

The Effects of Participation in the Development of Performance Measures on Managerial Performance with Fairness Perception as a Mediating Variable: (An Empirical Study of Hospital Industry in Central Java, Indonesia)

Y Anni Aryani¹ and Puput Rahmawati²

The objective of this research is to provide descriptive evidence of the performance measures (financial and non-financial) used in the hospital industry. This research also provides empirical evidence on the effect participation has in the development of performance measures on managerial performance with fairness perception as a mediating variable. A survey research method is employed to empirically test the hypotheses developed in this study. The survey for this study is carried out on the hospital industry in Central Java, Indonesia with the unit's manager as the unit of analysis. The hospitals located in some districts of Central Java are used as the sampling frame. Statistical analysis methods and path analysis are used to analyse data. This study found that participation in the development of performance measures used in the performance evaluation process positively influences the managerial performance. Participation was also found to positively influence the fairness perception of the performance measures that eventually influence managerial performance. Hence, this study demonstrated that fairness perception moderated the relationship between participation in the development of performance measures and the managerial performance in hospital industry in Central Java, Indonesia. This study also showed that financial measures were perceived fairer than non-financial measures in the performance evaluation process.

Field of Research: Managerial accounting, Hospital industry

1. Introduction

Companies faced with globalization pressures require a new management strategic plan to sustain its business organization and to adjust with the dynamic business environment. Such a strategic plan requires new performance measurement systems (see, for example: Olve et al., 1999; Bourne et al., 2000; Blenkinsop and Burns, 1992; Burgess et al., 2007; Olsen et al., 2007) to ensure the effectiveness of a new strategy. According to Suprpto et al. (2009), the existence of performance measurement systems

¹ Dr Y Anni Aryani, Accounting Department, Economics Faculty, Universitas Sebelas Maret (UNS), Surakarta – Indonesia, email: anni.aryani@live.vu.edu.au

² Puput Rahmawati, Accounting Department, Economics Faculty, Universitas Sebelas Maret (UNS), Surakarta – Indonesia, email: puput.rahmawati@gmail.com

Aryani & Rahmawati

enable an organization to plan, measure, and control its performance based on its implemented strategy.

A hospital is an institution that provides health services. In Indonesia, hospitals are regulated by Act No. 44 of 2009 which is based on 'Pancasila' (Indonesia's fundamental ideology). This ideology is a social function based on values, ethics and professionalism, usefulness, fairness, equality and anti discrimination, equal distribution, patient's protection and safetyⁱ. However, the Health Minister Regulations No. 84 of 1990 states that a hospital can be managed as a business (Martanti, 2003). As a result, investors started to manage hospitals based on a commercial business. Hence, hospital management requires accountability and transparency. Moreover, Indonesia's Health Department states that hospitals must be managed with quality assurance approach to maximize its resources (Romel, 2006).

Furthermore, Act No. 44 of 2009 (sections 33-40) indicate that each hospital must has an effective, efficient, and accountable organization. Similar to a commercial company, a hospital needs separation between the owner and management, the existence of good governance, and face audits for its performance. Hence, the use of performance measurements can help increase the quality of decision-making and accountability (Prasetyono and Kompyurini, 2007).

Like most public sector organizations, a hospital's key goals are minimizing cost and maximizing service. Such goals require an appropriate performance measurement system (Mark, 1993; Prasetyono and Kompyurini, 2007; Pillay, 2008; Suprpto et al., 2009) aimed to assist the manager in evaluating the achievement of the strategy through financial performance measures and non-financial performance measures (Mardiasmo, 2002).

Since performance measurement is always related to the achievement of an organization's goals and objectives, this indicates that management has to control and monitor its organization to achieve its vision through a successful strategy implementation (Aidemark, 2001). This is because performance measurements tend to force someone to take an action that may not be in accordance with the overall organizational strategyⁱⁱ, even though these measures are already well formulated and communicated (Oliveira, 2001). Furthermore, Aryani (2009) found that an inappropriate performance measurement development process can cause an unfairness perception for the division's managerⁱⁱⁱ.

Fairness perception can be influenced by many factors such as "voice" which is the ability to argue an information that can be used for decision-making (Lind et al., 1990; Korsgaard and Roberson, 1995). In this case, voice has a role as an indirect control process when direct control cannot be performed (Korsgaard and Roberson, 1995). Furthermore, Lind et al. (1990) examined the effect of instrumental and non-instrumental participation on distributive and procedural fairness and found that pre and post-decision voice caused higher fairness than the absence of voice. Within this, pre-decision voice was found to be fairer than post-decision voice.

Aryani & Rahmawati

Most of the prior literature on participation falls into the budgeting context (Milani, 1975; Brownell and Mc. Innes, 1986; Mia, 1989; Dunk, 1990; Brownell and Dunk, 1991; Kren, 1992; Lindquist, 1995; Lau and Tan, 1998). Participative budgeting is a managerial approach which holds that an increase in organization effectiveness can occur via an individual increase of each organization member's performance (job satisfaction). It can also occur via direct managerial performance (Brownell, 1979 quoted in Mia, 1989); or mediated by other variables such as motivation (Hofstede, 2008). Aryani (2009) also found that participation on the development of performance measures (financial and non-financial) significantly reduced the bias of the performance measures through procedural fairness perception.

In Indonesia, much research has occurred on budgeting participation on managerial performance from the perspective of government sector (Hamzah, 2008), education sector (Yuliati, 2009), and health sector (Nimphar, 2009; Puspaningtyas, 2009). However, the participation on the development of performance measures on managerial performance with fairness perception as a mediating variable in hospital industry is scarce. Therefore, the research question arise in this study: what is the effect of participation in the development of performance measures on managerial performance with fairness perception as mediating variable? Consequently, the aims of this current research are firstly to describe performance measures used in the hospital industry; and secondly, to empirically examine the relationship between those three variables – participation, fairness perception, and managerial performance – on hospital organization in the area of Surakarta County, Central Java, Indonesia.

