The Impact of Performance Measures on Employee Fairness Perceptions, Job Satisfaction and Organisational Commitment

Sharon L.C. Tan*
Chong M. Lau**

Abstract

This research examines how the use of nonfinancial performance measures for employee performance evaluation affects three employee outcomes – procedural fairness, job satisfaction and organisational commitment.

The results, based on a sample of 130 managers support our expectations. They indicate the following. First, nonfinancial measures have a significant direct effect on procedural fairness. Second, the effects of nonfinancial measures on employee job satisfaction and organisational commitment are indirect through procedural fairness. Finally, the results for the nonfinancial measures model are similar to those of the financial measures model. These results may have important theoretical and practical implications on the choice of performance measures for performance measurement and evaluation.

Keywords:

Nonfinancial Measures
Procedural Fairness
Job Satisfaction
Organisational Commitment

*Singapore Polytechnic, Singapore
** Curtin University of Technology

Introduction

The choice of performance measures used to evaluate employee performance is critical because it is likely to affect employees' attitudes such as their perceptions of fairness, job satisfaction and organisational commitment. There has been increasing emphasis on the use of nonfinancial performance measures in the accounting literature recently because of the inadequacies of financial measures (Ittner and Larcker, 2001). Financial performance measures are seen as too late, too aggregated, narrow in focus, historical, backward-looking and incomplete (Chenhall, 1997; Hoque, Mia and Alam, 2001; Ittner and Larcker, 2001) It has also been argued that financial measures promote short-term thinking (Hayes and Garvin, 1982; Kaplan, 1983) and fail to adequately capture the long-term implications of managerial effort (Hemmer, 1996).

Due to these deficiencies of financial performance measures, organisations have paid increasing attention on nonfinancial measures which may be broader, focus on long-term prospective and reflect different dimensions of managerial performance (Banker and Datar, 1989; Kaplan and Atkinson, 1998; Ittner and Larcker, 2001). Hence, the use of nonfinancial measures may engender more positive employee behaviour such as improved perceptions of procedural fairness, better job satisfaction and higher organisational commitment.

There is a need to understand how the use of nonfinancial measures affects employee behaviours. There is also a need to understand if the reactions of employees generated by the use of nonfinancial measures are similar or different from those generated by the use of financial measures. While there are several studies on the behavioural effects of nonfinancial measures (e.g., Lau and Moser, 2008) as well as on the behavioural effects of comprehensive performance measurement systems (e.g., Hall, 2008; Burney, Henle and Widener, 2009; Hartmann and Slapnicar, 2009), very few studies have compared the behavioural effects of nonfinancial measures vis-a-vis financial measures. In their study on the relationship between nonfinancial measures and employee job satisfaction, Lau

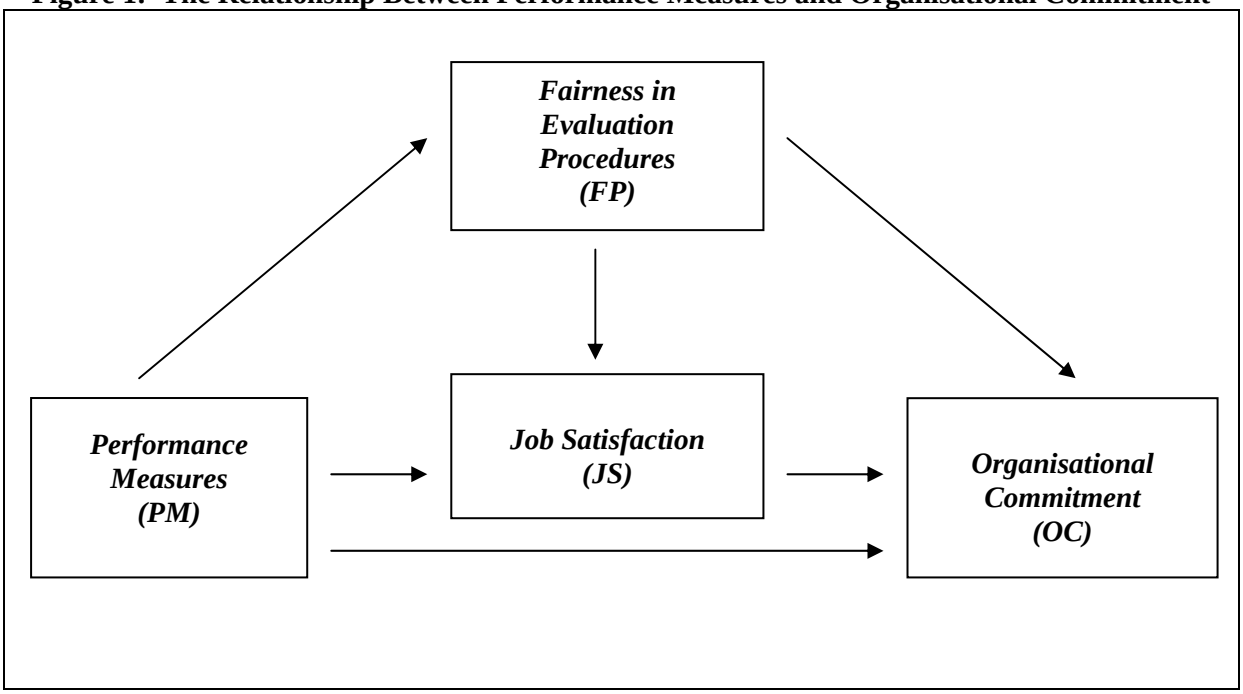
and Sholihin (2005) found that the effects of nonfinancial measures were similar to those of financial measures. These results are surprising as the characteristics of nonfinancial measures are very different from those of financial measures. There is also an abundance of literature to suggest that the use of nonfinancial measures will address the inadequacies of financial performance. There is therefore clearly a need for additional research to ascertain if the results of Lau and Sholihin (2005) are replicable.

