

THE INTERVENING EFFECTS OF PROCEDURAL FAIRNESS AND INTERPERSONAL TRUST ON THE RELATIONSHIPS BETWEEN MULTIPLE MEASURES-BASED PERFORMANCE EVALUATION AND MANAGERS' JOB SATISFACTION*

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Criticisms directed at the use of financial measures alone for performance evaluation have led to much interest in the use of nonfinancial performance measures to balance the financial measures. Hence, much recent research has been directed to investigate the effectiveness and behavioral consequences of a mix of financial and nonfinancial measures (e.g. the Balanced Scorecard approach) in contemporary settings. However, there is evidence from prior studies to suggest that the manner or how performance measures are used may affect the subordinates' behavior and work-related attitudes indirectly through the subordinates' perception of the justness of these measures and the interpersonal trust these measures promote. There is also evidence to indicate that it is the extent of the subordinates' agreement with the performance measures used in the evaluation, rather than the measures per se, which affects their behavior and work-related attitudes. Subordinates are more likely to agree with performance measures which they regard as fair and which enhance their trust in their superiors. This study therefore investigates if the effects of a mix of financial and nonfinancial measures (such as those used in the Balanced Scorecard approach) on subordinates' job satisfaction are indirect through the subordinates' perception of the greater extent of

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fairness (justness) in the evaluation process and the greater extent of trust such a mix of measures promotes. The results, based on a sample of 70 managers, support the expectation that a mix of financial and nonfinancial has no direct effect on subordinates' job satisfaction. Instead, the effects of such a mix of performance measures on subordinates' job satisfaction are indirect through the enhancement of the subordinates' favorable perceptions of procedural fairness and interpersonal trust.

Keywords: interpersonal trust; job satisfaction; multiple measures-based performance evaluation; procedural fairness

Introduction

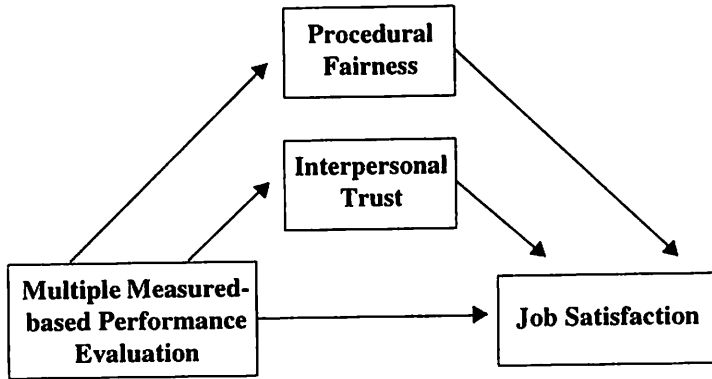
Evidence from prior studies suggests that measures used by superiors to evaluate their subordinates' performance can affect the subordinates' attitudes and behavior such as job satisfaction (Otley and Pollanen 2000). However, as far back as the 1970s, there is evidence to suggest the effect of performance measures on the subordinates' behavior may be indirect through some intervening variables. Both Hopwood (1972) and Otley (1978) suggested and found that evaluative style and the type of performance measures used can affect the subordinates' perception of interpersonal trust and justness in the evaluation process. Hopwood (1972) additionally found that it was not the use of accounting performance measures per se which affected behavior, but rather how the measures were used that affected behavior. Otley (1978) similarly found that it was not the use of accounting performance measures per se which affected behavior, but rather the extent to which the subordinates agree or disagree with the performance measures which affected behavior. These results suggest that the effects of performance measures used in performance evaluation on the subordinates' behavior and work-related attitudes may not be a direct one. Instead, it is likely that the effects may be indirect through the

subordinates' perception of the fairness of the performance measures used and the extent of interpersonal trust which is the use of such performance measures promotes.

This study therefore proposes that it is the extent to which the subordinates find the performance measures used for performance evaluation (a) enhances fairness (justness) in the evaluation process, and (b) promotes trust in their superiors, that will affect their behavior. Specifically, this study investigates if the use of a mix of financial and nonfinancial measures, affect managers' job satisfaction directly or indirectly through perception of (a) greater procedural fairness (justness) and (b) higher interpersonal trust. Figure 1 illustrates the model used in this study. The model indicates that the relationship between the use of the multiple performance measures and managers' job satisfaction are indirect through (a) procedural fairness, and (b) interpersonal trust.

The effects of a mix of financial and nonfinancial measures on subordinates' job satisfaction is studied here because of the increasing use of such a mix in contemporary organizational settings. In recent years, criticism towards traditional performance evaluation that relies solely on financial measures has been increasing (e.g. Atkinson et al. 1997; Ittner et al. 1997). It is argued that such measures are

Figure 1. The Relationship between Multiple Measures-based Performance Evaluation and Job Satisfaction



too late and too aggregated to be useful because they are narrow in focus, historical in nature and incomplete (Kaplan and Norton 1992; 1996b; Hoque et al. 2001). The contemporary literature in performance measurement suggests that to be competitive, a company should complement its financial measures with nonfinancial measures (e.g. Kaplan and Norton 1992, 1996a; Atkinson et al. 1997; Vaivio 1999).