The remainder of the paper is structured as follows: section two discusses the literature review along with the hypotheses development. The research method and results discussion are presented in section three and four respectively. Finally, section five presents the conclusions along with the implication of the study, the limitations, and suggestions for further research.

2. Literature Review

2.1. *Performance Measures in Hospital*

As discussed in the introduction section, traditional performance measurement systems that only focused on financial performance measures have been criticized for their limitations. In response, many scholars tried to develop new performance measurement systems that can solve the limitations of the traditional systems (see, for example, Kaplan and Norton, 1992; Otley, 2001). The BSC has been used around the world (Malina and Selto, 2001) and is very popular both in the private and public sector (Averson, 1998). The BSC combines financial and non-financial performance measures that link short term operational control with long term vision and strategic organization (Kaplan and Norton, 1992).

Financial performance measures are lagging indicators since they show the historical performance, while non-financial measures are considered leading

Aryani & Rahmawati

indicators that explain what should presently be done to create value adding in the future (Simons, 2000). For hospitals, specific indicators can be used to measure performance although this varies between public and private hospitals. In Indonesia, public hospitals are owned by governance, whose performance measures are regulated by law such as Act No. 23 of 1992 (health) Act No. 29 of 2004 (medicine practice), governance regulation No. 32 of 1996 (health's staff) etc. Some of these acts or regulations are mandatory for public hospitals yet remain voluntary for private hospitals. Thus, private hospitals have some freedom to develop their own performance measures (both financial and non-financial). Despite the disparities between the two hospital types, the Health Minister's Decision Letter No. 1457 of 2003 explicitly outlines minimum health service and quality standards for all hospitals.

In hospital (health care), the implementation of BSC is still in the development phase. The literature in this area however is vast (see: Griffith, 1994; Zelman et al., 2003; Backer and Pink, 1995; Steward and Bestor, 2000; Oliveira, 2001; Griffith et al., 2002; Inamdar et al., 2002; Watkins, 2003; Zelman et al., 2003; Woodward et al., 2004; Silvia and Prochnik, 2005; Gao and Gurd, 2006; Romel, 2006; Parkinson et al., 2007; Prasetyono and Kompyurini, 2007; Wicks et al., 2007; Pillay, 2008; Chu et al., 2009; and Suprpto et al., 2009). Furthermore, Zelman et al. (2003) argue that the BSC has been adopted across many types of health care organizations, both private and public^{iv}.

Some of those studies show the success of BSC implementation, such as Stewart and Bestor (2000) and Oliveira (2001). However, others (see for example: Chan and Ho, 2000; Inamdar et al., 2002) fail to prove the success of BSC implementation in the health care industry. It can be inferred therefore that the implementation of BSC is not an easy task as evidenced by Neely et al. (2000) who claim that the level of failure is about 70%.

The possible reason for this high failure rate is the lack of ability to identify metric or measures of success factors, in implementing the BSC. Due to the unique measures in hospitals the adoption of BSC faces many challenges (Zelman et al., 2003; Silva and Prochnik, 2005; Gao and Gurn, 2006). For example, good communication between medical staff and service quality is an important attribute in hospital that is not easy to measure, interpret and compare with other organizations (Zelman et al., 2003).

The difficulty with the BSC lies not with its implementation, but rather on how the organization is able to show and communicate its performance. A performance measure that is able to measure all aspects of the organization fairly is needed. Therefore, the research question arising from this current study is what are the performance measures (financial and non-financial) used by private hospital in Surakarta County, Central Java, Indonesia?

Aryani & Rahmawati

2.2. Participation and Managerial Performance

Managerial performance measures assess how effective and efficient a manager works toward achieving the organization's goals. When a decision made by a manager is effective and efficient to achieve the organization goal, it can be said that the managerial performance is good (Stoner quoted on Juniarti and Evelyne, 2003).

Historically, studies about managerial performance started to increase since the study of Fayol (1916). Prior to this, traditional literatures classified management performance into three perspectives which were: (1) function, behavior and manager's role; (2) manager's characteristics and skill; and (3) manager's policy (decision-making) (Borman and Brush, 1993). Mahoney et al. (1963) on the other hand, stated that managerial performance is the performance of individual members of the organization on managerial activities, that is measured with eight indicators: planning, investigating, coordinating, evaluating, supervising (controlling), staffing, negotiating, and representing.

Participation in the decision-making-process can be reflected by the ability to voice views and arguments during a procedure and the ability to influence the actual outcome itself (Thibaut and Walker, 1975). Brownell (1982) claimed that participation was a process of individual performance evaluation, however awards were decided based on meeting budget targets and the involvement of those individuals in budget development. Budget participation gives more opportunity for managers (as one who will be evaluated) to negotiate with their senior managers about the possibility of achievable budget targets (Brownell and McInnes, 1986). Prior studies of participation on budgeting have used the theory of participation which is also used in this current study, specifically the participation theory from budgeting based on Korsgaard and Roberson (1995) which looks at the role of voice as a control on performance evaluation.

Conflicting results in the prior literature occur regarding the relationship between participation and managerial performance. Initially, research which examined the direct influence of budgeting participation from a behavioral point of view was done by Milani (1972) based on Argyris (1955) study. The study found that participation increases work satisfaction and motivation which positively influences managerial performance. The study is supported by many others which found positive and significant relationship between budgeting participation and managerial performance (see for example: Mia 1989; Brownell, 1982; Brownell and McInnes, 1986; Supomo and Indriantoro, 1998; and Chong and Chong, 2002). Conversely, Bryan and Locke (1967) and Dunk (1989) found that some budgeting participation had a significant negative relationship with managerial performance.

The studies above show the relationship between participation and managerial performance on the budgeting context. However, there is still limited study regarding participation on the development of performance measures (financial and non-financial) that has been done. One of the

Aryani & Rahmawati

studies, conducted by Aryani (2009), found participation on the development of performance measures positively influenced managerial performance. Based on budgeting participation, and psychology theory from Lind et al (1990) which found that a pre-decision voice provides fairer perception on managerial performance evaluation than post-decision voice, the present research argues that participation will increase managerial performance. The argument in this current study is formalized into hypothesis one below.

