

How Does Procedural Fairness Affect Performance Evaluation System Satisfaction? (Evidence from a UK Police Force)

Mahfud Sholihin

Faculty of Economics and Business, Universitas Gadjah Mada, Yogyakarta, Indonesia

Abstract: This paper investigates whether, and if so, how procedural fairness affects performance evaluation system satisfaction in a UK Police Force. Employing a survey method with samples of detective inspectors and detective chief inspectors with significant managerial responsibilities in a UK Police Force, this study finds that procedural fairness affects performance evaluation system satisfaction. Further analysis reveals that the effect of procedural fairness on performance evaluation system satisfaction is mediated by trust. This study provides empirical evidence on how procedural fairness affects performance evaluation system satisfaction. The results of this study may benefit the designer of performance evaluation systems in police organizations.

Abstrak: Makalah ini mengkaji apakah, dan bagaimana, keadilan prosedural mempengaruhi kepuasan terhadap sistem evaluasi kinerja dalam Kepolisian Inggris. Metode survei dilakukan dengan sampel inspektur detektif dan inspektur kepala detektif dengan tanggung jawab manajerial yang signifikan dalam Kepolisian Inggris. Studi ini menemukan bahwa keadilan prosedural mempengaruhi kepuasan terhadap sistem evaluasi kinerja. Analisis lebih lanjut mengungkapkan bahwa pengaruh keadilan prosedural terhadap kepuasan terhadap sistem evaluasi kinerja dimediasi oleh kepercayaan. Studi ini memberikan bukti empiris tentang bagaimana keadilan prosedural mempengaruhi kepuasan terhadap sistem evaluasi kinerja. Hasil studi ini mungkin berguna bagi perancang sistem evaluasi kinerja dalam organisasi kepolisian.

Keywords: performance evaluation system satisfaction, procedural fairness, trust, UK Police Force

Introduction

Performance evaluation system satisfaction (PESS) has been found to be a significant antecedent for various outcomes, including individual and organizational performance, job satisfaction, retention (Lilley and Hinduja 2007), organizational commitment, and turnover intention (Kuvaas 2006). Therefore, understanding factors affecting PESS and how those factors affect PESS is worth studying.

Relying on organizational justice theory, this paper proposes that PESS is affected by perceived fairness of the procedures used to evaluate managers' performance. For example, Lind and Tyler (1988) found that perceptions of procedural fairness result in increased satisfaction (Lind and Tyler 1988). They argued that "organizations that ignore procedural justice concerns run the risk of engendering negative organizational attitudes, *dissatisfaction* with organizational outcomes and decisions, non-compliance with rules and procedures, and, in some instances lower performance" (emphasis added). Similarly, Tang and Sarfield-Baldwin (1996: 30) contend 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 ..." Empirically, Lissak (1983) and Alexander and Ruderman (1987) found that procedural fairness is associated with job satisfaction. A similar finding within a management accounting context is also found by Lau and Sholihin (2005).

Additionally, expectancy theory suggests that when subordinates perceive that the procedures used to evaluate their performance are fair, they will be powerful motiva-

tors for individuals to perform better (Vroom 1964; Porter and Lawler 1968) which may lead to higher satisfaction. In contrast, when subordinates perceive that the performance evaluation procedures are unfair, they will not be motivated to perform well because, with unfair evaluation procedures, it is possible that good performance may be evaluated as poor performance. Consequently, subordinates are likely to experience low satisfaction when unfair performance evaluation procedures are employed. Based on their review of the procedural fairness literature, Lind and Tyler (1988: 177) conclude that "the research...has shown that satisfaction is one of the principal consequences of procedural fairness." The paper therefore expects that fairness of performance evaluation will affect performance evaluation satisfaction. However, this paper argues that the effects may be indirect via trust in supervisor and perceived fairness of outcomes the employees receive (distributive fairness) as will be discussed later.

Using samples of detective inspectors and detective chief inspectors, the findings indicate the degree of satisfaction with the a performance evaluation system is affected by perceived fairness. Further analysis reveals that the effects of fairness of performance evaluation procedures on a performance evaluation system satisfaction is mediated by trust in superiors, but not mediated by fairness of the outcomes (distributive fairness). This paper focuses on detective inspectors and detective chief inspectors because, according to Butterfield et al. (2005), they were expected to take on more devolved management responsibility in the New Public Management era and they perform a crucial function in driving performance achievement within the police force.

This study was conducted in the UK because while the UK Home Office has recognised the importance of procedural fairness in the police performance management framework (Home Office, 2004), there is a lack of empirical evidence on how procedural fairness benefits the UK police organisations. This study is expected to provide evidence on this matter. This paper may contribute to practice and literature in the following ways. First, if it is found that procedural fairness results in positive attitudes and behaviors, particularly trust, distributive fairness, and satisfaction with performance evaluation systems, the government, particularly the Home Office, should design and implement a performance management system that is perceived to be procedurally fair. Second, whilst previous literature in the context of police service (e.g., Metcalfe and Dick 2000 and 2001; and Beck and Wilson 2000) has underscored the importance of justice, however they did not test empirically. This study moves beyond the previous speculation regarding the positive effects of procedural justice on various favourable attitudes and behaviours to test empirically the speculation. Third, whilst the majority of previous studies in performance evaluation system satisfaction (see Lilley and Hinduja 2007; Kuvaas 2006) have examined the consequences PESS, this current study investigates the antecedents of PESS and the way those variables affect PESS, whether direct or indirect.