However, in spite of the suggestion that multiple measures usage is likely to be associated with organizational effectiveness, there is a lack of empirical evidence on the impact of such a mix of measures on managers' attitudes and behavior (Ittner and Larcker 1988). Our study therefore attempts to address this gap in the literature by empirically investigating the behavioral consequences of multiple measures usage on performance evaluation. In particular, it empirically examines the effects of the use of multiple measures for performance evaluation on managers' job satisfaction.

Whilst there has been much prior research on the impact of performance evaluation styles (Brier and Hirst 1990; Lindsay and Ehrenberg 1994; Hartman

and Moers 1999; Otley and Fakiolas 2000; Hartmann 2000), our study differs from these prior studies in two ways. *First*, while prior studies on the behavioral effects of performance evaluative style usually contrasted between financial-based and nonfinancial-based measures (e.g. Hopwood 1972; Otley 1978; Brownell 1982; Hirst 1983; Govindarajan 1984; Ross 1994) our study will examine the impact of performance evaluation based on multiple measures (a mix of financial and nonfinancial measures). *Second*, while there have been prior studies on the use of multiple performance measures, these studies usually linked the multiple measures usage with organizational factors. Our study will investigate the effects of the multiple measures implementation on managers' behavior. Therefore, it relates the multiple measures with individual behavior. Hence, the results of our study are expected to complement the theory and results of prior studies on performance evaluative styles and the multiple performance measures.

In studying the relationship between the multiple measures-based performance evaluation and job satisfaction, our study will investigate the effects of two other

variables which are likely to act as intervening variables. These two variables are procedural fairness (justice) and interpersonal trust. The study of procedural fairness is important because of its likely effects on the organizational members' behavior (Milani 1975; Kenis 1979; Linqvist 1995; Libby 1999; Lau and Lim 2002). To date, there have been very few studies in management accounting which involve the investigation of the behavioral consequences of procedural fairness (Lindquist 1995; Libby 1999). Our study therefore attempts to provide additional evidence on the role of procedural fairness in management control systems.

Interpersonal trust is also investigated in our study because successful performance evaluation is likely to occur only in an environment where trust among organizational members can develop (Handerson 1980). Trust is an important feature of the performance evaluation process because increased interpersonal trust between the subordinates and their superiors is likely to lead to improved communication (Merlinger 1956; Read 1962). In a trusting environment, people feel free to relate to one another and this can lead to openness among organization members (Reina and Reina 1999). Simmons (1981: 243) suggests that "trust is the glue of effective, humane, and efficient organizations." In management accounting context, some researchers (e.g. Hopwood 1972; Otley 1978; Ross 1994; Lau and Buckland 2001) have investigated the role of trust in performance evaluation. Their results suggest that there is a significant relationship between performance evaluation style and interpersonal trust. Hence, our study hypothesizes that interpersonal trust, along with procedural fairness, may be the two important intervening variables which mediate the relationship between

the use of the multiple performance measures and managers' job satisfaction.

The expectations of this study are supported by our results. The results indicate that the relationships between multiple measures-based performance evaluation and subordinates' job satisfaction are significant. Further analysis found that these relationships are mediated by procedural fairness and interpersonal trust.

The next section discusses the theory development and hypothesis formulation. This is followed by the method, results, discussion, conclusions and limitations of the study.

Theory Development and Hypothesis Formulation

Multiple Measures-based Performance Evaluation

Multiple measures-based performance evaluation refers to the use of the combination both financial and non-financial measures to evaluate subordinates' performance. Although combining financial and nonfinancial measures is not a new practice, the widespread adoption of the Balanced Scorecard approach by many contemporary organizations (Kaplan and Norton 1992, 1993, 1996a, 1996b, 1996c) is also likely to result in an increased adoption rate for multiple measures-based performance evaluation. Hence, instead of adopting the traditional financial (accounting-based/high budget emphasis) versus nonfinancial (nonaccounting-based/low budget emphasis) dichotomy in performance evaluative style, our study conceptualizes performance evaluation style as the extent of adoption of multiple performance measures-based evaluations. It measures this variable as a continuum

ranging from a low extent of usage of multiple performance measures-based evaluations to a high extent of usage of multiple performance measures-based evaluations. The questionnaire is derived from the four perspectives of the Balanced Scorecard (financial, customer, internal business process, learning and growth).