Our study therefore seeks to re-examine the use of nonfinancial measures and financial measures in performance evaluation on three employee outcomes, namely, procedural fairness perceptions, job satisfaction and organisational commitment. The results of our findings would be useful because organisations need to understand how nonfinancial measures and financial measures affect employee behaviours so that they can develop the best combination of performance measures for evaluating employee performance.

This study will also contribute by addressing other gaps in the literature. It will provide insight into the relationship between performance measures and organisational commitment. It will also investigate the intervening effects of two variables suggested by Hopwood (1972) and Otley (1978). They are (i) employees' perceptions of fairness in performance evaluation procedures and (ii) employees' job satisfaction. The study of perceptions of fairness is important because fairness perceptions are associated with a range of important consequential behaviours (Hopwood, 1972; Lind and Tyler, 1988). Our study contributes to this important area by studying employees' perceptions of fairness in the context of nonfinancial measures and financial measures. It will not only re-examine Lau and Sholihin (2005) by studying the relationship between performance measures and job satisfaction, but will also extend Lau and Sholihin (2005) by incorporating organisational commitment in the model.

The model is presented in Figure 1. Specifically, it proposes that the effects of the use of *nonfinancial* performance measures (1) on employees' perceptions of procedural fairness are direct, (2) on employee job satisfaction are indirect through procedural fairness, and (3) on employee organisational commitment are indirect through procedural fairness and job satisfaction. A similar model is also used to ascertain if similar or different effects are found for *financial* measures.

Figure 1: The Relationship Between Performance Measures and Organisational Commitment



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

Hypotheses Development

Performance Measures and Organisational Commitment

Kaplan (1983) argues that traditional, financially based performance measurement systems may be inadequate and that nonfinancial measures for product innovation, product leadership, and customer satisfaction may be better indicators for evaluating managers' performance. Kaplan and Norton (1996) further suggest that top management do not rely on a single measure to evaluate performance. They need both financial and nonfinancial measures.

The nonfinancial performance measures adopted in this study are derived from the three nonfinancial perspectives of the Balanced Scorecard (Kaplan and Atkinson, 1998). The *Customer perspective* encompasses measures such as customer satisfaction, market share, customer response time and cycle time. The *Internal business processes perspective* includes key measures such as manufacturing lead time, efficiency variance and defect rates. The *Learning and growth perspective* includes measures such as number of new patents, new product launches and time to market new products.

The use of nonfinancial measures for performance evaluation is likely to affect organisational commitment. However, prior research has shown that this relationship may be mediated by employees' perceptions of fairness and job satisfaction arising from the use of such nonfinancial measures in performance evaluation. Both Hopwood (1972) and Otley (1978) found performance measures affected not only employees' attitudes such as organisational commitment, but also their perceptions of fairness in the evaluation process and their job satisfaction. They suggest that the effects of performance measures on employees' attitudes may be indirect through their perceptions of fairness of the measures used in performance evaluation, and their job satisfaction arising from the use of these performance measures. The following sections provide the theoretical justifications for these propositions.

Nonfinancial Performance Measures and Perceptions of Fairness

Nonfinancial performance measures which include customer satisfaction, innovation, internal business processes, and learning and growth are broad and multidimensional (Kaplan and Norton, 1996). The use of different dimensions of nonfinancial performance measures to evaluate employees' performance is likely to be perceived by employees as fairer than the reliance on only one dimension of their performance. Consequently, employees who invest their time in building good relationships with customers, developments of new products and innovations and are being evaluated on these performance drivers are likely to perceive these performance evaluation measures as fair. This suggests that the use of multiple nonfinancial performance measures is likely to be associated with perceptions of increased fairness in the performance evaluation process.