The rest of the paper is organized as follows. The next section will review the relevant literature and develop hypotheses, which will then be followed by the research method and findings. The paper then presents conclusions, limitations, and suggestions for future research.

Literature Review and Hypotheses Development

Performance evaluation is an important component of management and control system design (Otley 1999; Merchant and Van der Stede 2003) and a key management issue for organizations (Otley and Fakiolas 2000). Within organizations, performance evaluation should be designed to motivate managers and employees to exert effort towards attaining organizational goals through a variety of incentives tied to the achievement of those goals. It is important for employees because it affects their compensation and rewards (Kaplan and Atkinson 1998; Merchant and Van der Stede 2003). Design of performance evaluation systems should therefore engender positive attitudes and behaviour; one such attitude being reflected in managers' satisfaction with the performance evaluation system.

As previously mentioned, performance evaluation systems satisfaction (PESS) influences both individual and organizational performance, job satisfaction, and retention (Lilley and Hinduja 2007) and organizational commitment and turnover intention (Kuvaas 2006). This study argues that PESS is affected by procedural fairness. However, the effect is indirect via trust and distributive fairness as will be discussed as follows.

Fairness of Performance Evaluation Procedures and Trust

Fairness of performance evaluation procedures (procedural fairness) refers to the perceived fairness of the means and procedures used to determine the amount of reward or compensation the employees receive

(Folger and Konovsky 1989). In the context of performance evaluation, procedural fairness is likely to be the concern of both subordinates and superiors. Subordinates usually consider performance evaluation to be particularly important when it is linked to the reward system that will determine their remunerations and promotions (Lau and Lim 2002a). Due to the importance of performance evaluation, subordinates normally expect that the procedures used for evaluating their performance should be fair. High procedural fairness is also an important concern of the superiors and the organization as a whole. There is plenty of evidence to indicate that the implementation of procedures perceived by subordinates as unfair is detrimental to the organization's interests (e.g. Friedland et al. 1973; Thibaut et al. 1974; Lissak 1983; Kanfer et al. 1987; Greenberg 1987). Since the perception of unjust procedures can negatively affect organizations, superiors are likely to maintain high procedural fairness in conducting performance evaluations.

Previous studies in various settings have shown that procedural fairness has a positive influence on trust. In a political setting, Lind and Tyler (1988) reported that U.S. citizens' trust in their national government was highly correlated with the perceived fairness of the government's decision-making procedures. They also found that citizens' trust in legal institutions was strongly related to procedural fairness. In the organisational arena, Konovsky and Pugh (1994) found a very high correlation between subordinates' judgments of their superior's procedural fairness and their trust in their supervisor. Other studies in the organisational area (e.g. Alexander and Ruderman 1987; Folger and Konovsky 1989; McFarlin and Sweeney 1992; and Korsgaard et al. 1995) and in a budgeting context

(Magner and Welker 1994; Magner et al. 1995) have also demonstrated that perceptions of procedural fairness are positively related to trust in the leaders and decision makers. A more recent study by Hartmann and Slapnicar (2009), using samples of bankers in Slovenia, also found that procedural fairness positively affects trust in superior. Additionally, using samples of managers of a UK financial institution, Sholihin et al. (2011) found that procedural fairness positively affects trust. Hence, this study proposes that procedural fairness is positively associated with trust. The following hypothesis will be tested:

H_{at}: Fairness of performance evaluation procedures is positively associated with trust in superior.

Trust and Performance Evaluation Satisfaction

Trust is defined by Rousseau et al. (1998: 395) as 'a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another.' It has attracted the attention of researchers from various disciplines. Lewicki et al. (1998) observed that trust has been widely studied in disciplines such as psychology, sociology, politics, economics, anthropology, and organizational behavior. They also noted that trust has been found to have an effect on personality, interpersonal relationships, cooperation, and stability in social institutions and markets. In organizational studies, Mayer et al. (1995) observed that trust has been cited as an important factor in the area of communication, leadership, management by objectives, negotiation, game theory, performance appraisal, labor-management relations, and implementation of self-managed work teams.

While there are various types of trust, consistent with previous management ac-

counting studies in the context of performance evaluation (e.g. Hopwood 1972; Otley 1978; Ross 1994; Lau and Sholihin 2005, Hartmann and Slapnicar 2009; Agritansia and Sholihin 2011), this study conceptualized trust as interpersonal trust, i.e. '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.' (Read 1962: 8). In addition, this study focuses on the interpersonal trust that subordinates have in their superior, as the performance evaluation process involves those two parties.

Whitener et al. (1998) identify three elements for interpersonal trust: (1) an expectation or belief that another party will act benevolently; (2) a willingness to be vulnerable and risk that the other party may not do as expected; (3) a dependency on the other party that causes one's outcomes to be influenced by the other's action. With respect to subordinate and superior relationships, they suggest that a necessary foundation to increase trust in supervisors is that the superior should engage in trustworthy behavior. This implies (1) consistency across time and situations, which reflects the reliability and predictability of actions; (2) integrity, which refers to the consistency between words and actions; (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 (exchange thoughts and ideas freely); and (5) benevolence or demonstration of concern, that is, showing consideration and sensitivity to subordinates' needs and interests, acting in a way that protects subordinates' interests, and refraining from exploiting others for the benefit of one's own interests. Read (1962) noted

that trusting subordinates expect their interest to be protected and promoted by their 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.