Procedural Fairness

Procedural fairness (justice) is the perceived fairness of the means used to determine the amount of reward the employees receive. It relates to the employees' perception of the fairness of all aspects of the organization's process used by their superior to evaluate their performance, communicate performance feedback and determine their rewards such as promotions and pay increases (Folger and Konovsky 1989).

Early studies of procedural justice were associated with the work of Thibaut and Walker (1975). They found that (a) perception of fairness was positively associated with procedural preference, and (b) perception of fairness in procedures was positively associated with increased satisfaction. The work of Thibaut and Walker (1978) was based mainly on research findings in legal settings. Consequently, it had relatively restricted standard of fairness. Subsequent studies by Laventhal (1980) and Laventhal et al. (1980) argued that procedural justice was an important determinant of perceived fairness in the context of almost any allocation decision. Hence, they extended procedural justice research from legal settings to organizational settings. Further research in organizational setting found that procedural fairness judgments played a major role in affecting organizational members' attitudes and behavior (Lind and Tyler 1988). For example, a study by Lissak et al. (1983)

found that procedural justice showed a larger unique contribution to job satisfaction than did distributive justice. The study by Alexander and Ruderman (1987) also found that procedural justice significantly affected job satisfaction, evaluation of supervisors, reports of harmony and conflict, and trust in (upper-level) management. Additional support for the effect of procedural justice on evaluations of supervisors was also found in Greenberg's (1987b) and Kanfer et al.'s (1987) studies. With respects to the perceived fairness of outcomes (distributive fairness), Folger (1983) and Paese (1985) found that procedural justice enhanced the perception of distributive justice. Early and Lind (1987) found that procedural justice caused higher performance in the laboratory study, but not in the field study. Cornelius (1985) also found in a laboratory study that high fairness of procedures was more likely could improve performance than were low fairness procedures. Based on the findings above, Lind and Tyler (1988) concluded that procedural fairness has positive consequences for organizations and that procedural fairness judgments affect a variety of very important beliefs and attitudes among organizational members.

Interpersonal Trust

In this study, trust is conceptualized as interpersonal trust. Whitener et al. (1998) suggested that the criteria of trustworthy behavior are: (1) consistency across time and situations, which reflects the reliability and predictability of actions; (2) integrity, refers to the consistency between what the managers says and what he or she does; (3) sharing and delegation of control, such as participation in decision making; (4) communication, that is the information should be accurate and forthcoming, adequately explained, and open com-

munication (exchange thoughts and idea freely); and (5) benevolence or demonstration of concern, that is showing consideration and sensitivity for subordinates' needs and interests, acting in a way that protects subordinates' interests, refraining from exploiting others for benefit of one's own interests. Read (1962) noted that trusting subordinates expect their interests to be protected and promoted by superiors, feel confident about disclosing negative personal information, feel assured of full and frank information sharing, and are prepared to overlook apparent breaches of the trust relationship.

Interpersonal trust has also attracted the attention of management accounting scholars (e.g. Hopwood 1972; Otley 1978; Ross 1994; Lau and Buckland 2001). They have studied interpersonal trust in the context of performance evaluative styles. Hopwood (1972: 163) conceptualized interpersonal trust as "trust in supervisor" which he regarded as one of the subdimensions of "relation with supervisors." Otley (1978) conceptualized interpersonal trust as 'trust in superiors' and 'the trust a manager' felt he had in his group manager (p. 129). Ross (1994) had a similar concept of interpersonal trust and regarded it as 'trust between organization members,' 'trust between subordinate-superior pairs,' 'trust between colleagues' and 'trust that (subordinates) have in their superiors' (pp. 629-630). Lau and Buckland (2001) conceptualized interpersonal trust as 'the trust subordinates have in their superiors' and is defined as 'the firm belief or confidence the subordinates have in the justice of their superiors.' Our study uses Read's (1962) concept of trust as well as his instrument. He conceptualized trust as "subordinate's trust or confidence in the superior's motives and intentions with respect to matters relevant to the

subordinate's career and status in the organization."

Multiple Measures-based Performance Evaluation and Managers' Job Satisfaction

Extant literature suggests that there is a relationship between performance evaluation style and subordinates' behavior and work-related attitudes (Kren and Liao 1988; Briers and Hirst 1990; Lindsay and Ehrenberg 1993; Otley and Fakiolas 2000). Hence, multiple measures-based performance evaluation may also be related to the subordinates' behavior and work-related attitudes because multiple measurement system is capable of providing signals and in motivating breakthrough improvements in critical activities (Hoque et al. 2001). In addition, Kaplan and Norton (1996b) argued that multiple measures might function as the cornerstone for future success. Hence, it is likely that multiple measures may be associated with job satisfaction. However, such relationship is likely to be mediated by procedural fairness (Lau and Lim 2002) and interpersonal trust (Hopwood 1972; Otley 1978; Ross 1994; Lau and Buckland 2001).