Perceptions of Fairness and Organisational Commitment

Fairness of organisational procedures may have an impact on organisational commitment because procedures define the organisation's capacity to treat employees fairly (McFarlin and Sweeney, 1992). Tang and Sarfield-Baldwin (1996) argue that if rules are applied fairly and consistently to all employees and if they are rewarded based on their performance and merit, then employees will perceive the evaluation process as fair. This will lead to higher organisational commitment. However, if employees perceive organisational procedures as unfair, they may take destructive actions which may lead to reduced organisational commitment. Unfair procedures will cause a reduction in organisational commitment even when an employee is satisfied with the outcome. On the other hand, employees may be dissatisfied with their outcomes, yet remain committed to an organisation if they perceive procedures for their unattained outcomes to be fair. In addition, if employees perceive procedures as fair, they are less likely to blame their supervisors for the unfavourable outcomes.

This is less likely to lead to a reduction in organisational commitment.

Considerable research has also shown that perceptions of fairness are associated with positive organisational commitment (Folger and Konovsky, 1989; Konovsky and Cropanzano, 1991; Kim and Mauborgne, 1993). Based on the above research findings and discussions, it is possible to conclude that there is a positive association between perceptions of fairness in performance evaluation procedures and organisational commitment. Accordingly, the following hypothesis is tested:

H1: The relationship between nonfinancial measures-based performance evaluations and employee organisational commitment is indirect through employees' perceptions of procedural fairness in performance evaluation procedures.

Nonfinancial Measures-Based Performance Evaluation and Job Satisfaction

The types of performance measures that an organisation uses to evaluate its employees' performance are likely to affect their employees' job satisfaction because the evaluation results will affect their employees' self-esteem, rewards and promotions. Hopwood (1972) suggests that financial measures emphasise short-term performance while evaluation of managerial performance is often concerned with more long-term considerations. In particular, Hopwood (1972) argues that the use of financial measures to evaluate managerial performance would have negative effects on employee job-related tension and job satisfaction because of the incomplete nature of financial measures. Hence, if employees are not evaluated on dimensions they consider as important, they are likely to experience conflict, tension, anxiety and are therefore likely to be dissatisfied with their job. Consequently, performance evaluation based on multiple nonfinancial measures is likely to improve employee job satisfaction. An employee may perform well in indicators such as customer satisfaction, product development and innovation. As such if she is evaluated based on these dimensions, she is likely to perceive the performance evaluation as fair and consequently experiences satisfaction with the evaluation process. Prior studies' findings also suggest that the adoption of multiple nonfinancial measures to evaluate employee performance has a significant effect on employee job satisfaction (e.g., Lau and Sholihin, 2005). Hence, it is likely that there is a positive relationship between the use of multiple nonfinancial measures performance evaluation and employee job satisfaction.

Job Satisfaction and Organisational Commitment

There is considerable empirical support for a significant and positive relationship between job satisfaction and organisational commitment. Studies by Price and Mueller (1986), Mathieu (1988), and Mathieu and Hamel (1989) support the hypothesis that job satisfaction is an antecedent of organisational commitment.

Mathieu and Zajac (1990) found that positive association between job satisfaction and organisational commitment is strongest for affective commitment. Kitchard and Strawser (2001) suggest that employees who are satisfied with their jobs may develop emotional attachments (high affective commitment) to their organisations. Together, these studies suggest that job satisfaction is an antecedent of organisational commitment. Job satisfaction is therefore likely to be positively associated with affective organisational commitment. The above discussion and that in the previous section, therefore, suggest that there is an indirect relationship between multiple nonfinancial measures-based performance evaluation and employee organisational commitment via employee job satisfaction.

Accordingly, we propose:

H2: The relationship between nonfinancial measures-based performance evaluations and employee organisational commitment is indirect through employee job satisfaction.

Procedural Fairness and Job Satisfaction

There is considerable empirical evidence to suggest that procedural fairness is positively related to employee job satisfaction (Alexander and Ruderman, 1987; McFarlin and Sweeney, 1992, Konovsky and

Cropanzano, 1991,). More importantly, studies by Lissak, Mendes and Lind, (1983), Alexander and Ruderman, (1987), and Tremblay and Roussel, (2001) indicate that procedural fairness is significantly related to job satisfaction and that the effects are much stronger than those of distributive fairness.

Tremblay and Rouseel (2001) note that if employees perceive procedures as unfair, they may decrease their contributions which may take the forms of reporting late for work, taking long leave and possible sick leave which are behavioural expressions of high job dissatisfaction. Lind and Tyler (1988) argue that if people perceive the organisation's decision-making procedures as fair, they develop not only positive attitudes toward the organisation as a whole, but also job satisfaction. Schappe (1996) also notes that employees value fair procedures which are important determinants of their job satisfaction. Based on the above discussions and results of studies on the effects of procedural fairness on job satisfaction, it is possible to conclude that perceptions of fairness should significantly predict job satisfaction.

