among them (Ghozali, 2001).

#### 3.3.2. Reliability Test

Reliability test is considered with estimates of the degree to which a measurement is free of random or unstable error (Cooper & Schindler, 2001). An instrument is denoted reliable if the answer of respondent is consistent during the time (Ghozali,2001). Therefore, an instrument will be reliable if the Cronbach Alpha value more than 0,60 (Nunally in Ghozali,2001).

### 3.4. Statistical Method for Data Analysis

#### 3.4.1. Confirmatory Factor Analysis

Factor analysis is used to determine the groups to each indicators belongs (in this study the group is namely as perspective). Factor analysis is a multivariate technique which is trying to define the underlying structure in a data matrix. It addresses the problem of analyzing the structure of interrelationships (correlations) among a large number of variables ( e.g. test scores, test items, questionnaire responses) by defining a set of common underlying dimensions, known as factors. Using factor analysis the researcher can first identify the separate dimensions of the structure and the determine the extent to which each variable is explained by each dimensions. Once these dimensions and the explanation of each variable are determined, the two primary uses for factor analysis---summarization and data reduction—can be achieved (Hair et.al.,1998).

#### 3.4.2. Structural Equation Modeling

This techniques is used to test the first and second hypothesis. Structural Equation Modeling (SEM) as a general statistical modeling technique, which is widely used in the behavioral sciences. Meanwhile, Hair, *et.al* (1998) defined SEM as a multivariate technique combining aspects of multiple regression (examining dependence relationship) and factor analysis (representing unmeasured concepts—factors—with multiple variables) to estimate a series of interrelated dependence relationships simultaneously. It can be viewed as a combination of factor analysis and regression or oath analysis. The interest in SEM is often on theoretical constructs, which are represented by the latent factors. The relationship between the

theoretical constructs are represented by regression or path coefficients between the factors. The structural equation model implies a structure for the covariances between the observed variable, which provides the alternative name covariance structure modeling. However, the model can be extended to include means of observed variables or factors in the model, which makes covariance structure modeling a less accurate name.

Factor analysis assumes that the covariances between a set of observed variables can be explained by a smaller number of underlying latent factors. In exploratory factor analysis, we proceed as if we have no hypothesis about the number of latent factors and the relations between the latent factors and the observed variables. Statistical procedures are used to estimate the number of underlying factors, and to estimate the factor loadings. In exploratory factor analysis, the model is arbitrary: all variable load on all factors. Typically, a transformation method such as Varimax rotation is used to improve the interpretation of the results. Models of this kind are called restricted or Confirmatory Factor Analysis (CFA models). In structural equation modeling , the confirmatory factor model is imposed on the data. In this case, the purpose of structural equation modeling is twofold. First, it aims to obtain estimates of he parameters of the model, i.e. the factor loadings, the variances and covariances of the factor, and the residual error variances of the observed variables. The second purpose is to asses the fit of the model, i.e. to assess whether the model itself provides a good fit to the data. We will deal with these issues in more detail later.

In order to test the fit between model and data, several indicators are used. If we have a very large sample, the statistical test will almost certainly be significant.

Thus, with large samples, we will always reject our model, even if the model actually describes the data very well. Conversely, with a very small sample, the model will always be accepted, even if it fits rather badly. Given the sensitivity of the chi-square statistics for sample size, researchers have proposed a variety of alternative fit indices to assess model fit. Several goodness-of-fit index that does not depend on the sample size or the distribution of the data.

Jorekog and Sorbom (1989) have introduced two goodness-of-fit indices called GFI (Goodness of Fits) and AGFI (Adjusted GFI). The GFI indicates goodness-of-fit, and the AGFI attempts to adjust the GFI for the complexity of the model. Two other well known measures are the Tucker –Lewis Index TLI (Tucker & Lewis,1973), better known as the Non-Normed Fit Index or NNFI, and the Normed Fit Index or NFI. Both the NNFI and the NFI adjust for complexity of the model.

A general structural equation model is composed of three parts (1) the structural part linking the latent variables. (2) the measurement part specifying the relationships between observed exogenous variables and its corresponding a latent exogenous constructs and (3) the measurement part specifying the relationship between observed endogenous variables and its corresponding latent endogenous constructs. The three parts of structural equation model can be formulated as follows

The structural model is

$$\eta = I\xi + B\eta + \zeta$$

The measurement model for exogenous construct is

$$X = \Lambda_x \xi + \delta$$

The measurement model for endogenous construct is

$$Y = \Lambda_y \eta + \varepsilon$$

Therefore, the weighting design will be based on the results of the significance analysis from each BSC perspectives, in both performance measurement (managerial and organizational)

Therefore, this paper will estimate the following structural model to examine the first hypothesis :

$$\mathbf{ORGPERF} = \gamma_1 \mathbf{FINANCE} + \gamma_2 \mathbf{CUST} + \gamma_3 \mathbf{INTBUSS} + \gamma_4 \mathbf{LEARNGRO} + \zeta$$

Where :

ORGPERF : Organizational Performance

FINANCE : Financial Perspective

CUST : Customer Perspective

INTBUSS : Internal Business Process

LEARNGRO : Learning and Growth Perspectives

$\zeta$ : The portion of the endogenous variable that is not explained by the exogenous latent variables

Furthermore, the second hypothesis will be examined through the following structural equation model :

$$\mathbf{MANPERF} = \gamma_1 \mathbf{FINANCE} + \gamma_2 \mathbf{CUST} + \gamma_3 \mathbf{INTBUSS} + \gamma_4 \mathbf{LEARNGRO} + \zeta$$

Where :

MANPERF : Managerial Performance

FINANCE : Financial Perspective

CUST : Customer Perspective

INTBUSS : Internal Business Process

LEARNGRO : Learning and Growth Perspectives

$\zeta$ : The portion of the endogenous variable that is not explained by the exogenous latent variables

The independent variables reflected each perspectives in Balanced Scorecard. Therefore, those perspectives have a distinct performance measurement (performance indicators) as following :

a. Financial Indicators
    1. Return on Investment
    2. Revenue Growth
    3. Deposit Service Cost

b. Customer Indicators
    1. Revenue per Customer
    2. Customer Retention Rate
    3. New Customer Acquisition Rate
    4. Market Share
    5. Number of Customer Complaints
    6. Length of Cycle Time in Providing Service
    7. Customer Response Time

c. Internal-Business Process Indicators
    1. Number of new Product Launches
    2. Service Error Rate
    3. Request Fulfillment Time
    4. Internal Customer Satisfaction
    5. New Product Revenue

6. New Revenue per Sales Person
7. Selling Contracts per sales Person
8. Profitability per Customer

d. Learning and Growth Indicators

1. Employee satisfaction
2. Revenue per Employee

### 3.5. Testing for Hypotheses

In order to test the hypotheses, this study will be based on the SEM results. As stated above, the focus of this study's hypotheses is to test whether BSC usage has positive association with organizational and managerial performance. Therefore, through analysis of perspective's regression weight, this study will draw several results, which perspective has the positive association and which is not.

If the regression weight shows the positive parameters therefore the hypotheses will be supported and vice versa. In Structural Equation Model, there is also probability of significance, but in this study the decision to accept or reject the hypotheses solely based on the parameters of each perspective's regression weight

# CHAPTER IV

# RESULTS AND DISCUSSION

## 4.1. Descriptive Statistics

From the questionnaires that has been sent, total questionnaires return is 53 from the total population 100 managers throughout Indonesia (response rate 53 percent). From those number only 51 questionnaire was usable , according to completeness of analysis. The questionnaires is filled by managers in a branch. Usually each branch consists of three managers, there are branch manager, marketing manager and operation manager. Despite of that not every branch has three managers, this research is also consider each branch condition. It took a quite long to wait questionnaires return, on the other hand through e-mail this obstacles can be solved and it consider less costly. The following table will describe some characteristics of the respondent in this thesis.

**TABLE 4.1**
**CHARACTERISTICS OF RESPONDENTS**

| | N | % |
|---|---|---|
| Position | | |
| 1. Branch Manager | 20 | 39,3 |
| 2. Marketing Manager | 13 | 25,4 |
| 3. Operation Manager | 18 | 35,3 |
| | 51 | 100,0 |
| Sex | | |
| 1. Male | 47 | 92,2 |
| 2. Female | 4 | 7,8 |
| | 51 | 100,0 |
| Experiences | | |
| 1. =< 1 years | 6 | 11,8 |
| 2. 1 – 3 years | 22 | 43,1 |
| 3. > 3 | 23 | 45,1 |
| | 51 | 100,0 |
| Age | | |
| 1. 27 – 35 | 15 | 29,4 |
| 2. 36 -40 | 23 | 45,1 |
| 3. 41 – 50 | 7 | 13,7 |
| 4. > 50 | 3 | 5,9 |
| 5. NA | 3 | 5,9 |
| | 51 | 100,0 |

Source : Primary data processed, 2004

The amount of job from three types of manager seems similar with 39,3 % for branch manager, 25,4 % percent for marketing manager and 35.3% for operations manager. One of the interesting point of respondents profile is the composition between male and female managers. Total amount of female manager is 4 persons (7.8%) and the rest of them are male (92.2%). From the table we also can see that the majority of respondent has experiences more than 1 years, especially for experience

year above 3 years is the highest percentage from experience profile (45,1 %). Besides that, total respondents is also mature enough from their age. These findings give us assurance in saying that the whole respondents is sufficient enough in their competence to answer al the questions related to managerial task scope.