Multiple Measure-based Performance Evaluation and Procedural Fairness

Procedural fairness is the perceived fairness of the means used to determine the amount of reward or compensation the employees receive. In performance evaluation context, procedural fairness is likely to be important to the subordinates. Subordinates usually consider performance evaluation to be important because it is often linked to the reward system that will determine their remunerations and pro-

motions. They therefore expect the procedures use to evaluate their performance to be fair. It is likely that multiple measures usage in performance evaluation may be viewed as a fair procedure by these subordinates for the following reasons.

Performance evaluation that takes into accounts both financial and nonfinancial 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. As suggested by Kaplan and Norton (1996), it considers both lagging and leading indicators, and both short- and long-terms objectives. It also views both external measures and internal measures of critical business processes, innovation, and learning and growth. In addition, multiple measures-based evaluation also see the balance in terms of the outcome measures—the results from past efforts—and the measures that drive future performance. Finally, such evaluation is also likely to be perceived as a fair procedure because it is balanced in viewing the subordinates performance both in objective terms, easily quantified outcome measures and in subjective terms, somewhat judgmental, performance drivers of the outcome measures. For example, it is possible that in a certain period, such as in the research stage for developing a product, managers may produce unsatisfying financial indicators. However, this innovative step may lead to a better organizational performance in the long term. Therefore, if they are merely evaluated based on short term financial performance, it may result that the managers are poor performer which in turn may lead to managers perception such evaluation is unfair. On the other hand, if

the performance evaluation also considers the performance in terms of innovation, the managers may feel such procedure is fair. It is therefore likely that subordinates whose performance is evaluated based on multiple measures may regard multiple measures-based performance evaluation as fair.

Multiple Measures-based Performance Evaluation and Interpersonal Trust

Zand (1997) argued that a company's reward system could promote interpersonal trust as long as the reward system is collaborative, integrative and "win-win." Win-win reward system means "one person's gain is a gain for other person as well, and one person's loss is also loss for the other." (Zan 1997: 118). In line with Zand (1997) argument, Whitener et al. (1998) contended that performance evaluation and reward systems can facilitate or inhibit managerial trustworthy behavior, which in turn can affect the trust of subordinates to their superiors. It is therefore necessary for organizations to design their performance evaluation systems in such a way that may enhance the trust of subordinates towards their superior. Performance evaluation which is based on multiple measures is likely to promote the subordinates' trust in their supervisors.

It is possible that whilst some aspects of the subordinates' performance (e.g. financial aspects) may be unsatisfactory, other indicators, such as customer satisfaction, product development and innovation may be satisfactory. If performance evaluation is only based on limited number of measures (e.g. financial measures alone), subordinates may receive poor evaluations. In contrast, if multiple measures-based evaluation is used, the sub-

ordinate may be evaluated as a good overall performer. In such situations, the subordinates are likely to view that their superior has acted benevolently which may lead to higher interpersonal trust of subordinates toward their superiors. It is therefore likely that there is a positive relationship between the use of multiple measure-based performance evaluation and interpersonal trust.

Procedural Fairness and Job Satisfaction

Extant literature in legal, political and organizational context suggests that procedural fairness is likely to affect behavior (e.g. Earley and Lind 1987; Earley 1984; Cornelius 1985; Alexander and Ruderman 1987; Folger and Konovsky 1989; McFarlin and Sweeney 1992). Tang and Sarfield-Baldwin (1996: 30) argued that "if managers can apply rules fairly and consistently to all employees and reward them based on performance and merit without personal bias, then employees will have a positive perception of procedural justice, which may lead to a higher satisfaction, commitment and involvement." Lindquist (1995) found that the interaction between process control (vote or voice) and the fairness of budget (attainable or unattainable) affected task and budget satisfaction. It is therefore likely that there is a positive relationship between procedural fairness and job satisfaction.

Interpersonal trust and Job Satisfaction

Zand (1997) defines trusting behavior as a willingness to increase vulnerability to another person whose behavior cannot be controlled, in situation in which a potential benefit is much less than potential loss if the other person abuses the

vulnerability. Further, he suggests that two people who behave in trusting manner will greatly increase their problem solving effectiveness. Additionally, people who trust each other can synchronize, help each other and work together constructively. Trusting behavior can improve decision quality and its implementation. Lippit (1982) argues that the existence of trust between organizational members can increase both problem solving and performance. Similarly, Reina and Reina (1999) noted that "directly or indirectly trust is related to individual, group, and organizational performance." This is likely to increase their commitment to each other and hence experience greater job satisfaction. It is therefore likely that trust is positively associated with the subordinates' job satisfaction.