Zand (1997) defines trusting behavior as a willingness to increase vulnerability to another person whose behavior cannot be controlled, in situations in which a potential benefit is much less than a potential loss if the other person abuses the vulnerability. Further, he suggests that two people who trust each other will greatly increase their problem solving effectiveness. This will increase their commitment to each other and they will experience greater satisfaction with their work and their relationships. Trusting behavior can improve decision quality and its implementation. Lippit (1982) argues that the existence of trust between organisational members can increase both problem solving and performance. With regard to satisfaction, an empirical study by Driscoll (1978) found that trust is a predictor of satisfaction. In management accounting studies, Lau and Sholihin (2005) and Lau et al. (2008) found that trust is positively associated with job satisfaction. Based on the above discussion, therefore, it is reasonable to propose that trust is positively associated with performance evaluation system satisfaction. The following hypothesis is tested:

H_{a2}: Trust is positively associated with performance evaluation system satisfaction.

If H_{a1} and H_{a2} are both supported, they would support the expectation that the effect of fairness of performance evaluation procedures on performance evaluation satisfaction is indirect through trust in superiors. Hence this study also proposes that:

H_{as}: Fairness of performance evaluation procedures has an indirect effect on performance evaluation system satisfaction through trust in superior.

Fairness of Performance Evaluation Process and Fairness of Outcomes

The fairness of the means and procedures used to determine the amount of reward or compensation the employees receive is termed procedural fairness, while fairness of the amount of reward employees receive is called as distributive fairness (fairness of outcomes) (Folger and Konovsky 1989). Distributive fairness (justice) was initially conceptualized by Homans (1961) in the context of social exchanges, based on the notion of relative deprivation introduced by Stouffer et al. (1949). Homans offers the following general rule of distributive justice:

“A man in an exchange relation with another will expect that the rewards of each man will be proportional to his costs-the greater the rewards, the greater the costs-and that the net rewards, or profits, of each man be proportional to his investments-the greater the investments, the greater the profit.” (p. 75)

Colquitt et al. (2005) note that many of Homans’ ideas about distributive justice were developed more fully in Adams’ (1965) equity theory; equity exists when a person perceives that the ratio of his/her outcomes to inputs and the ratio of other’s outcomes to other’s inputs are equal. Conversely, inequity exists when a person is relatively underpaid or overpaid. This may happen either when persons are in direct relationship, or when they are in an exchange relationship with a third party, such as an employer, and one person compares him/herself to the other.

Early studies in a legal setting found that distributive fairness is related to procedural fairness (Thibaut and Walker 1975; Thibaut and Walker 1978). The relationship between distributive fairness and procedural fairness is explained by Greenberg and Folger (1983) as follows, “If the process is perceived being fair, then there is a greater likelihood that the outcomes resulting from that process will be considered fair. The tendency for... procedural justice to influence ... distributive justice ... has been called the fair process effect” (p. 236). A meta analysis of empirical studies in the organizational justice literature by Colquitt et al. (2001) found that procedural fairness is positively and strongly correlated with distributive fairness. A recent accounting study by Lau et. al. (2008) confirmed that fairness of performance evaluation procedures is positively correlated with fairness of outcomes. The following hypothesis is tested to assess whether it holds for the specific resaerch sample:

H_{as}: Fairness of performance evaluation procedures is positively associated with fairness of outcomes.

Fairness of Outcomes and Performance Evaluation System Satisfaction

The managerial performance evaluation process is often linked to rewards (compensation, career progression, etc.). Applying equity theory to distributive fairness within an organisational setting, suggests a positive association between distributive fairness and performance evaluation system satisfaction. Whilst this proposition has not been tested empirically, previous empirical studies, in accounting and others contexts, find distributive fairness to be positively associated with other forms of satisfaction. For example,

Folger and Konovsky (1989) and McFarlin and Sweeney (1992) found that distributive fairness is positively associated with pay satisfaction. Additionally, McFarlin and Sweeney found that distributive fairness is positively associated with job satisfaction. In an accounting context, Lau et al. (2008) and Sholihin and Pike (2009) found a significant association between distributive fairness and job satisfaction. In that satisfaction with the performance evaluation process is expected to be linked to these other forms of manager satisfaction, it is reasonable to expect that distributive fairness (fairness of outcomes) is positively associated with performance evaluation systems satisfaction. Consequently, the following hypothesis will be tested:

H_{a5}: Fairness of outcomes is positively associated with performance evaluation system satisfaction.

If H_{a4} and H_{a5} are both supported, they would support the expectation that the effect of fairness of performance evaluation procedures on performance evaluation satisfaction is indirect through fairness of outcomes. Hence this study also proposes that:

H_{a6}: Fairness of performance evaluation procedures has an indirect effect on performance evaluation satisfaction through fairness of outcomes.