Table 4.2 will show us some descriptive statistics related to respondent responses and theoretical measurement scale. The following table indicates that most of the actual range lies in the middle of measurement scale, thus it shows that most of the respondent answer around the neutral scale.

**TABLE 4.2**
**DATA CHARACTERISTICS**

| Constructs | N | Min | Max | Mean | Std Dev | Theoretical Range |
|---|---|---|---|---|---|---|
| *Financial perspective* | 51 | 3 | 15 | 11,06 | 2,68 | 3-15 |
| *Customer perspective* | 51 | 8 | 34 | 25,18 | 4,39 | 7-35 |
| *Internal-Business process Perspective* | 51 | 16 | 36 | 26,9 | 5,10 | 8-40 |
| *Learning & Growth Perspective* | 51 | 4 | 10 | 7,47 | 1,41 | 2-10 |
| *Organizational Performance* | 51 | 13 | 23 | 17.57 | 2,44 | 5-25 |
| *Managerial Performance* | 51 | 27 | 41 | 33,69 | 3,47 | 9-45 |

Source : Primary data processed, 2004

## 4.2. Measures

### 4.2.1 Reliability Measures

Reliability is defined as degree to which a set of latent construct indicators are consistent in their measurements. In more formal terms, reliability is the extent to which a set of two or more indicators "share" in their measurement of a construct. The indicators of highly

reliable constructs are highly inter-correlated, indicating that they all are measuring the same latent construct. As reliability decreases, the indicators become less consistent and thus are poorer indicators of the latent construct. According to Nunally in Ghozali (2001) stated that the 0.6 as the standard for reliability. From the following constructs, learning and growth has the lowest cronbach alpha.

**TABLE 4.3**
**TEST OF RELIABILITY OF MEASURES**

| Construct | Number of Items in the Questionnaire | Cronbach's Alpha |
|---|---|---|
| *Financial Perspective* | 3 | 0,777 |
| *Customer Perspective* | 7 | 0,809 |
| *Internal-Business Process Perspective* | 8 | 0,801 |
| *Learning and Growth Perspective* | 2 | 0,594 |
| *Organizational Performance* | 5 | 0,783 |
| *Managerial Performance* | 9 | 0,841 |

Source : Primary data processed by SPSS 12.0

### 4.2.2. Validity Measures

Validity is determined to a great extent by the researcher, because the original definition of the construct or concept is proposed by the researcher and must be matched to the selected indicators or measures. Validity does not guarantee reliability, and vice versa. A

measure may be accurate (valid) but not consistent (reliable). Also, it may be quite consistent but not accurate. This validity and reliability are two separate but interrelated conditions

#### 4.2.2.1. Convergent Validity

Convergent validity can be assessed fro the measurement model by determining whether each indicator's estimated pattern coefficient on its underlying construct factor is significant that is greater than twice its standard error.

Each variable in this study has a critical ratio larger than twice its standard error, indicating that the convergent validity was met by the proposed variable and model. An error occurred while attempting to fit the model. The specified model has negative degrees of freedom. That is, the number of parameters to be estimated exceeds the number of distinct sample moments. For this reason, the model can not be identified.

**TABLE 4.4**
**TEST OF CONVERGENT VALIDITY**

| Constructs | Standard Error | CR |
|---|---|---|
| **Finance** | | |
| X1← finance | 0,194 | 3,935 |
| X2← finance | 0,339 | 3,649 |
| X3← finance* | | |
| **Customer** | | |
| X4← customer* | | |
| X5← customer | 0,644 | 1,492 |
| X6← customer | 0,861 | 1,827 |
| X7← customer | 0,867 | 1,882 |
| X8← customer | 0,913 | 1,872 |
| X9← customer | 1,144 | 1,963 |
| X10← customer | 1,200 | 1,969 |
| **Internal-Business Process** | | |
| X11← intbuss | 0,128 | 2,147 |
| X12← intbuss | 0,166 | 1,671 |
| X13← intbuss | 0,102 | 3,208 |
| X14← intbuss | 0,126 | 2,917 |
| X15← intbuss | 0,153 | 3,855 |
| X16← intbuss | 0,170 | 6,441 |
| X17← intbuss | 0,213 | 5,942 |
| X18← intbuss* | | |
| **Learning and Growth** | *Probably unidentified* | |
| **Organizational Performance** | | |
| X21← orgperf | 0,602 | 3,351 |
| X22← orgperf | 0,465 | 3,450 |
| X23← orgperf | 0,319 | 2,861 |
| X24← orgperf | 0,305 | 2,961 |
| X25← orgperf* | | |
| **Managerial Performance** | | |
| X26← manperf | 0,488 | 3,316 |
| X27← manperf | 0,488 | 3,267 |
| X28← manperf | 0,406 | 3,163 |
| X29← manperf | 0,445 | 3,089 |
| X30← manperf | 0,412 | 2,676 |
| X31← manperf | 0,529 | 2,745 |
| X32← manperf | 0,410 | 3,173 |
| X33← manperf | 0,466 | 2,983 |
| X34← manperf* | | |

* Standardized Regression Weights at 1
Source : Primary data processed by AMOS 4.0

#### 4.2.2.2. Discriminant Validity

Discriminant validity can be assessed for two estimate constructs by constraining the estimated correlation parameter ($\Phi_{ij}$) between them to 1.0 and then performing a chi-square difference test on the values obtained for the constrained and unconstrained models.

**TABLE 4.5**
**TEST OF DISCRIMINANT VALIDITY**

| Construct Pair | Free Model | | | Constrained Model ($\Phi$=1) | | | $\chi^2$ |
|---|---|---|---|---|---|---|---|
| | $\chi^2$ | Df | Prob. | $\chi^2$ | Df | Prob. | |
| *finance-cust* | 238,370 | 94 | 0,000 | 249,359 | 95 | 0,000 | 10,989 |
| *finance-intbuss* | 244,450 | 108 | 0,000 | 247,746 | 109 | 0,000 | 3,296 |
| *cust-intbuss* | 382,920 | 174 | 0,000 | 394,608 | 175 | 0,000 | 11.688 |

Source : Primary data processed by AMOS 4.0 and SPSS 10.0

There are several results can be examine from table 4.7

1. With $\chi^2$ table (1; 0,05) = 3,8415, the chi-square value between finance-cust construct is above the $\chi^2$ table, therefore we can separate those constructs in our model.
2. With $\chi^2$ table (1; 0,05) = 3,8415, the chi-square value between finance-intbuss is below the chi-square table, but using $\alpha$= 10% the result become $\chi^2$ (1;0,1) =2,7055 and we can separate those constructs.
3. With $\chi^2$ table (1; 0,05)= 3,8415, the chi-square value between cust-intbuss is above the chi square table therefore we can separate those constructs in our model.

## 4.3. Confirmatory Factor Analysis

### 4.3.1. Construct

The following CFA is to test (confirm) a pre-specified relationship. It means that we test our proposed model which one or several variables as predictors to the dependent variable. This study will refer to several standard goodness of fit measures as mentioned in Hair et al (1998).

**TABLE 4.6**
**GOODNESS-OF-FIT MEASURES**

| Measures | Cut-off |
|---|---|
| Probability | ≥ 0.05 |
| GFI | ≥ 0.9 |
| AGFI | ≥ 0.9 |
| TLI | ≥ 0.9 |
| RMSEA | Between 0.05-0.08 |

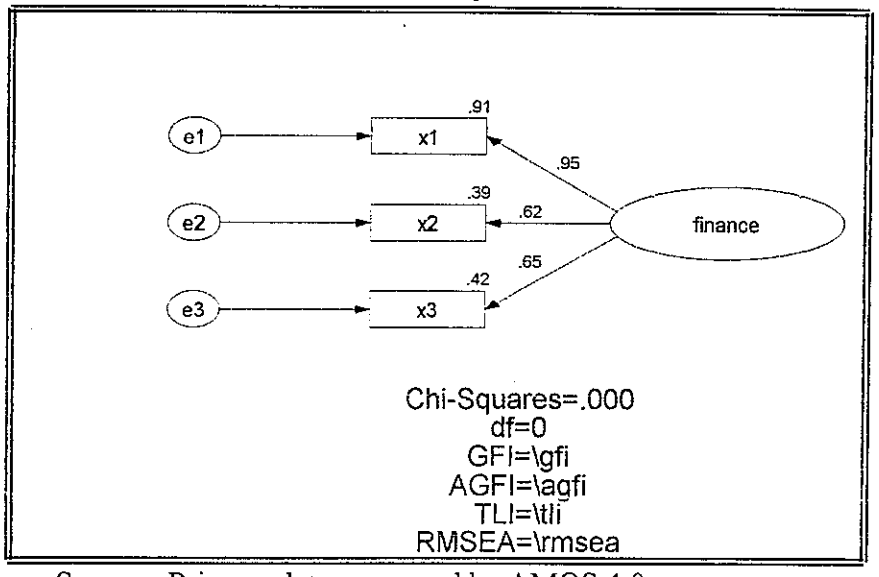
Source : Hair, *et. al* (1998)

#### 4.3.1.1. Financial Perspective

Confirmatory analysis for this perspective shown a poorness of fit indicators. This things could be caused by a small loading factors of each indicators. As stated before, financial perspective has three indicators, thus in further analysis those indicators have different loading factor in confirmatory factor analysis. Loading factor indicates the degree of correspondence between the variable and the

factor, with higher loadings making the variable representative of the factor (hair, et al 1998). According to Ghozali (2004) this study will use 0.50 as the minimum loading factors for each indicator. All indicators in Financial perspective construct have loading factors more than 0,5 therefore those indicators are good enough to explain the financial perspective construct. Conversely, the analysis of goodness-of-fit for this perspective doesn't show the expected result. For most of the goodness-of –fit measures indicates that the construct is not fit, but through loading factor analysis, this construct still have loading factor which will be used in design analysis.