As previously discussed, multiple measures-based performance is expected to be positively related to job satisfaction. Since multiple measures-based performance evaluation is also expected to be positively associated with procedural justice (fairness) and interpersonal trust, and procedural justice (fairness) and interpersonal trust are also expected to be positively related to job satisfaction, it is possible to conclude that the effect of multiple measures-based performance evaluation on job satisfaction may be mediated by the intervening effect of procedural fairness and interpersonal trust. The above discussion therefore suggests that there is an indirect relationship between multiple measures-based performance evaluation and managers' job satisfaction via procedural fairness and interpersonal trust (see Figure 1). The following hypothesis is therefore tested:

H₁ : The relationship between multiple measures-based performance evaluation and managers' job satisfac-

tion is indirect through procedural fairness and interpersonal trust.

Method

Data and Sample

Data for this study were collected using a questionnaire survey sent to managers from organizations listed as manufacturing companies in *Indonesian Capital Market Directory*. The selection of our sample from Indonesia helps to address the dearth of systematic research in Asian countries. Systematic research in management accounting has tended to concentrate in Western countries. The results of our study may assist to ascertain if managers from Asian countries react in a similar manner as managers from Western countries.

The manufacturing sector was selected for this study because it is the largest sector (52%) listed in the directory. A total of 146 manufacturing companies were listed. Only manufacturing companies employing more than 100 employees each were selected to provide some control over the size of the organizations. As expected, all except one of the 146 companies have more than 100 employees each. Hence, one company was excluded from the sample.

Although our sample is derived from manufacturing organizations, our study is not intended to investigate a particular function (e.g. manufacturing). In order to ascertain if the results are generalized across functional areas, we selected samples from across functional areas. This approach is consistent with many previous management accounting studies (e.g. Hopwood 1972; Otley 1978; Brownell 1982; Brownell and Dunk 1991; Otley and Pollenan 2000; Lau and Lim 2002).

In order to provide some degree of control over the seniority of the respondents across organizations, only functional heads were selected. The functional heads were selected as follows. Telephone calls were made to each company to obtain the names of the functional heads. This method ensures that only the selected functional heads would receive the questionnaires and be the persons to answer the questionnaires. In order to prevent the sample from being biased by the control system of any one company, a maximum of 4 managers were obtained from any one company.

A total of 229 managers' names were obtained from the 112 companies which were willing to supply the researchers with their managers' names. A questionnaire together with a prepaid return addressed envelope and a covering letter explaining the objectives of the research was mailed to each of the 229 intended respondents. As the instruments used to measure the variables examined in this study were developed in English and as English is not widely used in Indonesia, it was necessary to translate the instruments into the Indonesian language. The translation process involved three separate steps as suggested by Hofstede (1980). *First*, one of the researchers who is an Indonesian national and located in Australia translated the questionnaire from English into Indonesian. *Second*, an Indonesian university professor, who is bilingual (English and Indonesian), translated the Indonesian version of the questionnaire back into English. The last step involved a crosscheck by the researchers of the latter English version with the original English version to ensure that the translation was accurately done. Only the Indonesian version of the questionnaire was used in the survey.

The questionnaires were mailed out in November 2001. Remainder letters were sent three weeks after the initial mailing. Out of 229 questionnaires mailed, 83 responses (36%) were returned. Given that the survey was undertaken in Indonesia, a response rate of more than 30 percent may be regarded as unusually high since the normal response rate to questionnaire survey in Indonesia generally range from 10 percent to 16 percent (Gudono and Mardiyah 2000). Thirteen responses were excluded from the study because of the failure of the respondents to complete the whole questionnaire. Hence, there were 70 usable responses.

The demographic data indicated that, on average, the respondents' age was 41.3 years and they had held their current positions for 5.4 years. The average experience of the respondents in their area of responsibility is 10.4 years.

Measurement Instruments

Multiple Measures-Based Performance Evaluation. This variable was measured using a modified 20-item instrument developed by Hoque et al. (1997) and subsequently used by Hoque and James (2000) and Hoque et al. (2001). The 20 items were derived from Kaplan and Norton's (1992) four dimensions of the Balanced Scorecard. The questionnaire was modified because it was developed to measure organizational performance while in this study it was used to measure individual manager performance. The instrument asked respondents to indicate how much importance their superior attaches to the twenty items when the superior evaluate the subordinates' performance. A factor analysis indicates that two items (items 13 and 17), which were expected to load to customer perspective, loaded into innovation and learning group and inter-

nal business perspective, respectively. Consequently, those two items were not included in further analysis. However, the results of the hypothesis tests undertaken later indicated that there were no statistical differences in the results regardless of whether the multiple measures was assessed by the 18 items or by all the original 20 items. The Cronbach alpha coefficient (Cronbach 1951) for this instrument in this current study was 0.95.