It has also been previously argued that the use of nonfinancial measures-based performance evaluation is likely to affect perceptions of fairness in evaluation procedures and job satisfaction. Hence, the relationship between the use of nonfinancial measures-based performance evaluation and job satisfaction is likely to be indirect through perceptions of fairness in evaluation procedures. Accordingly, we propose:

H3: The relationship between perceptions of fairness in performance evaluation procedures and employee organisational commitment is indirect through employee job satisfaction.

Financial Measures as Performance Criteria

The preceding section suggests that the use of nonfinancial measure for evaluating employee performance may lead to higher organisational commitment through employees' perceptions of fairness in the evaluation procedures and their job satisfaction. However, the use of financial measures will not necessarily lead to adverse consequences. Financial measures might be more useful because they may be more objective as compared with nonfinancial measures. Hence, they may also lead to favourable behavioural consequences because of their objectivity (Ross, 1994).

Financial measures have also been the most popular and widely used evaluation tools because they focus on profitability which is considered the most important goal in most organisations (Kaplan and Atkinson, 1998). According to Hopwood (1972), financial measures can also lead to favourable employee behaviours including satisfaction because of their objectivity and reduced uncertainty which add clarity to jobs, goals and provide clear direction for employees.

In order to ascertain if these propositions are supported, the hypotheses developed for nonfinancial measures, i.e. Hypotheses H1 and H2, are also tested for financial measures. The following hypotheses (see Figure 3), are therefore, tested:

H4: The relationship between financial measures-based performance evaluations and employee organisational commitment is indirect through employees' perceptions of fairness in performance evaluation procedures.

H5: The relationship between financial measures-based performance evaluations and employee organisational commitment is indirect through employee job satisfaction.

Method

Data for this study were collected using a mailed questionnaire survey in Singapore. The sample was randomly selected from the list of manufacturing organisations which is the largest sector listed in *Kompass Singapore* business directory. To ensure some degree of control over the size of organisations, only organisations with more than 100 employees were selected in our sample.
Initial telephone calls to the selected organisations were made to obtain the names of the managers who were heads of functional areas such as manufacturing, marketing or sales. This was to provide some degree of control over the level of management and also to ensure that the questionnaire could be

mailed directly to the intended respondents. To minimise the possibility of our sample being biased by the control system of any one organisation, a maximum of four managers were obtained from any one organisation.

A total of 300 names of functional heads were obtained. Included in each questionnaire that was mailed to each of these 300 functional heads was a covering letter explaining the objectives of the research and assuring confidentiality in the responses provided together with a self-addressed prepaid return envelope. Reminder letters were sent three weeks after the initial mailing and follow-up telephone calls were made two weeks later.

From the 300 questionnaires that were sent, a total of 136 (45%) questionnaires were returned, of which 6 were incomplete and were excluded from the study. The final sample comprises 130 (43%) questionnaires. Non-response bias tests as suggested by Oppenheim (1992) were undertaken. These involved splitting the sample into two halves based on the dates the responses were received and carrying out a t-test for each of the variables used in the study to ensure that there were no systematic differences between the early and late responses. No significant differences were found for any of the variables. These results indicate that non-response bias may not be an issue for our sample.

The mean age of the respondents was 45 years and they had held their current positions for an average of 10.5 years. They were responsible for an average of 113 employees. Most of them (95%) had either tertiary or professional qualifications. These demographic data suggest that the respondents were relatively senior, experienced and well qualified managers in their respective organisations.

Measurement Instruments

Financial and Nonfinancial Measures: The instrument developed by Lau and Moser (2008) was used to measure nonfinancial measures and financial measures. This instrument asks each respondent to indicate on a 7-point scale, how much importance his or her superior attached to each of (i) the 4 financial items and (ii) the 15 nonfinancial items when evaluating the respondent's individual performance. The 15 nonfinancial items are organised into three perspectives of customer, internal business process, and learning and growth.

A factor analysis was undertaken for all the 19 items. The factor analysis results indicate that the four financial items load satisfactorily on a single factor. The results also indicate that the minimum factor loading is 0.81, the eigen value is 1.35 and the variance explained is 7.11%. The Cronbach alpha coefficient for the four items is 0.91. The 15 nonfinancial items load satisfactorily into their expected perspectives. The factor loadings are presented in Table 1. The Cronbach alpha coefficient for the 15 nonfinancial items is 0.93.

In order to derive the scores of the financial measures for the hypotheses tests, we calculate for each respondent a mean score for the four financial items. For the nonfinancial measures, the scores are derived by calculating for each respondent (i) a mean score for each perspective, and (ii) an average of the three nonfinancial perspectives' means.