**FIGURE 4.1**
**Confirmatory Factor Analysis**
**Financial Perspective Construct**



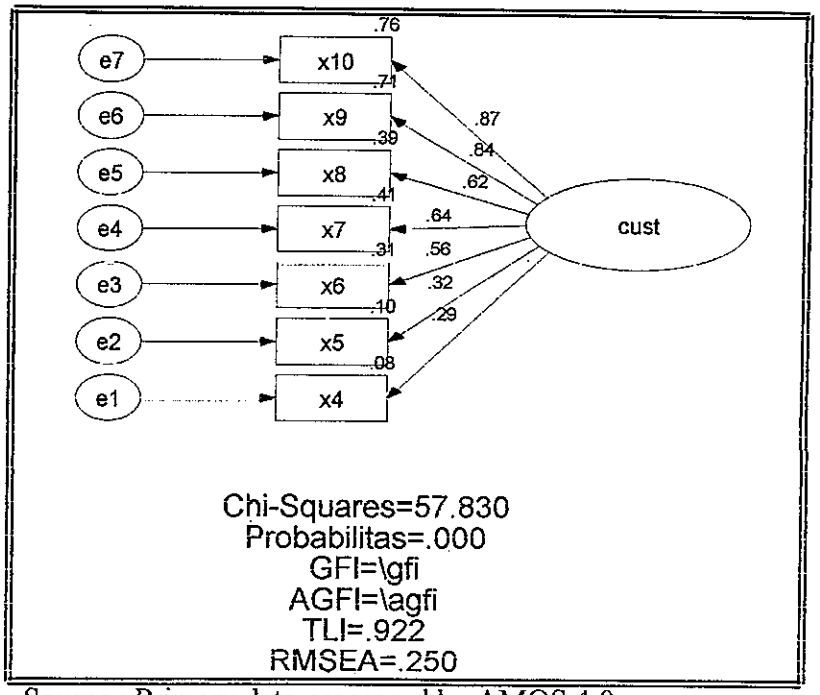

Source : Primary data processed by AMOS 4.0

#### 4.3.1.2. Customer Perspective

Different with financial perspective construct, which all the indicators have loading factors more than 0,5, Customer perspective has two indicators with lower number. Indicators x4, x5, still use in further analysis. This decision is taken according to the result of goodness-of-fit of construct.

**FIGURE 4.2**

Confirmatory Factor Analysis
Customer Perspective Construct




Source : Primary data processed by AMOS 4.0

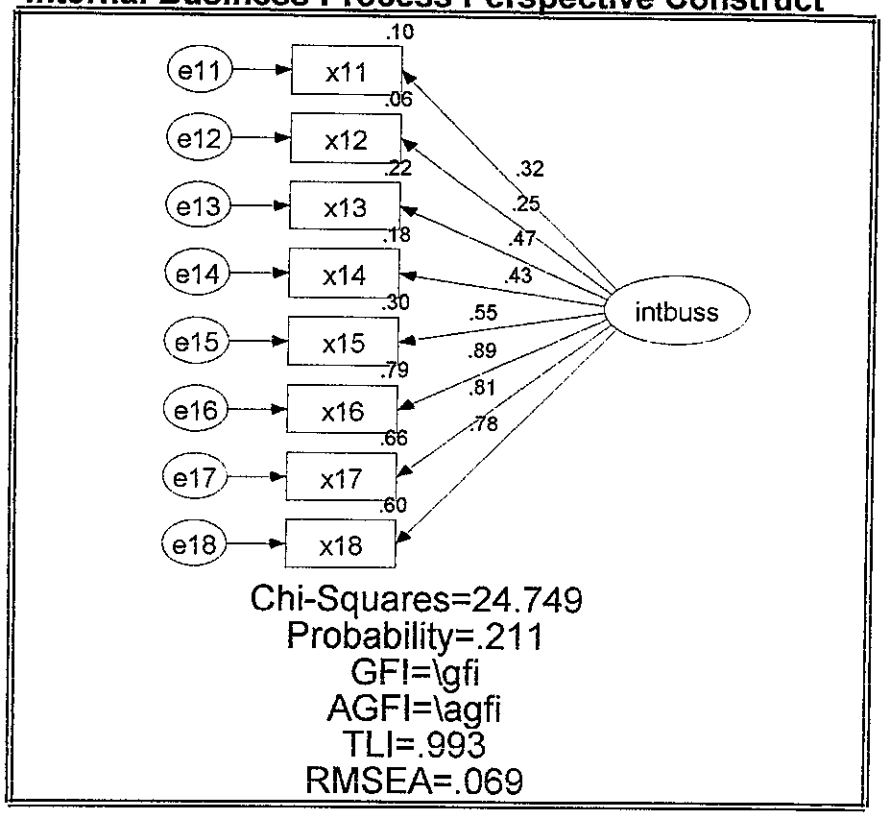
#### 4.3.1.3. Internal Business Process Perspective

Confirmatory analysis for internal business perspective has fulfilled all of the goodness of fit measures. This

constructs has probability 0.211, TLI = 0.993 and RMSEA = 0.069. Therefore all indicators which explained internal business construct can be treated as good predictors.

**FIGURE 4.3**

**Confirmatory Factor Analysis**
**Internal Business Process Perspective Construct**



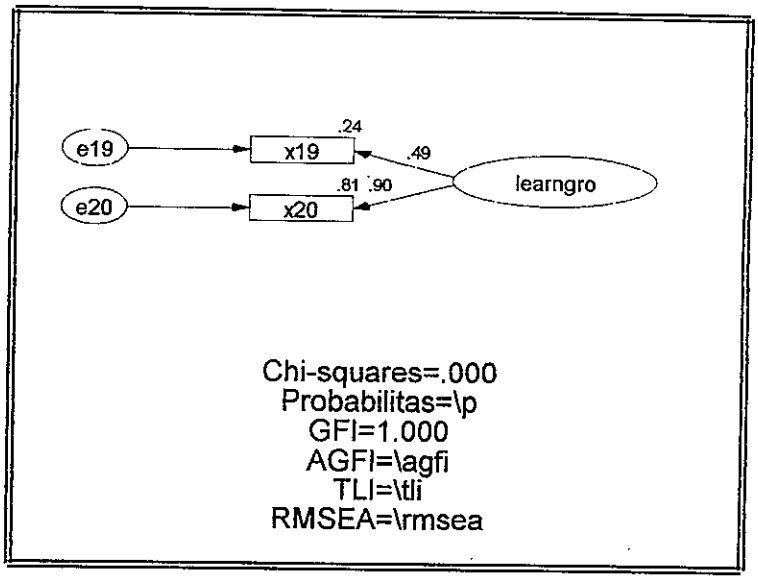

Source : Primary data processed by AMOS 4.0

#### 4.3.1.4.Learning and Growth Perspective

An error occurred while attempting to fit the model. The specified model has negative degrees of freedom. That is, the number of parameters to be estimated exceeds the number of distinct sample moments. For this reason. the model is probably unidentified.

**FIGURE 4.4**

**Confirmatory Factor Analysis**
**Learning and Growth Perspective Construct**



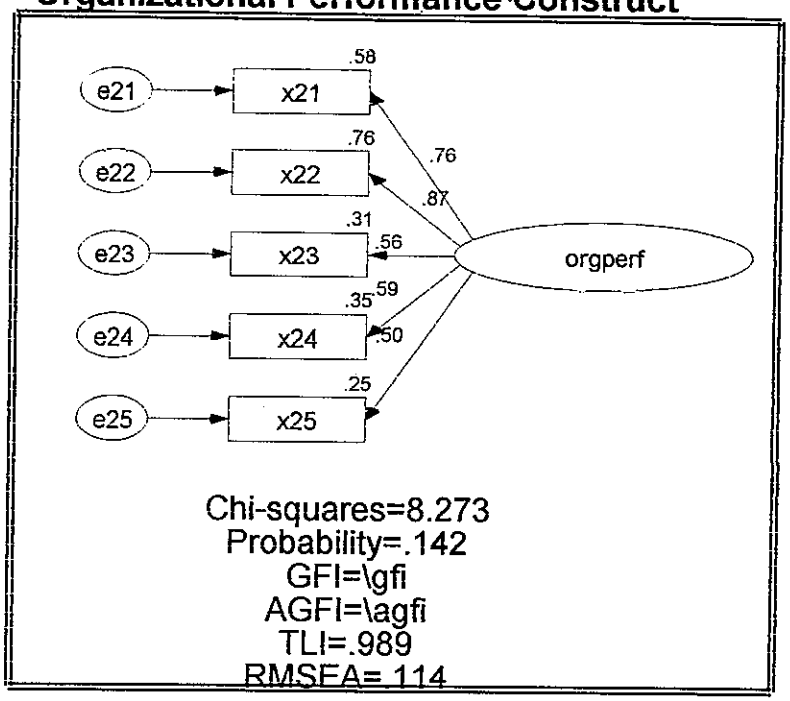

Source : Primary data processed by AMOS 4.0

### 4.3.1.5. Organizational Performance

Organizational performance construct has 5 hypothesized indicators. After confirmatory analysis, we can see that this construct has different result in fulfillment goodness of fit. At least for probability (0,142), TLI (0.989), this construct can fulfilled the goodness-of-fit.