Methods

Data and Sample

Data for this study were gathered using convenience sampling by means of questionnaire survey. The population of this study is inspectors and detective chief inspectors in a Police Force in the United Kingdom (hereafter Force). The questionnaires were sent to

112 detective inspectors and detective chief inspectors in the Force, supported by interviews. The following procedures were followed to get the samples. *First*, the author contacted an officer in the Force which acted as a contact person to obtain the names of potential respondents. To be included in the samples, inspectors and detective chief inspectors should have managerial responsibility, participated in the last performance evaluation review, and received performance feedback. Those criteria are to ascertain that samples understand the construct examined in this study. *Second*, a preliminary notification was conducted whereby the contacting officer notified officers of the survey and all detective inspectors and chief detective inspectors were encouraged to participate. *Third*, the covering letter with the survey instrument which was personalized and gave assurance of confidentiality were sent to the respondents. *Fourth*, to increase the response rate, three reminders were sent. Reminders were distributed one, three and seven weeks after the original mailing. The survey package reminder letters were sent via e-mail. However, responses, which were sent directly to the researchers, could be sent via email or post.

From 112 questionnaires distributed, 57 responses were received, representing a response rate of 51 percent. Given the difficulties in accessing data within a police institution (Metcalf and Dick 2000), this level of response rate is considered to be highly satisfactory. Moreover most of police force surveys typically have a return rate of only 25-30 percent (Brodeur 1998). Whilst this kind of sample selection restricts us in generalizing the results to other organizations, this method allows us to understand the context within which performance evaluation is con-

ducted. Indeed, Otley and Pollanen (2000) advocate this method in studying performance evaluation systems.

Non-response bias tests were conducted as suggested by (Oppenheim 2000) to ascertain whether there are systematic differences between early and late responses.¹ The results did not identify any systematic difference between early and late responses.

Analysis of respondent characteristics reveals that, on the average, they have been working in the Force for 22 years (minimal 1 year, maximum 32 years), in their current position for 2.4 years (minimal 1 year, maximal 10 years), and been supervised by their current supervisor for 1.5 years (minimal 1 year, maximal 5 years).

Variables and Their Measurements

Performance evaluation system satisfaction

This variable is conceptualized as the respondents' satisfaction with the current system used to evaluate their performance. To measure this variable, this research uses the modified instrument devised by Ittner et al. (2003). Respondents were requested to indicate their level of agreement using a seven-point Likert scale, anchored 1 (strongly disagree) and 7 (strongly agree) on the three items to measure this variable.

Factor analysis for this variable revealed only one factor with an eigenvalue greater than 1 (eigenvalue= 2.507; total variance explained= 83.574%). This supports the unidimensional nature of this instrument. In addition, a correlation analysis also indicates

that each item is correlated with the others at $p < 0.01$. The Cronbach's alpha coefficient for this instrument is 0.899 which can be considered as indicating high internal reliability for the scale (Nunnally 1967).

Fairness of performance evaluation procedures (procedural fairness)

This variable is conceptualized as the perceived fairness of the procedures used to evaluate the organizational members' performance (Folger and Konovsky 1989). It was measured using a four-item instrument developed by McFarlin and Sweeney (1992). In management accounting studies it has been used by, for example, Lau and Sholihin (2005) and Lau and Tan (2006). Respondents were requested to rate the fairness of the procedures used to evaluate their performance, to communicate performance feedback, and to determine their pay increases and promotion, ranging from 1 (very unfair) to 7 (very fair).

Factor analysis extracted only one factor with an eigenvalue greater than one (eigenvalue= 2.283; total variance explained= 57.070%). This supports the unidimensional nature of this instrument. A correlation analysis also indicates that all items are correlated significantly each other. The Cronbach's alpha coefficient for this instrument was 0.734 which can be considered as reliable (Nunnally 1967).

Fairness of outcomes (distributive fairness)

This variable is conceptualized as the perceived fairness of the rewards organizational members receive (Folger and Konovsky 1989). This variable is measured using Price and Mueller's (1986) five item Distributive

¹ In conducting the test, the responses were divided into two groups based on their dates of arrival. The test was performed by running t-tests to compare the mean of responses for each variable between the two groups.

Justice Index, subsequently used by McFarlin and Sweeney (1992). These items asked respondents to indicate the extent to which they have been fairly rewarded in relation to their responsibilities, experience, job stress, effort, and performance, using seven-point Likert scale anchored 1 (very unfair) and 7 (very fair).

Factor analysis extracted only one factor with an eigenvalue greater than one (eigenvalue = 3.815; total variance explained = 76.307%). This supports the unidimensional nature of this instrument. In addition, a correlation analysis also indicates that all items are correlated significantly each other at $p < 0.01$. The Cronbach's alpha coefficient for this instrument was 0.920 which can be considered as very reliable (Nunnally 1967).

Trust in superiors

This variable is conceptualized 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' (Read 1962). To measure the variable this research also adopt Read's instrument to measure the variable. It asks the respondents to indicate to what extent they trust or have confidence

in their superiors' motives and intentions with respects to matters relevant to their career and status in the organization, ranging from 1 (to a very little extent) to 7 (to a very great extent).

Factor analysis for this variable revealed that only one factor with an eigenvalue value greater than 1 was extracted (eigenvalue = 2.668; total variance explained = 66.691%). This supports the unidimensional nature of this instrument. In addition, a correlation analysis also indicates that each item is correlated with the others at $p < 0.01$. The Cronbach's alpha coefficient for this instrument was 0.818 which can be considered as indicating high internal reliability for the scale (Nunnally 1967).