Fairness in Performance Evaluation Procedures: The four-item instrument developed by McFarlin and Sweeney (1992) was employed to measure subordinates' perceptions of fairness in performance evaluation procedures. The instrument asks respondents to rate the fairness of the procedures used by their superiors to evaluate their performance, communicate their performance feedback, determine their promotion and pay increases. An overall measure of procedural fairness is obtained by summing the scores of the four items. The factor analysis results indicate the unidimensional nature of the instrument as all 4 items load satisfactorily on a single factor (Eigen value = 3.02; total variance explained = 75.67%). A Cronbach alpha of 0.89 obtained for this instrument in our study indicates the high internal consistency of the four items.

Job Satisfaction: Job satisfaction was measured by a two-item instrument developed by Dewar and Werbel (1979). This instrument has been used by prior accounting studies (Mia, 1993, Abernethy and Stoelwinder, 1995). The results of a factor analysis show satisfactorily construct validity. The two items load satisfactorily on a single factor, eigen

Table 1: Factor Loadings for Financial Measures and Nonfinancial Measures Variables

Items	***Internal Business Process***	***Customer***	***Learning And Growth***	***Financial***
My ability to meet budget				0.817
My ability to avoid unfavourable budget variance				0.814
My ability to meet or better budgeted costs or sales				0.862
My ability to achieve budgeted cost reductions or budgeted sales growth				0.864
Employee satisfaction rate in my department			0.788	
Number of employees trained in my department			0.769	
Employee turnover rate in my department			0.752	
Number of innovations developed by my department			0.738	
Adoption of new technology by my department			0.719	
Quality of manufacturing output	0.892			
Defect rates	0.896			
Setup times for manufacturing processes	0.838			
Manufacturing cycle time	0.845			
Inventory level	0.648			
Number of new customers acquired		0.693		
Response time to customers		0.812		
Number of customer complaints		0.756		
Number of overdue deliveries		0.686		
Customer satisfaction rate		0.791		
Eigenvalue	8.728	1.665	2.745	1.351
% Variance explained	45.939	8.765	14.449	7.111

value is 1.84 and the variance explained is 92.13%. The Cronbach alpha is 0.92 which indicates satisfactory internal reliability of the items.

Organisational Commitment: Employees' commitment to their organisations was measured using the nine-item short-form version of Organisational Commitment Questionnaire (OCQ) developed by Mowday, Steers and Porter (1979). This instrument is regarded as the most widely used measure of affective commitment. Both Mowday, et al. (1979) and Angle and Perry (1981) suggest that OCQ has good psychometric properties. Consistent with prior studies (e.g., Nouri, 1994; Nouri and Parker, 1998), a Cronbach alpha of 0.93 obtained in our study indicates the high internal consistency of the nine items in the instrument. A factor analysis was undertaken for the nine items. All items load satisfactorily on a single factor (Eigenvale = 6.00; variance explained = 66.71%). Descriptive statistics for the variables investigated in this study are presented in Table 2.

Table 2: Description Statistics

Variables	Mean	Standard Deviation	Theoretical Range		Actual Range	
			Min	Max	Min	Max
Financial Measures	5.42	1.09	1	7	2	7
Nonfinancial Measures	5.09	0.99	1	7	2	7
Fairness In Procedures	13.06	2.72	4	20	7	20
Job Satisfaction	10.76	2.19	2	14	4	14
Organisational Commitment	47.11	8.91	9	63	27	63

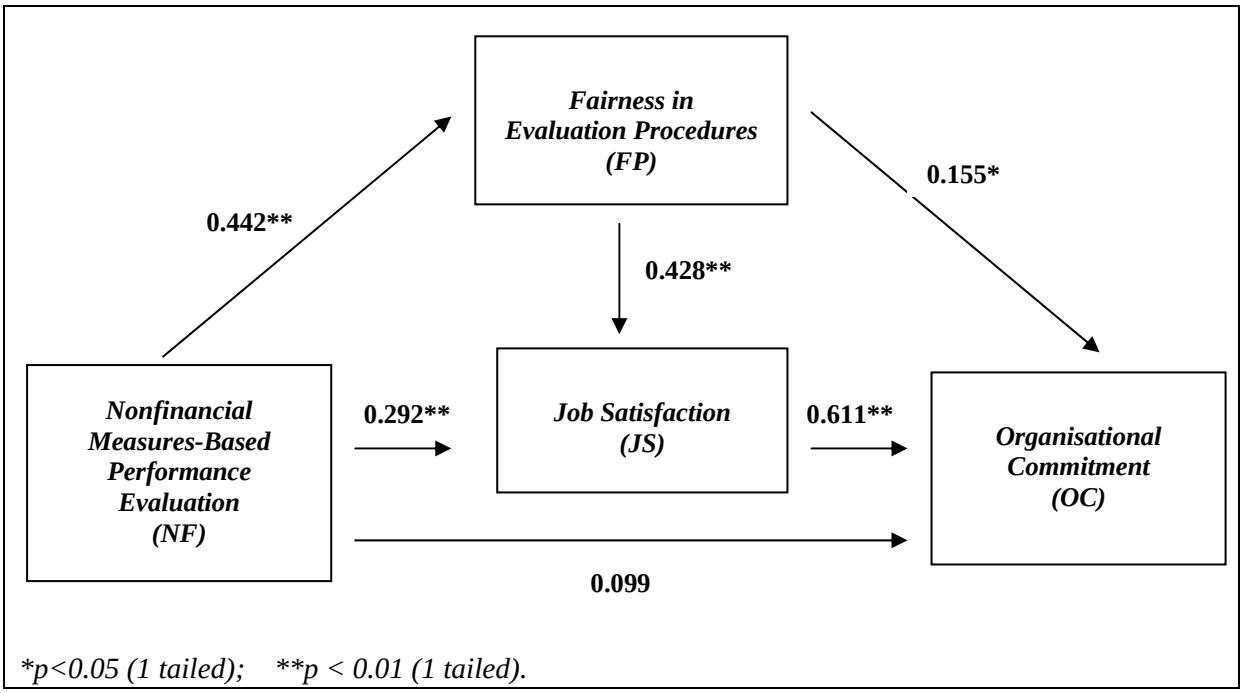
Table 3: Correlation Matrix among Independent and Dependent Variables