**FIGURE 4.5**

**Confirmatory Factor Analysis**
**Organizational Performance Construct**

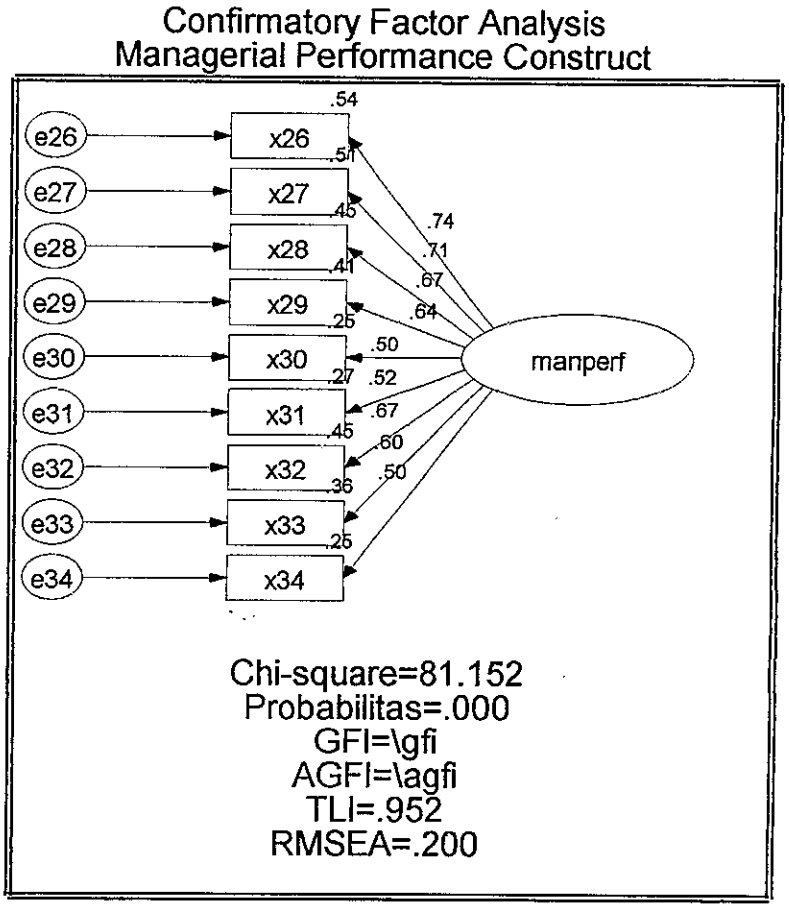



Source : Primary data processed by AMOS 4.0

#### 4.3.1.6. Managerial Performance

From the figure below, it is clearly stated that managerial performance there is no modification, especially according to the result of its goodness of fit. All indicators will be included in further analysis related with CFA analysis. Moreover, the result shows a better goodness of fit for most of the measures.

**FIGURE 4.6**




Source : Primary data processed by AMOS 4.0

### 4.3.2. Construct Reliability and Variance Extracted

Construct reliability indicates whether indicators could represents the constructs (with recommended value 0.70). Variance extracted measure is amount of "shared" or common variance among the indicators or manifest variables for a construct. Higher values represent a greater degree of shared representation of the indicators with the construct. From the following table, we can see that all the constructs have construct reliability value more than 0.70.

**TABLE 4.7**
**TEST OF CONSTRUCT RELIABILITY AND VARIANCE EXTRACTED**

| Construct | Construct Reliability | Variance Extracted |
|---|---|---|
| *Financial* | 0,7924 | 0,5698 |
| *Customer* | 0,8015 | 0,3938 |
| *Internal Business* | 0,7997 | 0,3662 |
| *Organizational Performance* | 0,7961 | 0,4492 |
| *Managerial Performance* | 0,8482 | 0,3877 |

Source : Primary data processed by AMOS 4.0

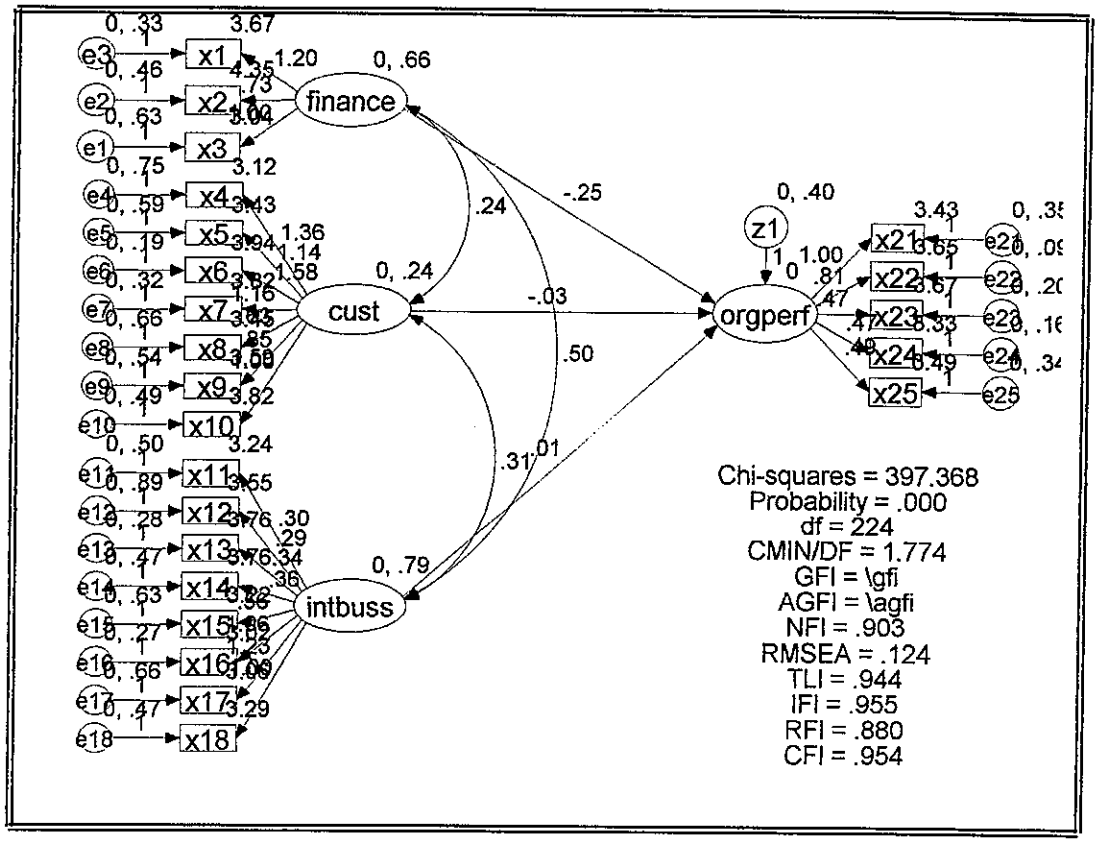
## 4.4. Full Structural Equation Modeling Analysis

After we conduct confirmatory factor analysis to find out the goodness of fit for each construct, then we should analysis our model in a full structural model. As we noted earlier, this study have three endogenous variables and two exogenous variable. Figures below will explain the relationship and the effect among those variables.

Figure 4.7 draw the structural equation modeling between financial, customer and internal business process perspective to organizational performance. As a model, this structural model has fulfilled the goodness of fit criteria where most of the fit measures lies above 0.9 (TLI, IFI, CFI).