H₁: Participation in development of performance measures, financial and non-financial, influence the managerial performance in hospital industry.

2.3. Participation, Fairness Perception and Managerial Performance

As Lind et al. (1990) demonstrated, the ability to have a voice in the decision-making process increases fair perception among employees. This fair perception positively affects the managerial performance as it influences behavior and other performance (Lau and Lim, 2002)^v.

Libby (1999) examines the relationship between the use of the fair budgeting process and sub-ordinate performance. The result shows that the fair budgeting process (a combination between voice and explanation) positively influences performance. Furthermore, Libby (1999) found that high procedural fairness perception increases performance.

In addition, McFarlin and Sweeny (1992) concluded that fairness perception can be used to evaluate staff performance. The result of such an evaluation process can be used to communicate feedback of their performance and decide rewards such as promotion. The present study is in keeping with the findings of Lau and Lim (2002). Furthermore, the present research intends to explore the indirect relationship between procedural fairness and managerial performance through participation. Therefore, the hypotheses developed for this current study are formalized below.

H₂: Participation in development of performance measures, financial and non-financial, influence fairness perception of the performance measures in hospital industry.

H₃: Fairness perception of the performance measures influences managerial performance in hospital industry.

In the case of financial and non-financial performance measures, Kaplan and Norton (1993) argue that one of the strengths of the BSC is the ability of the organization to develop unique measures capable of capturing each unit/division capability. Hence, the non-financial measures should be perceived as being fairer than financial measures. However, Lau and Sholihin (2005) and Aryani (2009) failed to find evidence to support this claim. Thus, this current study aims to test this argument further with respect to the hospital industry. This argument is formalized into the hypothesis below.

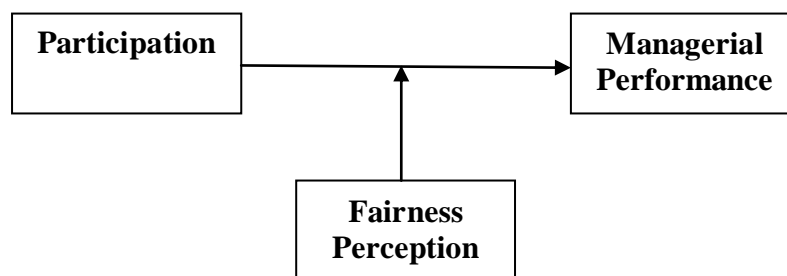
Aryani & Rahmawati

H₄: Non-financial measures are perceived to be fairer than financial measures.

2.4. Research Framework

In this study it is argued that participation in the development of performance measures enhances managerial performance, directly or indirectly through fairness perception. The relationship between the key variables can be seen in Figure 1.

Figure 1: Research Framework



3. Methodology and Research Design

3.1. Sampling Procedures

This study uses the survey research method to address the research question and to test the hypotheses developed. The survey for this study is carried out over hospital industry in Indonesia. Middle management participants were chosen as the unit of analysis. The private hospitals located in the area of Surakarta County, Central Java, Indonesia are used as the sampling frame. Regression and path analysis are employed to test the hypotheses in order to ascertain the relationship of each variable (participation and fairness perception) to the dependent variable of interest (managerial performance).

The questionnaire included questions relating to all variables in the present research model and some general questions such as the personal details of the manager. The development of the questionnaire followed the guidelines of de Vaus (1992) and Dillman (2007) and mostly derived from Aryani (2009). Five-point Likert scales from one to five were used for most of the items requiring an opinion. The answer categories included the option of “No Basis for Answering” option, as Andrews (1984) found that the inclusion of that option increases data quality since it provides an opportunity for respondents not to answer it if they lack information to do so.

Although most of the questionnaire is derived from Aryani (2009), with some modification, a pilot study was conducted where the draft survey questionnaire along with a feedback questionnaire evaluation form, was sent to a few middle managers in private hospitals. The pilot project was intended to get feedback from actual targeted respondents. Finally, the survey

Aryani & Rahmawati

instrument was personally delivered to 170 middle managers, representing 13 private hospitals in the district area of Surakarta, Central Java, Indonesia. The 88 completed questionnaires represent a usable response rate of 51.76%.

The important issue of sampling error is the problem of non-response bias. This occurs since most of the sample surveys attract a certain amount of non-response. The problem is that respondents and non-respondents may differ in certain aspects and, hence, the respondents may not be representative of the population. In this respect, a paired-samples t-test was conducted to address the non-response bias problem in this study. A t-test is used to determine whether there is a significant difference between two sets of scores (Coakes, Steed and Price, 2008). In this case, the data were separated into: early respondents; and late respondents, since non-respondents tend to be similar to late respondents in responding to surveys (Miller and Smith, 1983). The t-test result revealed that the two-tail significance of all of the main variables is not significant at $p > 0.05$. This means that there are no differences between the early responses and the late responses. In other words, non-response bias can be ignored. This result is also important for the generalisability of the findings.

3.2. Operationalisation of the Key Construct

Participation:

A ten-item five-point Likert-scaled instrument was used derived and modified mostly from Aryani (2009). These instruments have all been validated by other researchers and are seen to be relevant to this study. Respondents were asked to indicate their agreement with each of the statements in the survey regarding their participation in performance measure development, especially in the determination of financial and non-financial performance measures.

Fairness Perception:

The latent variable of perceived procedural fairness in this study is measured using an eight-item, five-point Likert-scaled instrument. The instruments are derived mostly from Aryani (2009). The instruments are developed to address: consistency over time, consistency across persons, correctability, voice and accuracy norms that have been identified for fair formal decision-making procedures.

Managerial Performance:

The nine dimensional five-point Likert scaled employed by Mahoney et al. (1965) is a self-rating measure used in this study to evaluate the managerial performance variable. The scale comprises eight performance dimensions and one overall effectiveness dimension. This self-rating measure is chosen because it has been used extensively in earlier studies (Heneman, 1974; Brownell, 1982; Brownell and Hirst, 1986; Brownell and McInnes, 1986; Brownell and Dunk, 1991; Aryani, 2009).