Procedural Fairness. This variable was measured using a four-item, five-point Likert-type scale instrument developed by McFarlin and Sweeney (1992). It asks respondents to rate the fairness of the procedures used to evaluate their performance, to communicate performance feedback, and to determine their pay increases and promotion. An overall measure of procedural fairness is obtained by summing up responses to the four individual items. The factor analysis extracted only one factor with eigenvalue greater than one (eigenvalue= 2.351; total variance explained=58.77). This supports the unidimensional nature of this instrument. A reliability check produced a cronbach alpha of 0.77.

Interpersonal Trust. Trust is measured using a four-item instrument developed by Read (1962) and used by Hopwood (1972), Otley (1978), and Ross (1994). It measures the level of trust held by subordinates in their superiors. The cronbach alpha coefficient for this instrument is 0.79. The factor analysis extracted only one factor with eigenvalue greater than one (eigenvalue= 2.477; total variance explained= 61.91). This supports the unidimensional nature of this instrument.

Job satisfaction. Job satisfaction was measured using the 20 items, short version of the Minnesota Satisfaction Questionnaire (MSQ) (Weiss et al. 1967). This

Table 1. Descriptive Statistics

Variables	Mean	Standard Deviation	Theoretical Range		Actual Range	
			Min	Max	Min	Max
MM-based evaluation	80.39	23.47	18.00	126.00	31.00	125.00
Procedural fairness	13.06	2.60	4.00	20.00	7.00	18.00
Trust	13.43	3.14	4.00	20.00	7.00	20.00
Job satisfaction	65.53	11.45	19.00	95.00	40.00	92.00

scale has been shown to possess high level of discriminated validity (Dunham et al. 1977), and has been used in other management accounting research (e.g. Brownell 1982; Chenhall and Brownell 1988; Harrison 1993; Coo and Tan 1997). A factor analysis of the 20 items indicated four underlying factors, but with one predominant factor (factor 1), which has eigenvalue of 7.99 and accounting for 39.97 of the variance. All items loaded above 0.5 on the first factor except for item 13 (My pay and the amount of work I do) which has a factor loading of only 0.426 on factor 1. Hence, it was dropped from factor 1. Consequently, only the remaining 19 items of job satisfaction were used in further analysis. However, the results of the hypothesis tests undertaken later indicated that there were no statistical differences in the results, regardless of whether job satisfaction was measured by 19 items or by all the original 20 items. The Cronbach alpha coefficient was 0.92.

Descriptive statistics for the variables used in this study are presented in Table 1.

Empirical Results

This study investigates whether multiple measures-based performance evaluation is associated with subordinates' job satisfaction and if so, whether such rela-

tionships are indirect through procedural fairness and interpersonal trust. A path analysis is considered as an appropriate technique to investigate such relationships. Cohen and Cohen (1983: 26) suggest that to assess the adequacy of regression models, the residuals of the estimated values of the regression should be tested. Therefore, before testing the hypotheses, tests were performed to ensure that the inherent assumptions of the regression models were satisfied. Tests undertaken included testing for the normality of residual, homogeneity of variance of residuals and the appropriateness of the linear models. The results of these tests indicate that the inherent assumptions of the models used were validated.

The correlation matrix among variables studied is presented in Table 2. The results provide preliminary support for the hypothesis. They indicate a positive significant relationship between (a) multiple measure-based performance evaluation and job satisfaction, (b) multiple measure-based performance evaluation and procedural fairness, (c) multiple measure-based performance evaluation and interpersonal trust, (d) procedural fairness and job satisfaction, and (e) interpersonal trust and job satisfaction.

To test the Hypothesis H_1 , which states that the relationship between multiple

Table 2. Correlation Matrix among Independent and Dependent Variables

	Procedural Fairness	Trust	Job Satisfaction
MM-based evaluation	0.304**	0.383**	0.261*
Procedural fairness		0.476**	0.426**
Trust			0.395**

* p<0.05 (1-tailed)

** p<0.01 (1-tailed)

Table 3. Path Analysis Results for Job Satisfaction

Dependent Variable	Independent Variable	Path Coefficient	t-value	p-value
Procedural fairness	MM-based evaluation	0.304	2.629	0.011
Trust	MM-based evaluation	0.383	3.423	0.001
Job satisfaction	MM-based evaluation	0.087	0.739	0.462
	Procedural fairness	0.294	2.379	0.020
	Trust	0.222	1.736	0.087

measure-based performance evaluation and the subordinates' job satisfaction is indirect through procedural fairness and trust, further analyses are needed to ascertain if the relationships between multiple measures-based performance evaluation and job satisfaction are indirect via procedural fairness and trust.

The following calculations, based on the values of the path coefficient in Table 3, indicate there is an indirect effect of multiple-measures based evaluation on job satisfaction through procedural fairness and interpersonal trust.