**FIGURE 4.7**

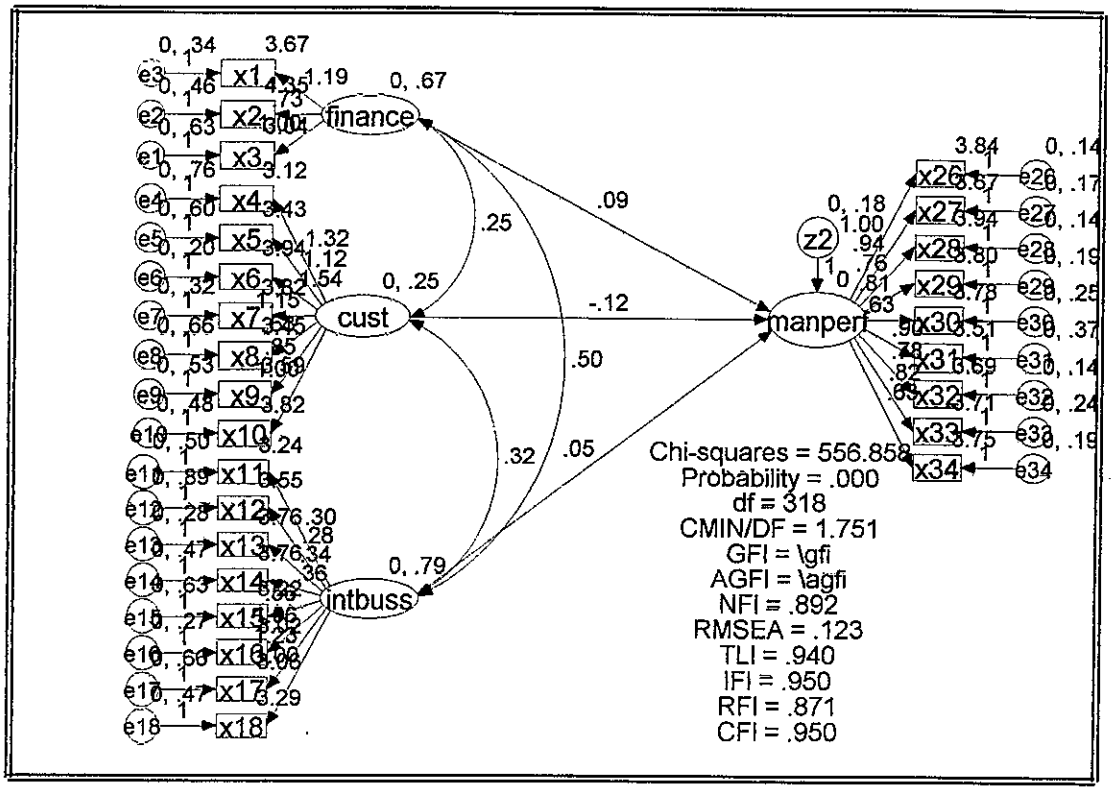
**Structural Equation Model between BSC Usage and Organizational Performance**




Source : Primary data processed by AMOS 4.0

The result from structural model between multiple measures based performance to managerial performance ( figure 4.8) shows that the model support the goodness of fit assumption which has value of TLI, IFI, CFI for 0.940;0.950;0.950;respectively.

**FIGURE 4.8**
**Structural Equation Model between BSC Usage and Managerial Performance**




Source : Primary data processed by AMOS 4.0

## 4.5. Quality of Data

### 4.5.1. Multicollinearity

Multicollinearity occurs when any single independent variable is highly correlated with a set of other independent variable. Multicollinearity is singularity, in which an independent variable is perfectly predicted (i.e., correlation of 1.0) by another independent variable (or more than one).

**TABLE 4.8**
**TEST OF MULTICOLLINEARITY**

| No | Full Structural Model | Determinant of sample covariance matrix |
|---|---|---|
| 1 | BSC Usage to Organizational Performance | 1.6453e-010 |
| 2 | BSC Usage to Managerial Performance | 8.1169e-015 |

Source : Primary data processed by AMOS 4.0

Output from multicollinearity analysis shows that determinant of sample covariance matrix still far from zero value, thus every construct free from multicollinearity assumption.

### 4.5.2. Normality

The best known of all theoretical probability distributions is the normal distribution, whose bell shaped picture is familiar to anyone with a modicum of statistical knowledge. Degree to which the distribution of the sample data corresponds to a normal distribution (Hair et al.1998).

**TABLE 4.9**
**TEST OF NORMALITY**
**BSC USAGE TO ORGANIZATIONAL PERFORMANCE**

| No | Variable | Min | Max | skew | c.r. | kurtosis | c.r. |
|---|---|---|---|---|---|---|---|
| 1 | X25 | 2.000 | 5.000 | 0.233 | 0.680 | -0.209 | -0.304 |
| 2 | X24 | 3.000 | 5.000 | 1.141 | 3.326 | 0.188 | 0.273 |
| 3 | X23 | 3.000 | 5.000 | 0.026 | 0.077 | -0.734 | -1.071 |
| 4 | X22 | 3.000 | 5.000 | 0.414 | 1.206 | -0.668 | -0.974 |
| 5 | X21 | 1.000 | 5.000 | -0.125 | -0.365 | -0.054 | -0.078 |
| 6 | X11 | 1.000 | 5.000 | -0.420 | -1.223 | 0.287 | 0.419 |
| 7 | X12 | 2.000 | 5.000 | 0.115 | 0.336 | -1.028 | -1.499 |
| 8 | X13 | 2.000 | 5.000 | -0.323 | -0.942 | 0.314 | 0.458 |
| 9 | X14 | 2.000 | 5.000 | -0.124 | -0.362 | -0.390 | -0.568 |
| 10 | X15 | 1.000 | 5.000 | -0.297 | -0.865 | -0.308 | -0.449 |
| 11 | X16 | 1.000 | 5.000 | -0.228 | -0.665 | -0.713 | -1.039 |
| 12 | X17 | 1.000 | 5.000 | -0.013 | -0.039 | -1.245 | -1.815 |
| 13 | X18 | 1.000 | 5.000 | -0.596 | -1.736 | -0.481 | -0.702 |
| 14 | X4 | 1.000 | 5.000 | -0.234 | -0.682 | -0.498 | -0.726 |
| 15 | X5 | 1.000 | 5.000 | -0.817 | -2.382 | 0.5111 | 0.745 |
| 16 | X6 | 1.000 | 5.000 | -1.035 | -3.016 | 1.262 | 1.839 |
| 17 | X7 | 1.000 | 5.000 | -1.000 | -2.914 | 1.826 | 2.661 |
| 18 | X8 | 2.000 | 5.000 | -0.474 | -1.382 | -0.795 | -1.159 |
| 19 | X9 | 1.000 | 5.000 | -0.864 | -2.520 | 0.660 | 0.963 |
| 20 | X10 | 1.000 | 5.000 | -0.965 | -2.813 | 1.305 | 1.902 |
| 21 | X1 | 1.000 | 5.000 | -0.700 | -2.041 | -0.207 | -0.301 |
| 22 | X2 | 1.000 | 5.000 | -2.028 | -5.914 | 4.876 | 7.108 |
| 23 | X3 | 1.000 | 5.000 | -0.637 | -1.858 | -0.596 | -0.868 |
| Multivariate | | | | | | 16.325 | 1.719 |

Source : Primary data processed by AMOS 4.0

The following table is test of noemality between BSC Usage to managerial performance.

**TABLE 4.10**
**TEST OF NORMALITY**
**BSC USAGE TO MANAGERIAL PERFORMANCE**

| No | Variable | Min | Max | Skew | c.r. | kurtosis | c.r. |
|---|---|---|---|---|---|---|---|
| 1 | X34 | 3.000 | 5.000 | -0.238 | -0.695 | -0.352 | -0.513 |
| 2 | X33 | 3.000 | 5.000 | 0.241 | 0.701 | -0.617 | -0.899 |
| 3 | X32 | 3.000 | 5.000 | -0.337 | -0.983 | -0.860 | -1.254 |
| 4 | X31 | 1.000 | 5.000 | -0.189 | -0.551 | 1.443 | 2.104 |
| 5 | X30 | 3.000 | 5.000 | 0.029 | 0.083 | -0.329 | -0.479 |
| 6 | X29 | 3.000 | 5.000 | -0.020 | -0.059 | -0.208 | -0.303 |
| 7 | X28 | 3.000 | 5.000 | -0.113 | -0.329 | 0.896 | 1.306 |
| 8 | X27 | 3.000 | 5.000 | 0.220 | 0.641 | -0.661 | -0.964 |
| 9 | X26 | 3.000 | 5.000 | 0.008 | 0.023 | -0.173 | -0.252 |
| 10 | X11 | 1.000 | 5.000 | -0.420 | -1.223 | 0.287 | 0.419 |
| 11 | X12 | 2.000 | 5.000 | 0.115 | 0.336 | -1.028 | -1.499 |
| 12 | X13 | 2.000 | 5.000 | -0.323 | -0.942 | 0.314 | 0.458 |
| 13 | X14 | 2.000 | 5.000 | -0.124 | -0.362 | -0.390 | -0.568 |
| 14 | X15 | 1.000 | 5.000 | -0.297 | -0.865 | -0.308 | -0.449 |
| 15 | X16 | 1.000 | 5.000 | -0.228 | -0.665 | -0.713 | -1.039 |
| 16 | X17 | 1.000 | 5.000 | -0.013 | -0.039 | -1.245 | -1.815 |
| 17 | X18 | 1.000 | 5.000 | -0.596 | -1.736 | -0.481 | -0.702 |
| 18 | X4 | 1.000 | 5.000 | -0.234 | -0.682 | -0.498 | -0.726 |
| 19 | X5 | 1.000 | 5.000 | -0.817 | -2.382 | 0.511 | 0.745 |
| 20 | X6 | 1.000 | 5.000 | -1.035 | -3.016 | 1.262 | 1.839 |
| 21 | X7 | 1.000 | 5.000 | -1.000 | -2.914 | 1.826 | 2.661 |
| 22 | X8 | 2.000 | 5.000 | -0.474 | -1.382 | -0.795 | -1.159 |
| 23 | X9 | 1.000 | 5.000 | -0.864 | -2.520 | 0.660 | 0.963 |
| 24 | X10 | 1.000 | 5.000 | -0.965 | -2.813 | 1.305 | 1.902 |
| 25 | X1 | 1.000 | 5.000 | -0.700 | -2.041 | -0.207 | -0.301 |
| 26 | X2 | 1.000 | 5.000 | -2.028 | -5.914 | 4.876 | 7.108 |
| 27 | X3 | 1.000 | 5.000 | -0.637 | -1.858 | -0.596 | -0.868 |
| Multivariate | | | | | | 36.31 | 3.276 |

Source : Primary data processed by AMOS 4.0

The above table shows that only customer perspective construct fulfill the normality assumption (below critical value 2,58).