Findings and Discussions

Descriptive Statistics

The results of the descriptive statistics for each variable are provided in Table 1. The table shows that the respondents' satisfaction with the performance evaluation system is relatively low (mean: 3.12; SD: 1.25). The table also indicates a relatively low level of perceived fairness with regard to the proce-

Table 1. **Descriptive Statistics of Variables**

Variables	Actual Score		Mean	StdDev
	Minimum	Maximum		
Procedural Fairness (PF)	1.00	6.00	3.69	1.16
Distributive Fairness (DF)	1.00	6.00	2.75	1.28
Trust	1.25	6.50	4.26	1.22
Performance Evaluation System Satisfaction (PESS)	1.00	5.33	3.11	1.24

dures used to evaluate the detectives' performance (procedural fairness) as well as the distribution of outcomes or rewards (distributive fairness) they received. The mean for procedural fairness is 3.70 (SD: 1.16) and the mean for distributive fairness is even lower, i.e. 2.75 (SD: 1.28). However, the table shows that respondents' trust in their superiors is relatively high (mean= 4.26; SD= 1.22).

Bivariate Analysis

Bivariate analysis was performed using correlation analysis. This is to examine whether procedural fairness is associated with other variables in this study. Table 2 shows that performance evaluation system satisfaction is positively and significantly correlated with procedural fairness ($r = 0.338$; $p < 0.05$). Therefore, the table supports the research's expectation that performance evaluation system satisfaction is affected by the fairness of procedures used to evaluate respondents' performance. The table also indicates that fairness of performance evaluation is positively correlated with trust in superiors ($r = 0.299$; $p < 0.05$). Therefore, hypothesis H_{a1} , which states fairness of performance evaluation procedures is positively correlated with trust in superiors is likely supported. Further, the table also likely supports hypothesis H_{a2} ,

which states that trust is positively correlated with performance evaluation system satisfaction. It can be seen from the table that the correlation between trust and performance evaluation system satisfaction is significant at $p < 0.01$ ($r = 0.386$).

The correlation analysis provides initial support for hypothesis H_{a3} on the mediating effects of trust on the relationship between fairness of performance evaluation procedures and performance evaluation system satisfaction (Baron and Kenny 1986). Further analysis to investigate the mediating effect of trust will be conducted using PLS, which is discussed later. While Table 2 shows a significant correlation between fairness of performance evaluation procedures and fairness of outcomes ($r = 0.399$; $p < 0.01$), it does not reveal a significant correlation between fairness of outcomes and performance evaluation system satisfaction. Therefore, whilst hypothesis H_{a3} (fairness of performance evaluation procedures is correlated with fairness of outcomes) is likely supported, hypothesis H_{a4} (fairness of outcomes is correlated with performance evaluation system satisfaction) is likely not supported. In addition, based on Baron and Kenny's (1986) arguments, hypothesis H_{a5} (fairness of performance evaluation procedures has an indirect

Table 2. **The Results of Correlation Analysis**

	PF	DF	Trust	PES
PF	1			
DF	0.399**	1		
Trust	0.299*	0.236	1	
PES	0.338*	0.174	0.386**	1

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

* Correlation is significant at the 0.05 level (2-tailed).

effect on performance evaluation satisfaction through trust in superiors) is likely not supported. They argue that in order to have an indirect effect, three requirements must be met (1) the independent variable (fairness of performance evaluation procedures) is significantly correlated with the dependent variable (performance evaluation system satisfaction); (2) the independent variable is significantly correlated with the mediating variable (fairness of outcomes); and (3) the mediating variable is significantly correlated with the dependent variable. The table indicates that requirement 2 is not met because fairness of outcomes is not significantly correlated with performance evaluation system satisfaction.

Structural Equation Model Analysis

As previously mentioned, in order to ascertain the mediating effect of trust on the relationship between fairness of performance evaluation procedures and performance evaluation system satisfaction a further analysis of structural equation modeling using PLS approach was conducted. A structural equation modeling approach was selected because it offers the flexibility to model relationships among multiple predictor and criterion variables, constructs unobservable latent variables, models errors in measurement for observed variables, and tests *a priori* theoretical and measurement assumptions against empirical data (Chin 1998a). A PLS approach is deemed most appropriate because of the relatively small sample size.²

² For example, to employ AMOS it is more appropriate when the number of cases is above 200 (Bacon 1997). With PLS this study can use a small number of samples. Chin (1998b) argues that an adequate sample size for PLS is 10 times of the independent variables in the largest structural equation. Since this study has 3 independent variables in the largest structural equation (with performance evaluation systems satisfaction as the dependent variables), the minimum sample should be 30. Hence our current sample is adequate. However, when the formative approach of measurement model is employed, the minimum sample should be 10 times the part of the model that requires the largest multiple regressions between the measurement model and structural model.