	Nonfinancial Measures	***Fairness in Procedures***	***Job Satisfaction***	***Organisational Commitment***
Financial Measures	0.464**	0.394**	0.383**	0.444**
Nonfinancial Measures		0.442**	0.482**	0.462**
Fairness in Procedures			0.558**	0.540**
Job Satisfaction				0.745**
**p <0.01 (1 tailed)				

Table 4: Nonfinancial Measures Model – Decomposition of the Observed Correlations

Path Linkage	***Observed Correlations***	***Direct Effects***	***Indirect Effects***	***Spurious Effects***
Nonfinancial Measures/ Fairness in Procedures	0.442	0.442		
Nonfinancial Measures/ Job Satisfaction	0.482	0.292	0.190	
Fairness in Procedures/ Job Satisfaction	0.558	0.428		0.130
Nonfinancial Measures/ Organisational Commitment	0.462	0.099	0.363	
Fairness in Procedures/ Organisational Commitment	0.540	0.155	0.261	0.124
Job Satisfaction/ Organisation Commitment	0.745	0.611		0.134

Figure 2: Path Coefficients (Nonfinancial Measures Model)



Results

The purpose of this study is to investigate the relationships between nonfinancial (and financial) measures-based performance evaluation procedures and employee organisational commitment. Specifically, it investigates if these relationships are indirect through (i) employees' perceptions of fairness in the performance evaluation procedures and (ii) employee job satisfaction. As path analysis enables the total effects of relationships to be decomposed into direct effects and indirect effects, it is used to analyse the data. This technique has been used extensively in prior management accounting research (e.g., Nouri and Parker, 1998; Lau and Sholihin, 2005; Hoque, 2011).

Before tests of hypothesis are undertaken, tests including testing for the normality of residuals, homogeneity of variance of residuals and the appropriateness of the linear models were carried out to assess the adequacy of the regression models.

Test of Hypotheses H1, H2 and H3: Nonfinancial Measures Model

Hypothesis H1 states that the relationship between nonfinancial measures-based performance evaluation and organisational commitment is indirect through perceptions of fairness in performance evaluation procedures. Hypothesis H2 states that the relationship between nonfinancial measures-based performance evaluation and organisational commitment is indirect through job satisfaction. The results of the correlations among the variables investigated in the study are presented in Table 3. They indicate that the relationship between nonfinancial measures and organisational commitment is positive and highly significant (est. = 0.462, $p<0.01$). However, in order to ascertain if this relationship is mediated by fairness in evaluation procedures (H1) and job satisfaction (H2), it is necessary to compute the direct and indirect effects. Based on the path coefficients presented in Table 4 and Figure 2, the indirect effects are computed as follows:

Path (1)	NF-FP-OC	0.442 x 0.155	0.069
Path (2)	NF-FP-JS-OC	0.442 x 0.428 x 0.611	0.116
Path (3)	NF-JS-OC	0.292 x 0.611	0.178
Indirect effects			0.363

These results indicate that the relationship between nonfinancial measures-based performance evaluation (NF) and organisational commitment (OC) comprises two effects. First, there is a direct effect of 0.099 which is presented in Figure 2. Second, there is an indirect effect of 0.363 as computed above. The portion of the indirect effect attributable to perceptions of fairness in evaluation procedures is 0.069. The portion attributable to job satisfaction is (0.116 + 0.178 = 0.294). Table 4 provides a summary of the decomposition of the zero order correlations between nonfinancial measures usage and organisational commitment into direct effects and indirect effects. Bartol (1983, p.809) suggests that indirect effects in excess of 0.05 may be considered meaningful. As the indirect effects via fairness of evaluation procedures (0.069) and via job satisfaction (0.294) are both above the threshold of 0.05, they are meaningful. Hypotheses H1 and H2 are therefore both supported.