Aryani & Rahmawati

Financial and Non-financial Performance Measures:

To explore the financial and non-financial measures that have been used in performance evaluation, a partially structured instrument is used in this study. The survey lists key financial and non-financial measures within each of the four perspectives of the BSC that are usually used in hospitals based on prior literature (see for example: Griffith et al., 2002; Inamdar et al., 2002; Chan, 2004; Gao and Gurd, 2006; Wicks et al., 2007; and Chu et al., 2009).

4. Discussion of Findings

4.1. Financial and Non-Financial Performance Measures

Tables 1 through 4 comprise the list of financial and non-financial measures that are commonly used to evaluate managerial performance. These measures are based on the managers' opinions on the extent of its use in each of the performance measures.

a. Financial Measures Perspective

Table 1 outlines the financial measures that are commonly used to evaluate managerial performance.

Tabel 1: Financial Measures Perspective

The Extent of Use	Revenue Growth		Gross Profit		Return on Capital		Return on Investment		Fund-Raising	
	F	%	F	%	F	%	F	%	F	%
No Basis for Answering	17	19.3	19	21.6	30	34.1	34	38.6	26	29.5
Not at All	0	0.0	6	6.8	6	6.8	7	8.0	3	3.4
Very Little	3	3.4	7	8.0	9	10.2	7	8.0	5	5.7
Little	20	22.7	22	25.0	23	26.1	24	27.3	29	33.0
Somewhat	45	51.1	32	36.4	16	18.2	12	13.6	25	28.4
To A Great Extent	3	3.4	2	2.3	4	4.5	4	4.5	0	0.0
Total	88	100.0	88	100.0	88	100.0	88	100.0	88	100.0

Source: Summaries Output SPSS

The results show that most of the hospital applied revenue growth and gross profit are somewhat used by 51.1 per cent and 36.4 per cent, respectively. Whilst return on capital, return on investment and fund-raising are little used in the hospital. Interestingly, there are some managers who are willing to provide other measures besides those that have been indicated by the researcher in the survey questionnaire. Some of the hospitals other financial performance measures such as: payable and receivable, net profit, expenses, patient number, and efficiency ratio (revenue and expense) are used to a great extent.

Aryani & Rahmawati

b. Customer Measures Perspective

Table 2 outlines the customer measures that are commonly used to evaluate managerial performance.

Tabel 2 : Customer Measures Perspective

The Extent of Use	Customer Satisfaction Ratio		Customer Complaints		Admin. Service Quality		Clinical Service Quality		Patient Retention	
	F	%	F	%	F	%	F	%	F	%
No Basis for Answering	11	12.5	5	5.7	5	5.7	7	8.0	18	20.5
Not at All	4	4.5	4	4.5	2	2.3	2	2.3	15	17.0
Very Little	4	4.5	23	26.1	4	4.5	3	3.4	4	4.5
Little	17	19.3	28	31.8	23	26.1	16	18.2	35	39.8
Somewhat To A Great Extent	49	55.7	27	30.7	53	60.2	60	68.2	16	18.2
Total	88	100.0	88	100.0	88	100.0	88	100.0	88	100.0

Source: Summaries Output SPSS

The results illustrate that most of the hospitals (more than 50%) somewhat used the customer satisfaction ratio, administration service quality and clinical service quality compare to customer complaints and patient retention.

c. Internal Business Process Measures Perspective

Table 3 outlines the internal business process measures that are commonly used to evaluate managerial performance.

Tabel 3: Internal Business Process Perspective

The Extent of Use	Respond Time		Clinical Failure Risk		Cost per Diagnosis		Mortality Index		Product Innovation	
	F	%	F	%	F	%	F	%	F	%
No Basis for Answering	16	18.2	11	12.5	26	29.5	30	34.1	17	19.3
Not at All	7	8.0	13	14.8	3	3.4	5	5.7	2	2.3
Very Little	10	11.4	19	21.6	13	14.8	17	19.3	9	10.2
Little	16	18.2	29	33.0	25	28.4	27	30.7	41	46.6
Somewhat To A Great Extent	36	40.9	15	17.0	19	21.6	9	10.2	19	21.6
Total	88	100.0	88	100.0	88	100.0	88	100.0	88	100.0

Source: Summaries Output SPSS

Aryani & Rahmawati

The above table demonstrates that from an internal business process perspective, most hospitals somewhat used respond time, while other measures are little employed.

d. Learning and Growth Measures Perspective

Table 4 outlines the learning and growth measures that are commonly used to evaluate managerial performance.

Table 4: Learning and Growth Measures Perspective

The Extent of Use	Employee Training		Employee Job's Satisfaction		Employee Retention		Research Development		Strategic Database	
	F	%	F	%	F	%	F	%	F	%
No Basis for Answering	6	6.8	15	17.0	24	27.3	16	18.2	18	20.5
Not at All	4	4.5	1	1.1	9	10.2	2	2.3	3	3.4
Very Little	12	13.6	9	10.2	16	18.2	16	18.2	11	12.5
Little	24	27.3	21	23.9	30	34.1	33	37.5	38	43.2
Somewhat	42	47.7	42	47.7	8	9.1	21	23.9	17	19.3
To A Great Extent	0	0.0	0	0.0	1	1.1	0	0.0	1	1.1
Total	88	100.0	88	100.0	88	100.0	88	100.0	88	100.0

Source: Summaries Output SPSS

The results show that most of the hospitals surveyed somewhat used employee training and employee job's satisfaction (47.7 per cent), while employee retention, research development and strategic database are little used in hospitals.

4.2. Hypotheses Tests

This study employed regression and path analysis to examine the hypotheses developed in the study. After performing all of classical tests required on regression, the results are presented in Tables 5 through 7 below.