The PLS technique consists of both a measurement and structural model. The measurement model specifies the relationship between the manifest items (indicators) and latent variables (construct) they represent. The structural model identifies the relationships among constructs. PLS is therefore able to assess the validity of constructs within the total model (Chenhall 2005). Although the measurement and structural models can be evaluated together, they should be interpreted separately (Hulland 1999). The objective of the structural model using a PLS approach is to maximize the variance explained by variables in the model using R-Square as the goodness-of-fit measure (Chin and Newsted 1999). The parameter estimation procedure associated with covariance-based structural equation modeling is not appropriate (Chin and Newsted 1999; Hulland 1999). Rather, a bootstrapping resampling procedure is used to estimate t-statistics for the PLS structural path coefficient. Following standard practice in accounting studies which use PLS (e.g. Chenhall 2005) this study uses a large bootstrap sample of 500. This figure is chosen so that the data approximate normal distribution and leads to better estimates of test statistics as PLS does not require normal distribution (Chin 1998b; Gefen et al. 2000).

Whilst in PLS there are two epistemic measurement models, i.e. reflective indicators and formative indicators (see Chin 1998b; Hulland 1999), in this study, relationships are modeled as reflective indicators as items for each construct are assumed to be correlated

and measure the same underlying phenomenon (Gefen et al. 2000). Using the reflective model the individual item reliability is assessed by examining the loading of measures with their respective construct.³

Table 3 provides the results of the measurement model. The table shows that all items load on their respective construct above 0.5. Hence the results of the PLS approach

validate the results of factor analysis (Chenhall 2005). To assess the discriminant validity and convergent validity of the constructs in PLS, Average Variance Extracted (AVE) is used (Hulland 1999; Chin 1998b). Discriminant validity is assessed by comparing the AVE and the squared correlation between constructs. Table 3 shows the AVE value for each variable for comparison with

Table 3. **The Results of Measurement Model**

Variables and Items	Loading
<i>Fairness of performance evaluation procedures (AVE= 0.618)</i>	
Procedural Fairness 1	0.888
Procedural Fairness 2	0.771
Procedural Fairness 3	0.815
Procedural Fairness 4	0.653
<i>Fairness of outcomes (Distributive Fairness) (AVE= 0.806)</i>	
Distributive Fairness 1	0.871
Distributive Fairness 2	0.932
Distributive Fairness 3	0.899
Distributive Fairness 4	0.868
Distributive Fairness 5	0.917
<i>Trust in superiors (AVE= 0.668)</i>	
Trust 1	0.722
Trust 2	0.771
Trust 3	0.905
Trust 4	0.859
<i>Performance evaluation system satisfaction (AVE= 0.851)</i>	
Satisfaction 1	0.879
Satisfaction 2	0.938
Satisfaction 3	0.949

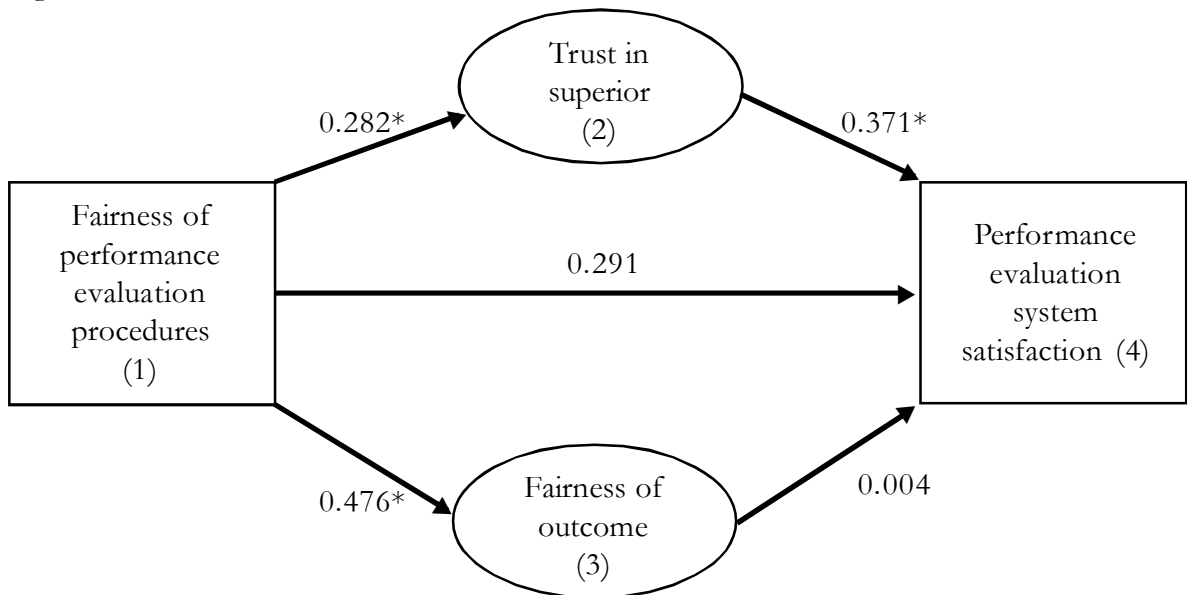
³ Whilst Hulland (1999) allows researchers to use a threshold of 0.4 loading to assess the reliability, to be consistent with the benchmark used in the factor analysis previously performed, this study uses a threshold of 0.5.

the respective squared correlation. With regard to convergent validity, table 3 shows that all variables have AVE above the conventional guidelines of 0.5 indicating that they have convergent validity.