Path (1)		
MM-Based - PF - JS	$0.304 \times 0.294 =$	0.089
Path (2)		
MM-Based - Trust - JS	$0.383 \times 0.222 =$	0.085
Indirect effect		0.174

The results show that the relationship between multiple measures-based performance evaluation and job satisfaction comprises two effects. *First*, there is a direct effect of 0.087 (see Table 3). *Second*, there is an indirect effect of 0.174, which can be further decomposed into the portion attributable to procedural fairness (0.089) and the portion attributable to trust (0.085). Based on Bartol's (1983, p.809) criterion, this indirect effect is meaningful since it exceeds the absolute amount of 0.05. Using Baron and Kenny (1986) argument, it can be concluded that procedural fairness and trust mediated fully the relationship between multiple measures-based performance evaluation and job satisfaction because from Table 3, it can be seen that after controlling the intervening effect of procedural fairness and trust, the direct effect of 0.087 is not significant ($p < 0.462$). Based

Table 4. Decomposition of the Observed Correlations

Path Linkage	Observed Correlation	Direct Effect	Indirect Effect
MM-based evaluation/Procedural fairness	0.304**	0.304**	
MM-based evaluation/Trust	0.383**	0.383**	
MM-based evaluation/ Job satisfaction	0.261*	0.087	0.174

** $p < 0.01$

* $p < 0.05$

on these results, Hypothesis H1, which states that the relationship between multiple measure-based performance evaluation and the subordinates' job satisfaction is indirect through procedural fairness and trust is supported.

Table 4 provides a summary of the decomposition of the zero order correlations between multiple measures usage and job satisfaction into direct effects and indirect effects.

Discussion, Conclusion, and Limitations

The main objective of this study is to investigate (1) if multiple measures usage in managerial performance evaluation is associated with job satisfaction and if so, (2) whether such relationships are indirect and mediated by procedural fairness and trust. It argues that the use of multiple measures in managerial performance evaluation is positively associated with job satisfaction. Further, it hypothesizes that such relationships are indirect and mediated by procedural fairness and interpersonal trust. In order to test the hypothesis, this study employs a path analytical model to analyze 70 responses collected from managers of Indonesian listed manufacturing companies.

The results indicate that there is a significant relationships between multiple measures-based performance evaluation and job satisfaction. Further analysis suggests that such relationships are fully mediated by procedural fairness and trust. These results suggest that fair procedures and trust of subordinates towards their superior play important roles in performance evaluation. They suggest that multiple measures-based performance evaluation is associated with enhanced procedural fairness and trust in superiors. These, in turn, are associated with higher job satisfaction and lower job-related tension.

With respect to procedural fairness, the results of this study supported the previous findings of procedural fairness studies in legal, political and organizational contexts (e.g. Earley and Lind 1987; Earley 1984; Cornelius 1985; Alexander and Ruderman 1987; Folger and Konovsky 1989; McFarlin and Sweeney 1992) and in management accounting context (e.g. Lindquist 1995; Libby 1999; Lau and Lim 2001, 2002). The literature above suggests that procedural fairness affects behavior. With regard to the role of trust in performance evaluation, the results of this study are also consistent with those of the previous studies (e.g. Ross 1994; Lau and Buckland 2001). Therefore, our study pro-

vides additional evidence on the importance of procedural fairness and trust in the performance evaluations. These results may have important implications for organizations in the design and implementation of effective and efficient management accounting control systems, especially in performance evaluations.

As with other empirical studies, there are limitations associated with this study. *First*, there are the limitations associated with the survey questionnaire method, such as the inability of the questionnaires to be clarified due to the absent of the researcher. *Second*, although the sample of this study was selected from across functional areas, the number of responses from any particular function is small. Hence, analysis of results on functional basis was not undertaken. In addition, since our sample was selected from larger-sized organizations

with more than 100 employees each, it is unclear if our results can be generalized to smaller-sized organization with less than 100 employees each. *Finally*, as this study only selected sample from the manufacturing sector, generalizing our results to nonmanufacturing sector should be made with caution.

Notwithstanding the aforementioned limitations, at best of our knowledge this study is the first to explore the relationships between multiple measures-based usage in managerial performance and managers' behavior. These results provide timely evidence which may have important practical and theoretical implications for the adoption of multiple measures-based performance evaluation which is gaining popularity in increasing number of organizations globally.

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QUESTIONNAIRE

1. Procedural Fairness

Please respond to each of the following questions by *circling* a number from 1 to 5 based on the following scale:

- | | |
|---------------|-------------|
| 1 Very unfair | 4 Fair |
| 2 Unfair | 5 Very fair |
| 3 Neutral | |

	<i>Very unfair</i>			<i>Very fair</i>	
How fair are the procedures used to evaluate employees' performance?	1	2	3	4	5
How fair are the procedures used to determine promotions?	1	2	3	4	5
How fair are the procedures used to communicate performance feedback?	1	2	3	4	5
How fair are the procedures used to determine pay increases?	1	2	3	4	5

2. Interpersonal trust

Please respond by circling a number from 1 to 5, based on the following scale, for each of the items.