Table 5: Coefficient Path Model

	Coefficient	t	p	Conclusion
ρ_1	0.326	3.199	0.002	Significant
ρ_2	0.635	7.625	0.000	Significant
ρ_3	0.414	4.218	0.000	Significant

Source: Summaries Output SPSS

Aryani & Rahmawati

Tabel 6: Hypotheses Test Results

	Hypotheses	Beta	Adj R ²	Sig	Conclusion
H1	Participation in development of performance measures, financial and non-financial, influence the managerial performance in hospital industry	0.326	0.096	0.002	Accepted
H2	Participation in development of performance measures, financial and non-financial, influence fairness perception of the performance measures in hospital industry	0.635	0.396	0.000	Accepted
H3	Fairness perception of the performance measures influences managerial performance in hospital industry	0.414	0.162	0.000	Accepted

Source: Summaries Output SPSS

Tabel 7: Regression Result with Mediating Variable

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.918	2.947		5.740	0.000
	SumPrtcp	0.091	0.110	0.106	0.832	0.408
	SumFairness	0.350	0.129	0.347	2.724	0.008

a. Dependent Variable: SumKM

From Table 6, it can be seen that the current research supports the hypothesis that participation in the development of performance measures (financial and non-financial) influences the managerial performance in the hospital industry (H₁) as p-value < 0.05. This indicates that the involvement of the managers in the development of performance measures to evaluate their performance positively influence their managerial performance. Furthermore, it can be concluded that the participation of the middle-manager in the hospital is relatively high and positive ($\beta = 0.326$). It can be inferred that the higher the participation, the higher the managerial performance. This result is in line with Milani (1975); Mia (1989); Brownell (1982); Brownell and Mc.Innes (1986); Supomo and Indriantoro (1998); Chong and Chong (2002); and Aryani (2009).

The acceptance of hypothesis H₂ provides evidence that participation in the development of performance measures influences the fairness perception of the performance measures. The β value is quite high and positive (0.635) which indicates that the higher the participation, the higher the fairness perception. This finding support the studies done by Brownell, (1982); Lind, (1990); Lau and Lim (2002); Muhammad (2004); and Aryani (2009), that found participation positively impacts fairness perception.

Aryani & Rahmawati

Furthermore, as presented in Table 6, hypothesis H_3 is supported. This demonstrates that fairness perception positively influences managerial performance. It can be inferred that the existence of fairness perception on the performance evaluation process increases managerial performance since this feeling of fairness is able to reduce bias on the performance evaluation. This finding is in line with the result of McFarlin and Sweeny (1992); Libby (1999); Lau and Lim (2002); and Aryani (2009). In addition, it can be seen from Table 7 that fairness perception of the performance measures fully mediates the relationship between participation and managerial performance. This conclusion can be seen from both the reduction of β value of participation from 0.326 to 0.106 and the insignificant p-value ($p > 0.05$). Therefore, it can be inferred that participation in the development of performance measures influence managerial performance through the fairness perception of the performance measures. This finding supports the studies done by Lau and Lim (2002) and Aryani (2009).

In the present study, H_4 states that non-financial measures are perceived to be fairer than financial measures. This hypothesis basically tests the manager's perceptions of financial and non-financial performance measures that have been used to assess their managerial performance, in terms of their fairness perception. Table 8 illustrates the frequencies of the measures category.

Tabel 8 : Frequency of the Measure Category

		Freq	Valid (%)	Kumulatif (%)
Valid	Financial Measures	30	37.04	37.04
	Neutral	28	34.57	71.61
	Non-Financial Measures	23	28.39	100.00
Total		81	100.00	

From Table 8, it can be seen that 37.04% of the respondents perceived that financial measures are fairer than non-financial measures, while only 28.39% perceived that non-financial measures are fairer than financial measures. The rest of the respondents (34.57%) did not perceive any differences between the two measures. Therefore, it can be concluded that H_4 – non-financial measures are perceived to be fairer than financial measures – is rejected since a high proportion of the respondents perceived financial measures as being fairer than the non-financial measures.

However, further tests are required to determine if differences in frequencies exists across response categories. A chi-square test for goodness of fit is conducted to test the differences. The result from the test is presented in Table 9.

Table 9: Result output of the test statistics of the type of measures

	Type of measures
Chi-Square(a)	56.545 ^a
df	5
Asymp. Sig.	.000

a. 0 cells (.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 14,7.

From Table 9, it can be seen that the chi-square value is significant ($p < 0.05$). Hence, it can be concluded that there are significant differences in the frequencies of the manager's perception of the fairness of performance measures between financial measures and non-financial measures, $\chi^2(5, N = 81) = 56.545$, $p < 0.05$. This result further supports the conclusion that H4 is rejected, since the managers perceived that financial performance measures are fairer than non-financial performance measures. This result is different to the results of Lau and Sholihin (2005) who found that there were no differences between financial and non-financial measures in terms of their importance in affecting job satisfaction. However, this finding is in line with Aryani (2009). Additionally, although Kaplan and Norton (1993, 2001) argue that non-financial measures are one of the important strengths of the BSC, in the present study managers perceived that financial measures were fairer than non-financial measures. This might be because of the subjectivity of non-financial measures (Ittner et al., 2003).

5. Conclusion and limitation

The empirical test shows that participation in the development of the performance measure process influences managerial performance both directly and through fairness perception of those performance measures. Further, the respondents work perceived that financial performance measures are fairer than non-financial performance measures.

This current study has limitations that should be considered when making any conclusion and generalizing the results. The limitations of this study are: (1) the performance measures instruments are self assessment instruments that give greater opportunity to respondents to perceive their performance as being higher than it should be. This can lead to bias on the managerial performance measures; (2) the number of hospitals that were willing to participate in this study was relatively low and unequal on type and classification, which impacts on the generalisability of the results particularly in regard to the financial and non-financial performance measures that have been used. Therefore, further research opportunities are available by using senior manager's perception about the middle manager's performance measures that can be expected to reduce the bias on the performance measures variable.