For test of Hypothesis H3, Table 4 indicates that the indirect effect of fairness in evaluation procedures on organisational commitment through job satisfaction is 0.261, calculated as follow: 0.428 x 0.611 = 0.261. This result is meaningful (Bartol, 1982, p. 809). Hence, Hypothesis H3, which states that the relationship between perceptions of fairness in performance evaluation procedures and organisational commitment is indirect through job satisfaction, is also supported.

Test of Hypotheses H4 and H5: Financial Measures Model

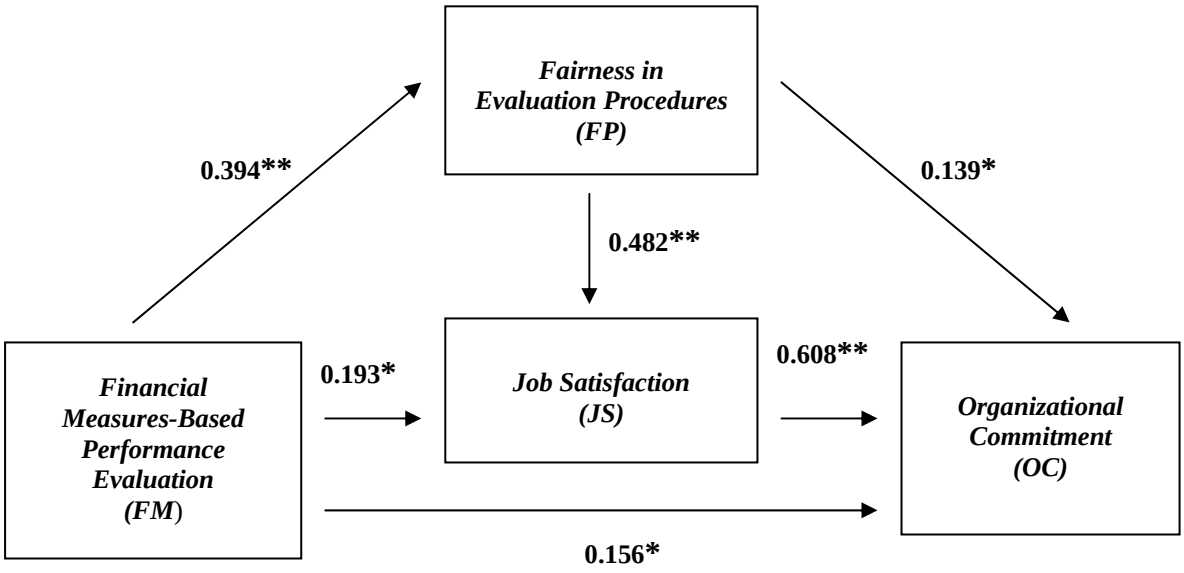
Hypotheses H4 and H5 relate to financial measures and are similar to Hypotheses H1 and H2. Hypothesis H4 states that the relationship between financial measure-based performance evaluation and organisational commitment is indirect through perceptions of fairness in evaluation procedures. Hypothesis H5 states that the relationship between financial measures-based performance evaluation and organisational commitment is indirect through job satisfaction. The results in Table 3 indicates a significant relationship between financial measures-based performance evaluation and organisational commitment (est. = 0.444, $p<0.001$, 1-tailed). However, in order to ascertain if the relationship is mediated by fairness in evaluation procedures and job satisfaction, the indirect effects are calculated as follows based on the path coefficients presented in Figure 3 and Table 5.

Path (1)	FM-FP-OC	0.394 x 0.139	0.055
Path (2)	FM-FP-JS-OC	0.394 x 0.482 x 0.608	0.116
Path (3)	FM-JS-OC	0.193 x 0.608	0.117
Indirect effects			0.288

Table 5: Financial Measures Model – Decomposition of the Observed Correlations

Path Linkage	***Observed Correlations***	***Direct Effects***	***Indirect Effects***	***Spurious Effects***
Financial Measures/ Fairness in Procedures	0.394	0.394		
Financial Measures/ Job Satisfaction	0.383	0.193	0.19	
Fairness In Procedures/ Job Satisfaction	0.558	0.482		0.076
Financial Measures/ Organisational Commitment	0.444	0.156	0.288	
Fairness In Procedures/ Organisational Commitment	0.540	0.139	0.293	0.108
Job Satisfaction/ Organisation Commitment	0.745	0.608		0.137

Figure 3: Path Coefficients (Financial Measures Model)



*p <0.05 (1 tailed); **p < 0.01 (1 tailed).