To check the danger impact of the non-normal data, this study held bootstrapping method. Bootstrapping is a versatile method for

evaluating the empirical sampling distribution of parameter estimates. Bootstrapping is accomplished in four basic step.

1. The original sample designated to act as the population for sampling purposes.
2. original sample is resample a specified number of times (could be up to several thousand) to generate a large number of new samples , each a random subset of the original sample.
3. The model is estimated for each new sample and the estimated parameters are saved
4. Final parameter estimates are calculated as the average of parameter estimates across al of the samples.

To check the robustness of the results , 200 bootstraps samples were generated. Mean of the bootstrapped estimates are compared with the estimates obtained by the maximum likelihood to find out robustness of the results. Table 4.11 Provides the result (Regression weight) :

**TABLE 4.11**
**ESTIMATION OF BOOTSTRAP METHOD**

| REGRESSION WEIGHT | | | BOOTSTRAP METHOD | | | | |
|---|---|---|---|---|---|---|---|
| PATH | Estimate | S.E. | S.E. | SE-SE | Mean | Bias | SE-Bias |
| Orgperf←Finance | -0.251 | 0.217 | 0.368 | 0.018 | -0.158 | 0.093 | 0.026 |
| Orgeperf←Cust | -0.031 | 0.349 | 9.923 | 0.496 | 1.167 | 1.198 | 0.702 |
| Orgperf←Intbuss | 0.011 | 0.216 | 0.508 | 0.025 | -0.132 | -0.143 | 0.036 |
| Manperf←Finance | 0.093 | 0.142 | 0.509 | 0.025 | 0.114 | 0.021 | 0.036 |
| Manperf←Cust | -0.120 | 0.228 | 197.288 | 9.864 | 14.175 | 14.295 | 13.950 |
| Manperf←Intbuss | 0.050 | 0.143 | 0.238 | 0.012 | -0.011 | -0.060 | 0.017 |

Source : Primary Data Processed by AMOS 4.01

From the above table, this study assures that the result– because the impact of non-normality- that will be presented in the next section is qualitatively, harmless for the results. The SE gives that bootstrapped estimate of the standard error, which is simply the standard deviation of the parameter estimates computed across the 200 bootstrap samples. This figure should be compared to the approximate standard error estimates obtained by the maximum likelihood to further examine the harmless of this data to the results. Table 4.12 presents the comparison of standard error between the ML and Bootstrapped method

**TABLE 4.12**
**COMPARISON OF BOOTSTRAP-MAXIMUM LIKELIHOOD**

| PATH | SE-ML | SE-BOOTSTRAP | CHANGE |
|---|---|---|---|
| Orgperf←Finance | 0.217 | 0.368 | 0.151 |
| Orgperf←Cust | 0.349 | 9.923 | 9.574 |
| Orgperf←Intbuss | 0.216 | 0.508 | 0.292 |
| Manperf←Finance | 0.142 | 0.509 | 0.367 |
| Manperf←Cust | 0.228 | 197.288 | 197.06 |
| Manperf←Intbuss | 0.143 | 0.238 | 0.095 |

Source : Primary data processed by AMOS 4.01

The difference between standard error of ML and bootstrapping method seems pretty frightening. Although many of the bootstrap standard errors are quite close to the approximate standard errors obtained originally by the maximum likelihood, some of them are not. For example, while the Manperf←Cust and Orgperf ←Cust paths show the far differences (197.06 and 9.574 respectively) between ML and Bootstrap, but the rest of them shows the contrary results. It means that the parameter estimates are significantly biased. However , we can not draw final conclusion that the data is non-normal and insist that the study is not " fit enough" to examined only based on this estimation . The test still continue.

Back to table 4.11, SE-SE gives the approximate standard error of the bootstrapped standard error. These entries are small through out the

column , which means that the error of the standard error are small (ranges from 0.012 to 9.864)

The column labels Bias, give the difference between the bootstrapped mean and original estimate. If the average estimate of the bootstrap sample is higher than the original sample, then the bias will be positive , and vice versa. Still from table 4.11, we can find out that all paths showed the harmless of the non-normality data to the results. However, this bias seems un-danger. The following table shows the results of the standardized regression weight for bootstrapped model.

**TABLE 4.13**
**STANDARDIZED REGRESSION WEIGHT**

| **Standardized Regression Weights** | | **Bootstrap** | | | | |
|---|---|---|---|---|---|---|
| | | **SE** | **SE-SE** | **Mean** | **Bias** | **SE-Bias** |
| Orgperf←Finance | -0.306 | 0.419 | 0.021 | -0.219 | 0.087 | 0.030 |
| Orgperf←Cust | -0.023 | 0.455 | 0.023 | 0.039 | 0.062 | 0.032 |
| Orgperf←Intbuss | 0.015 | 0.601 | 0.030 | -0.150 | -0.165 | 0.043 |
| Manperf←Finance | 0.174 | 0.582 | 0.029 | 0.198 | 0.024 | 0.041 |
| Manperf←Cust | -0.139 | 0.611 | 0.031 | -0.072 | 0.067 | 0.043 |
| Manperf←Intbuss | 0.102 | 0.520 | 0.026 | -0.028 | -0.130 | 0.037 |

Source : Primary data processed by AMOS 4.01

As stated in table 4.13, all the biases in the bootstrapped methods are small ranges from –0.165 to 0.087 (recall the cut point is 0.05). Hereafter,

this study strongly recommends that the non-normality data showed above is harmless for the results reported.

### 4.5.3. Outliers

Outliers is defined as an observation that is substantially different from the other observation (i.e. has an extreme value). At issue is its representativeness of the population. (Hair et al,1998)

The final diagnostic method is to asses multivariate outliers with the Mahalanobis $D^2$ measure. This evaluates the position of each observation compared with the center of all observation compared with the center of all observations on a set of variables. In this case, all the metric variables were used for the evaluation of observation. As noted earlier, the statistical tests for significance with this measure should be very conservative (exceeding 0.001). Small numbers in the p1 column are to be expected. Small numbers in the p2 column, on the other hand, indicate observations that are improbably far from the centroid under the hypothesis of normality. For the data used in this study, according to Ghozali (2004) outliers can be detected by comparing between mahalanobis distance value and Chi-squares at Degree of freedom 34 (66.25). From the model none of the case have mahalanobis distance above 66.25, thus we can conclude that there is no multivariate outliers.

## 4.6. Hypotheses Testing Results

This section dealing with the objective of this study which is determining the Balanced scorecard's weight. According to that, this study propose two hypotheses, the first one is there is a positively correlated between BSC usage and organizational performance, and the second hypothesis is there is a positively correlated between BSC usage with managerial performance. Thus, this study is attempting to analyze the correlation between BSC usage with two terminology of performance, then through structural modeling, this study is also able to analyze the effect among indicators which designing weight will be based on.

**TABLE 4.14**
**RESULTS OF STRUCTURAL EQUATIONS MODELING**
**BSC USAGE TO ORGANIZATIONAL PERFORMANCE**

| Parameter | Estimate | P | Conclusion |
|---|---|---|---|
| *Hypothesis 1* | | | |
| Financial Perspective → Organizational Perf. | -0.251 | 0.249 | H1 not supported |
| Customer Perspective → Organizational Perf. | -0.031 | 0.929 | H1 not supported |
| Int. Business Process Persp. → Organizational Perf. | 0.011 | 0.959 | H1 supported |
| *Goodness-of-fit statistics* | | | |
| Chi-Square | 397.368 | | |
| Probability | 0.000 | | |
| df | 224 | | |
| CMIN/DF | 1.774 | | |
| NFI | 0.903 | | |
| RMSEA | 0.124 | | |
| TLI | 0.944 | | |
| IFI | 0.955 | | |
| RFI | 0.880 | | |
| CFI | 0.954 | | |

Source : Primary data processed by AMOS 4.0

The following table presented the results in SEM between BSC usage and managerial performance.