However, beside those limitations, this current study has theoretical and practical implications. From a theoretical perspective, in general, research

Aryani & Rahmawati

about BSC in the hospital industry is about the effectiveness of the application of the BSC, with research reon holistic performance measures used in hospitals being quite rare. Thus, it is expected that this current study will add to knowledge especially about the financial and non-financial performance measures used in the hospital industry. This current study also contributes to the knowledge regarding the study of participation particularly in the development of performance measures used in the performance evaluation process. From a practical perspective, it is expected that this current study will provide empirical evidence that is useful for hospital management in Indonesia. Specifically, to provide hospitals an avenue to always improve its performance and its performance evaluation process through the opportunity to participate in the development of performance measures for all parties involved in the performance evaluation process.

Footnotes

ⁱ Section 4 Act No. 44 of 2009

ⁱⁱ For example, by conducting earning management (Arifin, 2009).

ⁱⁱⁱ Aryani (2009) used division's managers who have been evaluated by their senior manager, as respondents on her research.

^{iv} Hospital types that have been included in studies are: *Hospital System, Hospitals, Psychiatric Centers, Insurance Companies, Pharmaceutical Companies, and National Health Care Organization.*

^v In this study Lau and Lim (2002) used the term procedural justice for the fairness perception.

References

Act No. 44 of 2009 (UU No. 44 year 2009).

Act No. 29 of 2004 (UU No. 29 year 2004).

Act No. 23 of 1992 (UU No. 23 year 1992).

Aidemark, L.G. 2001. "The Meaning of Balanced Scorecards in the Health Care Organizations", *Financial Accountability & Management*, vol. 17, no. 1, pp. 23- 40.

Andrews, F. M. 1984. "Construct Validity and Error Components of Survey Measures: A Structural Modelling Approach", *Public Opinion Quarterly*, vol. 48, no. 2, pp. 409-442.

Argyris, C. 1955. "Organizational Leadership and Participation Management", *The Journal of Business*, vol. XXVII (January), pp. 1-7.

Arifin, T. 2009. *Pengaruh Rule-Based Dan Principle-Based Accounting Standards Terhadap Manajemen Laba Akrua Dan Riil*, Tesis, Universitas Gajah Mada, Yogyakarta, Indonesia.

Aryani, Y.A. 2009. *The Effect of Fairness Perception of Performance Measurement in The Balanced Scorecard Environment*, Thesis. Victoria University, Melbourne, Australia.

Averson, P. 1998. "What is the Balanced Scorecard", *The Balanced Scorecard Institute*, Available at: <http://www.balancedscorecard.org/basics/bsc1.html> (Retrieved February 14, 2007).

- Baker., G. R. and Pink, G.H. 1995. "A Balance Scorecard for Canadian Hospitals', *Healthcare Management Forum*", vol. 8, no. 4 winter, pp. 7 – 13.
- Blenkinsop, S. A., and N. Burns. 1992. "Performance Measurement Revisited', *International Journal of Operations & Production Management*", vol. 12, no. 10, pp. 16-25.
- Borman, W.C. and Brush, D.H. 1993. "More Progress toward Taxonomy of Managerial Performance Requirements', *Human Performance*", vol. 6, no. 1, pp. 1-21.
- Bourne, M., J. Mills, M. Wilcox, A. Neely, and K. Platts. 2000. "Designing, Implementing and Updating Performance Measurement Systems', *International Journal of Operations & Production Management*", vol. 20, no. 7, pp. 754-771.
- Brownell, P. 1982. "A Field Study Examination of Budgetary Participation and Locus of Control', *The Accounting Review*", vol. LVII, no.4.
- Brownell, P. and A.S. Dunk. 1991. "Task Uncertainty And Its Interaction With Budgetary Participation And Budget Emphasis: Some Methodological Issues and Empirical Investigation', *Accounting, Organization and Society*", vol. 16, no. 8, pp. 693-703.
- Brownell, P., and M.K. Hirst 1986. "Reliance on Accounting Information, Budgetary Participation, and Task Uncertainty: Tests of a Three-Way Interaction', *Journal of Accounting Research*", vol. 24, no. 2 (Autumn), pp. 241-249.
- Brownell, P. and M. Mc. Innes 1986. "Budgetary Participation, Motivation, and Managerial Performance', *The Accounting Review*", vol. 61, October, pp. 587-600.
- Bryan, J. and Locke, E. 1967. "Goal Setting As A Means Of Increasing Motivation', *Journal of Applied Psychology*", vol. 51, pp. 274-277.
- Burgess, T. F., T. S. Ong, and N. E. Shaw. 2007. "Traditional or Contemporary? The Prevalence of Performance Measurement System Types', *International Journal of Productivity and Performance Management*", vol. 56, no. 7, pp. 583-602.
- Chan, Y.-C.L. 2004. "Performance Measurement and Adoption Of Balanced Scorecards: A Survey of Municipal Governments in the USA and Canada', *International Journal of Public Sector Management*", vol. 17, no. 3, pp. 204-21.
- Chan, Y-C.L. and S.J.K. Ho 2000. "Performance Measurement And The Use Of Balanced Scorecard In Canadian Hospitals', *Advances in Management Accounting*", vol. 19, pp. 145-169.
- Chong, V.K., and Chong, K.M. 2002. "Budget Goal Commitment and Information Effects of Budget Participation: A Structural Equation Modelling Approach', *Behavioral Research in Accounting*", vol. 1, pp. 65-86.
- Chu, Hsuan Lien., Wang, C. Chin., and Yu Tzu Dai. 2009. "A study of a nursing departement, Performance measurement system : using the balancscorecard and the analytic hierarchy process', *Nursing Economics*", vol 27, no. 6.