Table 5 provides a summary of the decomposition of the zero-order correlations between financial measures usage and organisational commitment into direct effects and indirect effects. The total indirect effect is 0.288 which can be decomposed into the portion attributable to perceptions of fairness in performance evaluation procedures (0.055), and the portion attributable to job satisfaction. (0.116 + 0.117 = 0.233). Based on Bartol's (1983, p.809) criterion for meaningfulness, these indirect effects are meaningful since they both exceed the threshold amount of 0.05. Hence Hypotheses H4 and H5 are both supported.

Discussion and Conclusions

The objective of this study is to ascertain if the adoption of nonfinancial measures for performance evaluation is associated with procedural fairness, job satisfaction and organisational commitment and if these relationships are direct or indirect. The second purpose is to ascertain if there is any significant difference in the results arising from the use of nonfinancial measures vis-a-vis financial measures for performance evaluations.

To test the proposed hypotheses, a path analytical model was used to analyse the data. The results from the nonfinancial measures model indicate the following. First, for the relationship between nonfinancial measures and procedural fairness, a significant direct relationship exists (est. = 0.442; p<0.01). Second, for the relationship between nonfinancial measures and job satisfaction, there is a direct effect of 0.292 (see Table 4) and an indirect effect of 0.190 (see Table 4). Third, for the relationship between nonfinancial measures-based performance evaluations and organisational commitment, the effects are indirect (0.363) and mediated by perceptions of fairness in the evaluation procedures and job satisfaction. These results therefore suggest that organisational commitment can be affected by the use of nonfinancial measures. However, these effects are mainly due to employees who perceive the use of nonfinancial measures to evaluate their performance as fair and hence are satisfied with their jobs. Higher job satisfaction in turn

leads to higher level of organisational commitment.

The results for the financial measures are similar to those of the nonfinancial model. They indicate that the effects of financial measures on procedural fairness are direct (0.394, $p<0.01$). For the relationship between financial measures and job satisfaction, the effects are both direct (0.193 in Table 5) and indirect (0.19 in Table 5). For the relationship between financial measures and organisational commitment, the results indicate that the relationship is also indirect and mediated by fairness in performance evaluation procedures and job satisfaction. These results are consistent with prior research findings reported by Lau and Sholihin (2005). They therefore provide evidence to suggest that the behavioural consequences for the adoption of nonfinancial measures and financial measures for performance evaluation are relatively similar despite the many claims on the inadequacies and incomplete nature of financial measures-based performance measures.

The results of the current study are subject to the usual limitations of questionnaire survey research. Moreover, as the sample in our study consists of larger-sized organisations which employed more than 100 employees, caution should be exercised in generalising these results to smaller-sized organisations. In addition, as our sample was selected only from the manufacturing sector, generalising these results to non-manufacturing sector should be made with caution too.

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Appendix

Financial and Nonfinancial Measures

When your superior (your immediate boss) is evaluating your performance, how much importance do you think he or she attaches to the following items? (1= never important, 7= always important).

	1	2	3	4	5	6	7
My ability to meet my budget							
My ability to avoid unfavourable budget variance							
My ability to meet or better budgeted costs or sales							
My ability to achieve budgeted cost reductions or budgeted sales growth							
Employee satisfaction rate in my department							
Number of employees trained in my department							
Employee turnover rate in my department							
Number of innovations developed by my department							
Adoption of new technology by my department							
Quality of manufacturing output							
Defect rates							
Setup times for manufacturing processes							
Manufacturing cycle time							
Inventory level							
Number of new customers acquired							
Response time to customers							
Number of customer complaints							
Number of overdue deliveries							
Customer satisfaction rate							

Fairness in Evaluation Procedures

Please respond to each of the following questions by circling a number from 1 to 5 (1=very unfair, 5 = very fair).

	1	2	3	4	5
How fair are the procedures used to evaluate employee performance?					
How fair are the procedures used to determine promotion?					
How fair are the procedures used to communicate performance feedback?					
How fair are the procedures used to determine pay increases?					

Job Satisfaction

Please indicate your degree of agreement or disagreement with the following statements (1= strongly disagree, 7 = strongly agree).

	1	2	3	4	5	6	7
All in all, I am satisfied with my job							
In general, I like working here.							

Organisational Commitment

The series of statement below represent possible feelings that you might have about the organisation for which you are now working for. Please indicate the degree of your agreement or disagreement with each statement below (1= strongly disagree, 7 = strongly agree)

	1	2	3	4	5	6	7
I am willing to put in a great deal of effort beyond that is normally expected in order to help this organisation to be successful							
I talk up this organisation to my friends as a great organisation to work for							
I would accept almost any type of job assignment in order to keep working for this organisation							
I find that my values and this organisation's values are very similar							
I am proud to tell others that I am part of this organisation							
This organisation really inspires the very best in me in the way of job performance							
I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined							
I really care about the fate of this organisation							
For me, this is the best of all organisations for which to work							