- | | |
|---------------------------|--------------------------|
| 1 To a very little extent | 4 To a great extent |
| 2 To a little extent | 5 To a very great extent |
| 3 To some extent | |

	<i>To a very little extent</i>			<i>To a very great extent</i>	
Does your superior take advantage of opportunities that come up to further your interests by his/her actions and decisions?	1	2	3	4	5
How free do you feel to discuss with your superior the problems and difficulties you have in your job without jeopardizing your position or having it held against you?	1	2	3	4	5
How confident do you feel that your superior keeps you fully and frankly informed about things that might concern you?	1	2	3	4	5

Superiors at times must make decisions which seem to be against the interests of their subordinates. When this happens to you as a subordinate, how much trust do you have that your superior's decision is justified by other considerations?

1 2 3 4 5

3. Multiple measures-based performance evaluation

When your superior (your immediate boss) is evaluating *your performance*, how much importance do you think he or she attaches to the following items?

Please respond by circling a number from 1 to 7, based on the following scale, for each of the items listed below.

- | | | |
|--------------------------|-----------------------|---------------------|
| 1 Never important | 4 Sometimes important | 6 Usually important |
| 2 Seldom important | 5 Often important | 7 Always important |
| 3 Occasionally important | | |

	<i>Never important</i>			<i>Always important</i>			
	1	2	3	4	5	6	7
Operating income	1	2	3	4	5	6	7
Sales growth	1	2	3	4	5	6	7
Return-on-investment	1	2	3	4	5	6	7
Manufacturing lead time	1	2	3	4	5	6	7
Rate of material scrap loss	1	2	3	4	5	6	7
Labour efficiency variance	1	2	3	4	5	6	7
Material efficiency variance	1	2	3	4	5	6	7
Percent defective products shipped	1	2	3	4	5	6	7
Ratio of good output to total output	1	2	3	4	5	6	7
Number of new patents	1	2	3	4	5	6	7
Number of new product launches	1	2	3	4	5	6	7
Time-to-market new products	1	2	3	4	5	6	7
Market share	1	2	3	4	5	6	7
On-time delivery	1	2	3	4	5	6	7
Number of customer complaint	1	2	3	4	5	6	7
Survey of customer satisfaction	1	2	3	4	5	6	7
Warranty repair cost	1	2	3	4	5	6	7
Customer response time	1	2	3	4	5	6	7
Cycle time from order to delivery	1	2	3	4	5	6	7
Percent shipments returned due to poor quality	1	2	3	4	5	6	7

4. Jobs satisfaction

The purpose of the following questions is to give you a chance to tell how you feel about your present job, what are the things that you are satisfied with, and what are the things that you are not satisfied with. Please be frank and honest in your responses. This study is strictly confidential.

Please respond by *circling* a number from 1 to 5, based on the following scale, for each of the item listed below.

In the following questions, ask yourself: "How satisfied am I with this aspect of my job?"

- 1 means I am NOT SATISFIED (this aspect of my job is much poorer than I would like it to be).
- 2 means I am ONLY SLIGHTLY SATISFIED (this aspect of my job is not quite what I would like it to be).
- 3 means I am SATISFIED (this aspect of my job is what I would like it to be).
- 4 means I am VERY SATISFIED (this aspect of my job is even better than I expected it to be).
- 5 means I am EXTREMELY SATISFIED (this aspect of my job is much better than I hoped it could be).

	<i>Not satisfied</i>		<i>Extremely satisfied</i>		
Being able to keep busy all the time	1	2	3	4	5
The chance to work alone on the job	1	2	3	4	5
The chance to do different things from time to time	1	2	3	4	5
The chance to be somebody in the community	1	2	3	4	5
The way my boss handles employees	1	2	3	4	5
The competence of my superior in making decisions	1	2	3	4	5
Being able to do things that don't go against my conscience	1	2	3	4	5
The way my job provides for steady employment	1	2	3	4	5
The chance to do things for other people	1	2	3	4	5
The chance to tell people what to do	1	2	3	4	5
The chance to do something that makes use of my abilities	1	2	3	4	5

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The way organization policies are put into practice	1	2	3	4	5
My pay and the amount of work I do	1	2	3	4	5
The chances for advancement on this job	1	2	3	4	5
The freedom to use my own judgment	1	2	3	4	5
The chance to try my own methods of doing the job	1	2	3	4	5
The working conditions	1	2	3	4	5
The way my co-workers get along with each other	1	2	3	4	5
The praise I get for doing a good job	1	2	3	4	5
The feeling of accomplishment I get from the job	1	2	3	4	5