-
- Coakes, S. J., L. Steed, and J. Price. 2008. *SPSS Version 15.0 for Windows: Analysis Without Anguish*, 1st ed. Milton, Qld: John Wiley & Sons Australia, Ltd.
- de Vaus, D. A. 1992. *Surveys in Social Research*, London: Allen and Unwin.
- Dillman, D. A. 2007. *Mail and Internet Surveys: The Tailored Design Method*, 2nd Edition, United States of America: John Wiley & Sons, Inc.
- Dunk, A.S. 1989. "Budget Emphasis, Budgetary Participation and Managerial Performance: A Note", *Accounting Organizations and Society*", vol. 14, no.4, pp. 321-324.
- , 1990. "Budgetary Participation, Agreement on Evaluation Criteria and Managerial Performance: A Research Note", *Accounting, Organizations and Society*", vol. 15, no. 3.
- Gao, T. and Gurd, B. 2006. "Lives in the Balance: Managing with the Scorecard in not-for-Profit Healthcare Settings", *Eighth Biennial Conference*", Adelaide : 26-28 November 2006.
- Governance Regulation No. 32 of 1996 (PP 32 year 1996).
- Griffith, J.R., Alexander, J.A. and Jelinek, R.C. 2002. "Measuring Comparative Hospital Performance", *Journal of Healthcare Management*", vol. 47, no. 1, pp. 41-57.
- Hamzah, A. 2008. *Pengaruh Partisipasi dalam Penganggaran terhadap Budgetary Slack*, Skripsi. Universitas Sebelas Maret Surakarta, Indonesia.
- Health Minister's Decision Letter No. 1457 of 2003 (SK MenKes RI No 1457/Menkes/SK/X/2003)
- Heneman, H.G. 1974. "Comparison of Self and Superior Ratings of Managerial Performance", *Journal of Applied Psychology*", vol. 59, no. 5, pp. 638-42.
- Hoftede, G.H. 2008. *The game of budget control*. The Netherlands: Koninklijk gorcum and company N.V. Assen.
- Inamdar, N., R.S. Kaplan and K. Reynolds 2002. "Applying the Balanced Score Card in Healthcareprovider Organizations", *Journal of Healthcare Management*", vol. 47, no. 3, pp. 179-95.
- Ittner, C. D., D. F. Larcker, and M. Meyer. 2003. "Subjectivity and the Weighting Of Performance Measures: Evidence from a Balanced Scorecard", *The Accounting Review*", vol. 78, no. 3, pp. 725-758.
- Juniarti and Evelyne. 2003. "Hubungan Karakteristik Informasi Yang Dihasilkan Oleh Sistem Informasi Akuntansi Manajemen Terhadap Kinerja Manajerial Pada Perusahaan-Perusahaan Manufaktur Di Jawa Timur", *Jurnal Akuntansi dan Keuangan*", vol 5, no. 2, November.
- Kaplan, R. S., and D. P. Norton. 1992. "The Balanced Scorecard – Measures That Drive Performance", *Harvard Business Review*", vol. 70, no. 1, pp. 71-79.
- , 1993. "Putting the Balanced Scorecard to Work", *Harvard Business Review*", vol. 71, no. 5, pp. 134-42.
- , 2001. *The Strategy-Focused Organisation: How Balanced Scorecard Companies Thrive in the New Business Environment*. Boston, MA: Harvard Business School Press.

- Korsgaard, M.A., and L. Roberson. 1995. "Procedural Justice in Performance Evaluation: The Role of Instrumental and Non-Instrumental Voice In Performance Appraisal Discussions', *Journal of Management*", vol. 21, no. 4, pp. 657-669.
- Kren, L. 1992. "Budgetary Participation and Managerial Performance: The Impact of Information and Environmental Volatility', *The Accounting Review*", vol 67, no. 3, pp. 511-526.
- Lau, C.M., and E. Lim. 2002. "The Intervening Effects of Participation on the Relationship between Procedural Justice and Managerial Performance', *British Accounting Review*", vol. 34, pp. 55-78.
- Lau, C.M., and M. Sholihin. 2005. "Financial and Nonfinancial Performance Measures: How Do They Affect Job Satisfaction?', *The British Accounting Review*", vol. 37, pp. 389-413.
- Lau, C.M., and Tan, J.J. 1998. "The Impact of Budget Emphasis, Participation and Task Difficulty on Managerial Performance: A Cross-Cultural Study of the Financial Services Sector', *Management Accounting Research*", vol. 9, pp. 163-183.
- Libby, T., 1999. "The Influence of Voice and Explanation on Performance in Participative Budgeting Setting', *Accounting, Organizations, and Society*", vol. 24, pp. 125-137.
- Lind, E., R. Kanfer, and P. Early. 1990. "Voice, Control, and Procedural Justice: Instrumental and Noninstrumental Concerns In Fairness Judgment', *Journal of Personality and Social Psychology*", vol. 59, no. 5, pp. 952-959.
- Linguist, T.M., 1995. "Fairness as an Antecedent to Participative Budgeting: Examining the Effects of Distributive Justice, Procedural Justice and Reference Cognitions on Satisfaction and Performance', *Journal of Management Accounting Research*", vol. 7 (Fall), pp. 122-1.
- Mahoney, T., Jerdee, T., and Carroll, S. 1963. *Development of Managerial Performance: A Research Approach*. Cincinnati: South-Western Publishing Company.
- Mahoney, T.A., T.H. Jerdee, and S.J. Carroll. 1965. "The Job(s) of Management', *Industrial Relation*", vol. 4, no. 2, pp. 97-110.
- Malina, M.A., and F.H. Selto. 2001. "Communicating And Controlling Strategy: An Empirical Study of the Effectiveness of the Balanced Scorecard', *Journal of Management Accounting Research*", vol. 13, pp. 47-90.
- Mardiasmo. 2002. *Akuntansi Sektor Publik*. Yogyakarta, Andi Offset.
- Mark, A., 1993. *Doctors into Managers – The Personal Costs*, Conference on "The Personal Costs of Managerial Work", Bolton Business School, 28-30 November 1993.
- Martanti. 2003. *Penilaian Pengukuran Kinerja Rumah Sakit Panti Waluyo Surakarta Dengan Menggunakan Metode Balanced Scorecard*, Skripsi. Universitas Sebelas Maret Surakarta, Indonesia.
- McFarlin, D. & Sweeny, P. 1992. "Distributive and Procedural Justice as Predictors of Satisfaction with Personal and Organizational Outcomes', *Academy of Management Journal*", vol. 35, no. 3, pp. 626-637.