**TABLE 4.15**
**RESULTS OF STRUCTURAL EQUATIONS MODELING**
**BSC USAGE TO MANAGERIAL PERFORMANCE**

| Parameter | Estimate | P | Conclusion |
|---|---|---|---|
| *Hypothesis 1* | | | |
| Financial Perspective → Managerial Perf. | 0.093 | 0.513 | H2 supported |
| Customer Perspective → Managerial Perf. | -0.120 | 0.599 | H2 not supported |
| Int. Business Process Persp. → Managerial Perf. | 0.050 | 0.729 | H2 supported |
| *Goodness-of-fit statistics* | | | |
| Chi-Square | 556.858 | | |
| Probability | 0.000 | | |
| df | 318 | | |
| CMIN/DF | 1.751 | | |
| NFI | 0.892 | | |
| RMSEA | 0.123 | | |
| TLI | 0.940 | | |
| IFI | 0.950 | | |
| RFI | 0.871 | | |
| CFI | 0.950 | | |

Source : Primary data processed by AMOS 4.0

## 4.7. Discussion

The choice of using structural equation model in this study is solely based on the ease in determining the influenced indicator and measuring the influence effect. From the above figure, we can notice that learning and growth perspective doesn't fit in confirmatory analysis phase, thus we excluded this construct in further analysis. The remain construct is also have some modification , specifically in indicator selection to fulfill goodness of fit requirements.

Structural Equation Model for organizational and managerial performance showed that several perspective have positively correlation with performance. For detail analysis, the following analysis below should be considered.

Hypothesis 1 which stated that BSC usage in each perspectives (financial, customer, internal-business process and leaning and growth) are positively associated with managerial performance. This hypothesis was not confirmed for financial and customer perspective with a path parameter estimate that was negative (-0.251 and –0.031, respectively) and statistically not significant. In the other hand, H1 is supported by internal business perspective which positive parameter with value 0.011.

Hypothesis 2 which stated that BSC usage in each perspectives (financial, customer, internal-business process and leaning and growth) are positively correlated with managerial performance is supported enough by the findings. The regression weight for financial and internal business perspective indicates a positive association between those perspective to managerial performance ( 0.093 and 0.050) Only customer perspective has negative association to managerial performance.

## 4.8. Designing Balanced Scorecard's Weight

Based on results , this study will design the balanced scorecard weight through according to loading factor each performance indicator. As we already known that loading factor is also represents as regression weight. In this case the indicator performance as observable variables and BSC perspectives as latent variables. The higher loading factor indicates that indicator has more relation to perspective than others. Table 4.16 below summarize lading factor which has been shown in SEM (figure 4.7 and 4.8).

**TABLE 4.16**
**DESIGNING BSC WEIGHT**

| *Perspectives* | *Performance Indicators* | *Loading Factor to Organizational Performance* | *Weight Priorities* | *Loading factor to Managerial Performance* | *Weight Priorities* |
|---|---|---|---|---|---|
| *Financial Perspective* | Return-on-Investment (x1) | 0.863 | 1 | 0.858 | 1 |
| | Revenue Growth (x2) | 0.657 | 3 | 0.661 | 3 |
| | Cost per Customer (x3) | 0.717 | 2 | 0.719 | 2 |
| *Customer Perspective* | Revenue per Customer (x4) | 0.612 | 3 | 0.606 | 3 |
| | Customer Retention Rate (x5) | 0.593 | 4 | 0.588 | 4 |
| | New Customer Acquisition Rate (x6) | 0.875 | 1 | 0.868 | 1 |
| | Market Share (x7) | 0.710 | 2 | 0.717 | 2 |
| | Number of Customer Complaints (x8) | 0.359 | 7 | 0.367 | 7 |
| | Length of Cycle time in Providing service (x9) | 0.498 | 6 | 0.509 | 6 |
| | Customer response time (x10) | 0.577 | 5 | 0.588 | 5 |
| *Internal-Business Process* | Number of New Product Launches (x11) | 0.356 | 7 | 0.358 | 7 |
| | Service Error Rate (x12) | 0.262 | 8 | 0.259 | 8 |
| | Request Fulfillment Time (x13) | 0.495 | 5 | 0.497 | 5 |
| | Internal Customer Satisfaction (x14) | 0.422 | 6 | 0.424 | 6 |
| | New Product Revenue (x15) | 0.534 | 4 | 0.534 | 4 |
| | New Revenue per sales Person (x16) | 0.876 | 1 | 0.873 | 1 |
| | Selling Contracts per sales person (x17) | 0.802 | 2 | 0.804 | 2 |
| | Profitability per customer (x18) | 0.791 | 3 | 0.791 | 3 |

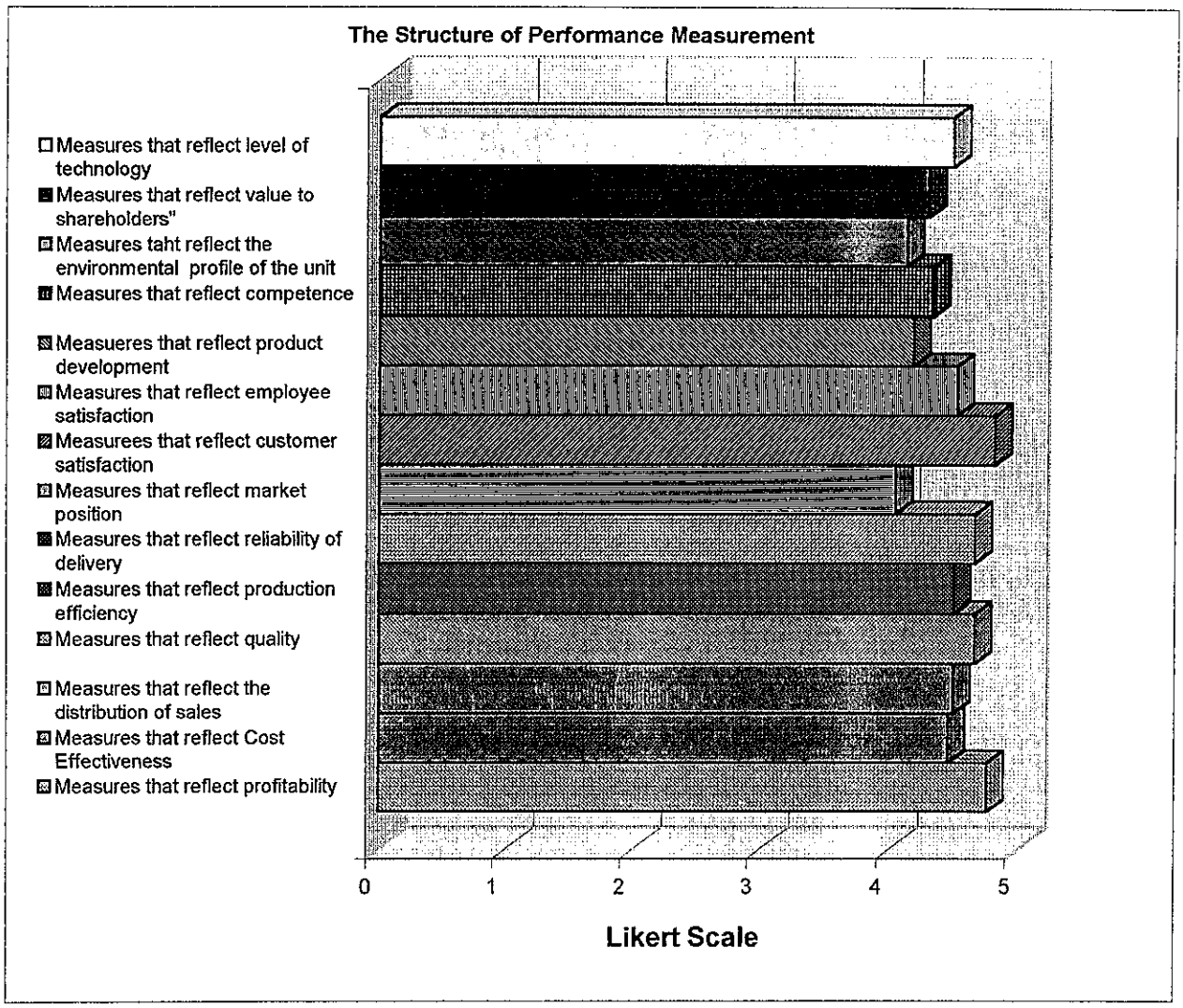
Source : Primary data processed by AMOS 4.0

From the table above this study has already made some suggestion in designing balanced scorecard weight. Usually in practical area, decision in determining the appropriate weight in BSC solely based on expert judgment or using Delphi techniques. Using Structural Equation Model, the result infer that the priorities of weight between performance perspective and performance (whether organizational or managerial) have the same priorities. Thus, those indicators as managers perceived have the same influence in their performance as an individual or as a overall company's performance. Table 4.12 will be used by Bank Syariah Mandiri in determining the best percentage in their personal appraisal Sheet for branch managers across the country and also as an input in focusing the best corporate performance indicator.

## 4.9. The Structure of Performance Measurement

This study is also attempting to explore the ideal performance measurement as a recommendation. This objective will be delivered through several answers related with the structure of performance measurement which is preferred to be implemented in Bank Syariah Mandiri. 53 Managers were asked according to this research and the following graph will draw the result.