Figure 1 presents the PLS results. The figure shows that, despite the strong significant zero-order correlation coefficient between fairness of performance evaluation procedures and performance evaluation systems satisfaction observed in Table 2 ($r=0.338$; $p<0.05$), when the proposed mediating variables (trust in superiors and fairness of outcomes) are included in the model, the direct effect of fairness of performance evaluation procedures on performance evaluation systems satisfaction is no longer significant (see Figure 1). The figures also show that the path from fairness of performance evaluation procedures to trust in superiors is significant ($r=0.282$; $p<0.05$) and the path from trust in superiors is also significant ($r=0.371$; $p<0.05$). However, the Figure 1 shows that

whilst the path from fairness of performance evaluation procedures to fairness of outcomes is significant ($r=0.476$; $p<0.01$), the path from fairness of outcomes to performance evaluation satisfaction is not significant. This finding is different from previous studies (e.g. Folger and Konovsky 1989; McFarlin and Sweeney 1992; Lau et al. 2008; and Sholihin and Pike 2009) who found that distributive fairness is positively associated with satisfaction. As previously mentioned, Folger and Konovsky (1989) and McFarlin and Sweeney (1992) found that distributive fairness is positively associated with pay satisfaction. Additionally, McFarlin and Sweeney found that distributive fairness is positively associated with job satisfaction. In an accounting context, Lau et al.(2008) and Sholihin and Pike (2009) found a significant association between distributive fairness and job satisfaction. The difference may be attributable to different samples or to different construct of satisfaction.

Figure 1. PLS Results



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

* Path is significant at the 0.05 level (2-tailed).

Therefore, whilst hypothesis H_{a3} is supported, hypothesis H_{a6} is not supported. Based on the path coefficients in Figure 1, the indirect effect of fairness of performance evaluation procedures on performance evaluation systems satisfaction via trust is calculated as follows:

Fairness of procedures – trust – satisfaction $0.282 \times 0.371 = 0.105$

Since the indirect effect of fairness of performance evaluation procedures on performance evaluation systems satisfaction via trust exceeds the absolute threshold amount of 0.05, the indirect effect is meaningful (Bartol 1983).

The results of structural equation modeling support the group value model of procedural justice but not the self-interest model. The self-interest model argues that people prefer fair procedures because they are motivated to maximize their personal outcomes, whilst the group value model assumes that people value their group membership not simply for economic reasons, but also for social and psychological reasons (Lind and Tyler 1988; Blader and Tyler 2005). Whilst these two models provide different arguments for why individuals prefer fair procedures, they both propose that enhanced fairness perceptions can improve various outcomes, such as satisfaction.

Conclusions, Limitations, and Suggestions for Future Research

This paper investigates whether, and if so how, procedural fairness affects performance evaluation system satisfaction in a UK

Police Force. In particular, this study examines whether trust and distributive fairness mediate the relationship between procedural fairness and performance evaluation system satisfaction. The study finds that procedural fairness is associated with performance evaluation system satisfaction. Further analysis reveals that the effect of procedural fairness on performance evaluation system satisfaction is mediated by trust.

The results, however, should be interpreted cautiously mainly due to the fact the data used are only based on 57 responses from a UK Police Force. The responses, however, represent 51 percent of potential responses. Given the difficulties in accessing data within a police institution (Metcalf and Dick, 2000), this level of response rate is considered to be highly satisfactory. Moreover most police force surveys typically have a return rate of only 25-30 percent (Brodeur 1998). Future studies, however, may validate the results of this study using more samples or using samples from other public sector organisations. Apart from the aforementioned limitation, this study provides empirical evidence on how procedural fairness affects performance evaluation system satisfaction. The results suggest that a performance evaluation system should be designed in a way that the system is perceived as procedurally fair because when the system is perceived to be procedurally fair it will enhance trust in superior and finally satisfaction with the performance evaluation system.

References

- Agritansia, P. P., and M. Sholihin. 2011. The attitudinal and behavioral effects of nonfinancial measures. *Gadjah Mada International Journal of Business* 13 (3): 267-286.
- Bacon, L. D. 1997. *Using Amos for Structural Equation Modeling in Market Research*. Lynd Bacon & Associates, Ltd. and SPSS Inc.
- Baron, R. M., and D. A. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* 51: 1173-1182.
- Bartol, K. M. 1983. Turnover among DP personnel: A causal analysis. *Communications of the ACM* 26: 807-811.
- Blader, S. L., and T. R. Tyler. 2005. How can theories of organizational justice explain the effects of fairness? In Greenberg, J., and J. A. Colquitt (Eds.) *Handbook of Organizational Justice*. New Jersey: Lawrence Erlbaum Associates.
- Butterfield, R., C. Edwards, and J. Woodall. 2005. The new public management and managerial roles: The case of the police sergeant. *British Journal of Management* 16: 329-341.
- Chenhall, R. H. 2005. Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study. *Accounting Organizations and Society* 30: 395-422.
- Chin, W. W. 1998a. Issues and opinion on structural equation modeling. *MIS Quarterly* 22 VII - XVI.
- Chin, W. W. 1998b. The partial least squares approach to structural equation modeling. In Marcoulides, G. A. (Eds.), *Modern Methods for Business Research*. London: Lawrence Erlbaum Associates.
- Chin, W. W., and P. R. Newsted. 1999. Structural equation modeling analysis with small samples using partial least squares. In Hoyle, R. H. (Eds.), *Statistical Strategies for Small Sample Research*. Thousand Oak: Sage Publication.
- Colquitt, J. A., D. E. Conlon, M. J. Wesson, C. O. L. H. Porter, and K. Y. Ng. 2001. Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology* 86: 425-445.
- Colquitt, J. A., J. Greenberg, and C. P. Zapata-Phelan. 2005. What is organizational justice? A historical overview. In Greenber, J., and J. A. Colquitt. (Eds.) *Handbook of Organizational Justice*. New Jersey: Lawrence Erlbaum Associates.
- Folger, R. and M. A. Konovsky. 1989. Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal* 32: 115.
- Gefen, D., D. W. Straub, and M. Boudreau. 2000. Structural equation modeling and regression: Guidelines for research practice. *Communication of AIS* 4: 1-79.
- Greenberg, J., and R. Folger. 1983. Procedural justice, participation and the fair process effect in groups and organizations. In Paulus, P. (Eds.), *Basic Group Process*. New York: Springer-Verlag.
- Hartmann, F., and S. Slapnicar. 2009. How formal performance evaluation affects trust between superior and subordinates managers. *Accounting, Organizations and Society* 34: 722-737.
- Homeoffice. 2004. *Managing Police Performance*. http://police.homeoffice.gov.uk/publications/performance-and-measurement/GUIDE_FINAL.pdf.