- Mia, L. 1989. "The Impact of Participation in Budgeting and Job Difficulty on Managerial Performance and Work Motivation: A Research Note", *Accounting Organizations and Society*, vol. 14, no. 4, pp. 347-357.
- Milani, K.R., 1972. *Budgeting in an Industrial Setting: A Field Study of the Relationship between Involvement in Budget-setting and Job Performance and Attitudes*, Thesis. The University of Iowa.
- Milani, K.R., 1975. "The Relationship of Participation in Budget-Setting to Industrial Supervisor Performance and Attitudes: A Field Study", *Accounting Review*, vol. 50, pp. 274-284.
- Miller, L.E., and K. Smith. 1983. "Handling Non-Response Issues", *Journal of Extension*, On-line, 21 (5). Available at: <http://www.joe.org/joe/1983september/83-5-a7.pdf>.
- Muhammad, A.H. 2004. "Procedural Justice As Mediator Between Participation In Decision-Making And Organisational Citizenship Behaviour", *International Journal of Commerce & Management*, vol. 14, no. 3 & 4, pp. 58-68.
- Neely, A., M. Bourne, and M. Kennerley. 2000. "Performance Measurement System Design: Developing and Testing A process-Based Approach", *International Journal of Operations & Production Management*, vol. 20, no. 10, pp. 1119-1145.
- Nimphar, M. 2009. *Pengaruh Partisipasi Manajer Dalam Penganggaran Terhadap Kinerja Manajerial Di Rumah Sakit Haji Medan Tahun 2008*, Tesis. Universitas Sumatra Utara, Indonesia.
- Oliveira, J. 2001. "The Balanced Scorecard: An Integrative Approach to Performance Evaluation", *Healthcare Financial Management*, vol. 55, no. 5, pp. 42- 46
- Olsen, E. O., H. Zhou, D. M. S. Lee, Y. E. Ng, C. C. Chong, and P. Padunchwit. 2007. "Performance Measurement System and Relationship with Performance Results: A Case Analysis of a Continuous Improvement Approach to PMS Design", *International Journal of Productivity and Performance Management*, vol. 56, no. 7, pp. 559-582.
- Olve, N. G., J. Roy, and M. Wetter. 1999. *Performance drivers: A practical guide to using the balanced scorecard*, New York: John Wiley & Sons.
- Otley, D.T. 2001. "Extending the Boundaries of Management Accounting Research: Developing Systems for Performance Management", *British Accounting Review*, vol. 33, no. 3, pp. 243-261.
- Parkinson, J., T. Peter and M. Porporato. 2007. "A Critical Review of Financial Measures as Reported in the Ontario Hospital Balance Scorecard", *Journal of Health Care Finance*, vol. 34, no. 2.
- Pillay, R. 2008. "Work Satisfaction of Medical Doctors in the South African Private Health Sector", *Journal of Health Organization and Management*, vol. 22, no. 3, pp. 254-268.
- Prasetyono and Kompyurini. 2007. *Analisis Kinerja Rumah Sakit Daerah Dengan Pendekatan Balanced Scorecard Berdasarkan Komitmen Organisasi, Pengendalian Intern Dan Penerapan Prinsip-Prinsip Good Corporate Governance (GCG), (Survei Pada Rumah Sakit Daerah di Jawa Timur)*, SNA X.

- Puspaningtyas, D. 2009. *Pengaruh Penganggaran Partisipatif Terhadap Kinerja Manajerial Dengan Struktur Organisasi Sebagai Variabel Moderating : Survey Pada Rumah Sakit Di Purwodadi Grobogan*, Skripsi. Universitas Muhammadiyah Surakarta, Indonesia.
- Romel, E. 2006. *Pengukuran Kinerja Rumah Sakit ABC dengan kerangka Balance Scorecard*, Thesis. Universitas Indonesia, Indonesia.
- Silva, B.F.G. and Prochnik, V. 2005. *Seven Challenges for the Implementation of Balanced Scorecard in Hospitals*, 3rd Conference on Performance Measurement and Management Control Nice, September 22-23, 2005.
- Simons, R. 2000. *Performance Measurement and Control Systems for Implementing Strategy*. Upper Saddle River, New Jersey, Prentice Hall.
- Stewart, L.J. and W.E. Bestor 2000. "Applying A Balanced Scorecard to Health Care Organizations", *Journal of Corporate Accounting & Finance*", vol. March/April, pp. 75-82.
- Supomo, B. and Indriantoro, N. 1998. "Pengaruh Struktur dan Kultur Organisasional terhadap Keefektifan Anggaran Partisipatif dalam Peningkatan Kinerja Manajerial: Studi Empiris pada Perusahaan Manufaktur di Indonesia, *Kelola*", no. 18/VII, pp. 61-84.
- Suprpto, B., H.A. Wahab and A.J. Wibowo 2009. "The Implementation of Balance Score Card for Performance Measurement in Small and Medium Enterprise: Evidence from Malaysian Health Care Service", *The Asian Journal of Technology Management*", vol. 2, no. 2.
- Thibaut, J. and Walker, L. 1975, *Procedural Justice: A Psychological Analysis*, Erlbaum, Hillsdale, NJ.
- Watkins. A. L. 2003. "A Balanced Perspective: Using Nonfinancial measures to Assess Financial Performance", *Healthcare Financial Management*", vol. 57, no. 11.
- Wicks, Angela M., Clair, Lynda St., Kinney, Charles S. 2007. "Competing Values in Healthcare: Balancing the (Un)Balanced Scorecard", *Journal of Healthcare Management*", vol. 52, no. 5.
- Woodward, G., D. Manuel, V. Goel. 2004. *Developing a Balanced Scorecard for Public Health*. Toronto. Institute for Clinical Evaluative Sciences (ICES).
- Yuliati, R. 2009. *Pengaruh Partisipasi Penyusunan Anggaran Terhadap Kinerja Manajerial Dengan Pelimpahan Wewenang Sebagai Variabel Moderating*, Skripsi. Universitas Muhammadiyah Surakarta, Indonesia.
- Zelman, W.N., Pink, G.H. and Mathias, C.B. 2003. "Use of the Balance Scorecard in Health Care", *Journal of Health Care Finance*", vol. 29, no. 4, pp. 1-16.