**FIGURE 4.9**
**THE STRUCTURE OF PERFORMANCE MEASUREMENT**




Source : Primary data processed, 2004

Consistent with SEM analysis, figure 4.9 explained that managers still tends to prioritizing in measures that reflect profitability as the main indicators in their performance appraisal. Moreover, the interesting thing from that figure is the second highest indicator is the measures that reflect customer satisfaction and the third and fourth are measures that reflect quality and delivery. Therefore, the BSC assumption

is true, whereas there is a changing paradigm in performance measurement from financial based to multi-perspective based.

# CHAPTER V

# CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Conclusions

The development of performance measurement from financial based to multi-perspective measurement has been captured by Balanced Scorecard through four perspective. BSC as one of management accounting tool reflect the balanced measurement between financial and non financial, quantitative and qualitative and also between process and result.

One of the main problem in implementing BSC is how to set up the best balanced which is reflected by weight determining. Usually, weights for every perspective will be based on expert judgment and delphi technique. Those methods seem to rely on the normative way (what should be) not the positive way (what's the reality). Those techniques is also tends to focus on the small group of experts which is not always represent the whole employees.

Therefore, this study is attempted to design weight in another approach. This study related performance indicators in BSC perspectives with two terminologies of performance (organizational and managerial). The results of this study indicates that there is only one positively relationship between BSC Usage and organizational performance which support hypothesis 1 (internal-business perspective), but in the same time the model fulfilled the goodness-of-fit assumption. Therefore the analysis of the regression weight of each indicator as the basis in designing BSC weight still done. In the managerial performance case, there is only one perspective which support hypothesis 2 (financial and internal-business perspective).

One of the important part in this study is the description of the structure of performance measurement. The result told us that the profitability measures could not stand alone again, because customer satisfaction , quality and delivery measures already took the important measure in manager's mind.

## 5.2. Recommendations

Consistent with the objective of this study, this study is trying to give a significant contribution in determining the best weight in BSC design. According to the results, both of performance have the same indicators priorities. For financial perspective, bank should prioritize return on investment first, then revenue growth and cost per customer. For the customer perspective bank should put the highest weight on new customer acquisition, market share, revenue per customer, customer retention rate, customer response time, length of cycle time in providing service, and number of customer complaints. The last, in internal-business perspective, the priorities were constructed as new revenue per sales person, selling contracts per sales person, profitability per customer, new product revenue, request fulfillment time, internal customer satisfaction, number of new product launches, and service error rate. These results will allowed syariah bank to have a bright vision in deciding which performance measures should prioritize first. This Study is also contributes in analyzing those measures with organizational and managerial performance.

## 5.3. Limitations of the Study

There are several limitations in this study. Balanced scorecard is also known as strategic management tools besides management accounting tools. This study

seems to focus only in management accounting perspectives without any explanation from the strategic management view. Another limitation is the scope of the study only for one company and the usable respondent as not much if the study held to analysis through out the country. Therefore, the further study should extent the scope of the research and the amount of the respondent. The further research is also has an opportunity to held a research to analyze the effectiveness of BSC for companies which has been implemented.

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# Designing The Balanced Scorecard Weight on Syariah Bank Branches Through Performance Measurement and Efficiency Analysis

## QUESTIONNAIRE

**INSTRUCTIONS**

All your answers to this questionnaire will be kept strictly confidential.

It is important that you answer the questions as accurately as you can. The success of the study depends upon the frankness and care with which you answer these questions. There is no right or wrong answer; it is your opinion that is important.

Most of the questions can be answered by placing ticks next to or circling the appropriate answers. Please read each question carefully and select the answer that best fits your case. If you do not find an exact answer that fits your case, tick the one that comes closest to it. If you feel that the answer ticked is inadequate in some way please add a comment to this effect.

## SECTION A: COMPANY CHARACTERISTICS

**Q1:** Please specify the following for your organisation (approximate figures).

a. Annual revenues ($'000):

2000_____2002_____

2001_____2003_____

b. Total gross assets ($'000):

2000_____2002_____

2001_____2003_____

c. Net profit before tax ($'000): 2000_____2002_____

2001_____2003_____

d. Total number of full-time employees at 30th May,2004

_____

**Q2:** Please indicate how many banking products in your branch

_____

*Hoque and James (2000)*

## SECTION B: Structure of Performance Measurement

**Q1: The Structure of Performance Measurement**

Please indicate your choice about the type of instrument that will be implemented in your company by circling one of the numbers on the following seven-point scale. 1 indicates that the measures are less important to your firm and 5 indicates that the measures is the very important to your firm.

**1. Measures that reflect profitability**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**2. Measures that reflect cost effectiveness**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**3. Measures that reflect the distribution of sales**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**4. Measures that reflect quality**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**5. Measures that reflect production efficiency**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**6. Measures that reflect reliability of delivery**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**7. Measures that reflect market position**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**8. Measures that reflect customer satisfaction**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**9. Measures that reflect employee satisfaction**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**10. Measures that reflect product development**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**11. Measures that reflect competence**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**12. Measures that reflect the environmental profile of the unit**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**13. Measures that reflect value to shareholders**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

**14. Measures that reflect process development/level of technology**

| Less Important | | | | Very Important |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

*Kald and Nilsson (2000)*

## SECTION C: PERFORMANCE INDICATORS

**Q1:** Listed below are a number of indicators that are frequently used to monitor performance of a firm. Please rate the extent by circling the appropriate number to which **each** of the following indicators is currently used in your organisation.

(Five-point scale, 1 = not at all; 2 = to a very little extent; 3 = to some extent; 4 = to a considerable extent; and 5 = to a great extent.)

**A. Financial Indicators**

| | | | | | |
|---|---|---|---|---|---|
| Operating Income | 1 | 2 | 3 | 4 | 5 |
| Sales Growth | 1 | 2 | 3 | 4 | 5 |
| Return-on-investment | 1 | 2 | 3 | 4 | 5 |

**B. Efficiency and quality indicators**

| | | | | | |
|---|---|---|---|---|---|
| Rate of material scrap loss | 1 | 2 | 3 | 4 | 5 |
| Labour efficiency variance | 1 | 2 | 3 | 4 | 5 |
| Material efficiency variance | 1 | 2 | 3 | 4 | 5 |
| Manufacturing lead-time | 1 | 2 | 3 | 4 | 5 |
| Ratio of good output to total output | 1 | 2 | 3 | 4 | 5 |
| Percentage defective products shipped | 1 | 2 | 3 | 4 | 5 |

**C. Innovation Indicators**

| | | | | | |
|---|---|---|---|---|---|
| Number of new patents | 1 | 2 | 3 | 4 | 5 |
| Number of new product launches | 1 | 2 | 3 | 4 | 5 |
| Time-to-market new products | 1 | 2 | 3 | 4 | 5 |

**D. Customer Satisfaction indicators**

| | | | | | |
|---|---|---|---|---|---|
| Market share | 1 | 2 | 3 | 4 | 5 |
| On-time delivery | 1 | 2 | 3 | 4 | 5 |
| Number of customer complaints | 1 | 2 | 3 | 4 | 5 |
| Survey of customer satisfaction | 1 | 2 | 3 | 4 | 5 |
| Percentage of shipments returned due to poor quality | 1 | 2 | 3 | 4 | 5 |
| Length of cycle time from order to delivery | 1 | 2 | 3 | 4 | 5 |
| Warranty repair cost | 1 | 2 | 3 | 4 | 5 |
| Customer response time | 1 | 2 | 3 | 4 | 5 |

*Hoque and James (2000)*

## SECTION D: ORGANISATIONAL PERFORMANCE

**Q1:** Please indicate your organisation's overall performance on the following areas relative to that of competitors by rating it on a scale of 1 to 5, where 1 = well below average, 2 = just under average, 3 = average, 4 = just above average, and 5 = well above average.

| | Well below average | | | | Well above average |
|---|---|---|---|---|---|
| Rate of return on investment | 1 | 2 | 3 | 4 | 5 |
| Margin on sales | 1 | 2 | 3 | 4 | 5 |
| Customer satisfaction | 1 | 2 | 3 | 4 | 5 |
| Product quality | 1 | 2 | 3 | 4 | 5 |
| Capacity utilisation | 1 | 2 | 3 | 4 | 5 |

*Hoque and James (2000)*

## SECTION D: MANAGERIAL PERFORMANCE

**QI:** Rate your performances a manager on the following tasks. (response anchors :1 = below average performance, 7 = above average performance.)

1. Planning
   1 2 3 4 5 6 7
2. Investigating
   1 2 3 4 5 6 7
3. Coordinating
   1 2 3 4 5 6 7
4. Evaluating
   1 2 3 4 5 6 7
5. Supervising
   1 2 3 4 5 6 7
6. Staffing
   1 2 3 4 5 6 7
7. Negotiating
   1 2 3 4 5 6 7
8. Representing
   1 2 3 4 5 6 7
9. Rate your overall performance
   1 2 3 4 5 6 7

*Mahoney,et.al (1965)*

## SECTION E: PERSONAL

Your Company (optional):_____

Your Name (optional):_____

Your Position:_____

Length of Position:_____

Age (optional):_____

**THANK YOU FOR YOUR PARTICIPATION**