- Hood, C. 1994. *Explaining Economic Policy Reversals*. Buckingham: Open University Press.
- Hulland, J. 1999. Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal* 20: 195-204.
- Ittner, C. D., D. F. Larcker, and T. Randall. 2003. Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society* 28: 715-741.
- Kaplan, R. S., and A. A. Atkinson. 1998. *Advanced Management Accounting*. New York: Prentice Hall.
- Kuvaas, B. 2006. Performance appraisal satisfaction and employee outcomes: Mediating and moderating roles of work motivation. *The International Journal of Human Resource Management* 17 (3): 504 - 522.
- Lapsley, I. 1999. Accounting and the new public management: Instruments of substantive efficiency or a rationalising modernity? *Financial Accountability and Management* 15: 201-207.
- Lapsley, I. 2008. The NPM agenda: Back to the future. *Financial Accountability and Management*, 24: 77-96.
- Lau, C. M., and C. Buckland. 2001. Budgeting-role of trust and participation: Research note. *Abacus* 37: 369-388.
- Lau, C. M., L. C. Low, and I. R. C. Eggleton. 1995. The impact of reliance on accounting performance measures on job-related tension and managerial performance: Additional evidence. *Accounting, Organizations and Society* 20: 359-381.
- Lau, C. M. and A. Moser. 2008. Behavioural effects of nonfinancial performance measures: The role of procedural fairness. *Behavioral Research in Accounting* 20: 55 - 71.
- Lau, C. M., and M. Sholihin. 2005. Financial and nonfinancial performance measures: How do they affect job satisfaction? *The British Accounting Review* 37: 389-413.
- Lau, C. M., and S. L. C. Tan. 2006. The effects of procedural fairness and interpersonal trust on job tension in budgeting. *Management Accounting Research* 17: 171-186.
- Lau, C. M., K. M. Wong, and I. R. C. Eggleton. 2008. Fairness of performance evaluation procedures and job satisfaction: The role of outcome-based and non-outcome-based effects. *Accounting and Business Research* 38: 121-135.
- Lilley, D. and S. Hinduja. 2007. Police officer performance appraisal and overall satisfaction. *Journal of Criminal Justice* 35: 137-150.
- Lind, E. A., and T. R. Tyler. 1988. *The Social Psychology of Procedural Justice*. New York: Plenum Press.
- Mcfarlin, D. B., and P. D. Sweeney. 1992. Distributive and procedural justice as predictors of satisfaction with personal and organizational outcomes. *Academy of Management Journal* 35: 626.
- Merchant, K. A., and W. A. Van Der Stede. 2003. *Management Control Systems: Performance Measurement, Evaluation and Incentives*. Harlow, Essex: Pearson Education.
- Oppenheim, A. N. 2000. *Questionnaire Design, Interviewing and Attitude Measurement*. London: Continuum International.
- Otley, D. 1999. Performance management: A framework for management control systems research. *Management Accounting Research* 10: 363-382.
- Pollit, C. 1986. Beyond the managerial model: The case for broadening performance assessment in government and public services. *Financial Accountability and Management* 2: 155-170.
- Price, J. L., and C. W. Mueller. 1986. *Handbook of Organizational Measurement*. Marshfield, MA: Pitman.
- Read, W. H. 1962. Upward communication industrial hierarchies. *Human Relations* 15: 3-15.

- Ross, A. 1994. Trust as a moderator of the effect of performance evaluation style on job-related tension: A research note. *Accounting, Organizations and Society* 19: 629-635.
- Sholihin, M., and R. Pike. 2009. Fairness in performance evaluation and its behavioral consequences. *Accounting and Business Research* 39 (4): 397-413.
- Sholihin, M; R. Pike, M. Mangena, and J. Li. 2011. Goal-setting participation and goal commitment: Examining the mediating roles of procedural fairness and interpersonal trust in a UK financial services organisation. *The British Accounting Review* 43: 135–146.
- Thibaut, J., and J. Walker, 1975. *Procedural Justice: A Psychological Analysis*. New York: John Wiley.
- Thibaut, J., and L. Walker, L. 1978. A theory of procedure. *California Law Review* 66: 541 - 566.

