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## **Managerial influence on the implementation of pay systems**

A model describing how managers can contribute to pay system success

Aino Salimäki, Anna Ylikorkala, Kiisa Hulkko, Göte Nyman and Pertti Keskiavaara

### **Abstract**

Results-based management has emerged at the forefront of both public and private sectors. The new trends gaining ground in management culture, as well as in strategic thinking, are also detectable in employee compensation practices. Decisions about employees' pay are increasingly made taking into consideration the achievement of organization-wide goals and are becoming more closely linked with organizational strategies. New pay systems are based on the performance of an employee, their responsibilities, competencies, team-player skills and ability to play many roles in a team, among others. At the same time, the decision-making procedures regarding pay have been decentralised, enabling immediate superiors to evaluate employees' personal achievements and have an impact on employee salaries. Managers face new challenging tasks: they are required to set goals and appraise employee performance.

The aim of this study is to ascertain how managerial actions in a pay system implementation contribute to employees' perceptions of pay system success. The study was conducted in a central government organization that had implemented a pay system containing a pay share based on individual performance appraisal. This study develops a hypothetical model that aims to describe the process through which managers have impact on the success of the pay system. The model posits that the impact of managerial actions on pay system success is mediated through enhanced employee knowledge of the pay system functions, the perceived meaningfulness of the pay system, and fairness of the procedures in performance appraisal. The results of the study suggest that managers can contribute to pay system success through a performance management process based on mutual trust. First and foremost, for the employees to be satisfied with the pay system and perceive that the pay system is effective, they should be familiar with it and perceive a link between their performance and pay. Fair performance appraisal was a significant factor contributing to employee pay satisfaction but not pay system effectiveness.

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<sup>1</sup> Originally in Finnish: "Esimiehet palkkausjärjestelmän soveltajina: Malli siitä, miten esimies voi vaikuttaa palkkausjärjestelmän toimivuuteen" © Suomen psykologinen seura

The character of employee compensation is changing from administrative pay systems towards more flexible pay systems. The change is evident in Finland (Hakonen, Kuronen, Hulkko & Palva, 2001; Hakonen, Salimäki & Hulkko, 2005) and elsewhere in the world (see Heneman, Greenberg & Fox, 2002 among others). This new tendency has been given various names such as *strategic pay* (Lawler, 1990), *new pay* (Schuster & Zingheim, 1992), and *performance-based pay* (Heneman & Gresham, 2002). Strategic pay fits the modern, constantly changing work environment (Heneman & Gresham, 2002) where the strategic objectives of the organization guide pay decision-making (Thierry, 1998). Administrative pay systems that are often applied disregarding the undergoing changes in work environments may be considered the opposite of strategic pay (Lawler, 1990). In Finland, the tendency for strategic pay has been strong in the current collective bargaining contracts, which define job evaluation and performance appraisal as the primary grounds for pay decisions (Lahti, Tarumo & Vartiainen, 2004). The use of results-based pay and performance-based pay has become increasingly common in all work sectors (Hakonen et al., 2005; Hulkko, Hakonen, Hakonen & Palva, 2002).

According to previous research, employees are frequently more dissatisfied with the procedures used to determine salaries, such as the performance appraisal methods in use, than with the general salary level (LeBlanc & Mulvey, 1998; Mulvey et al., 2002). Since the immediate supervisors are often the ones to conduct performance appraisals, they hold a decisive position in how the pay system implementation procedures are experienced by the employees (Greller & Parsons, 1995). Pay system implementation starts when a new pay system is developed, also has to be effectively put into practice. This study focuses on employee perceptions of the successful implementation of a pay system. From the managerial perspective this means applying the new the system in practice in such a way that it is perceived effective by the employees, and they are satisfied with it. The study draws from the literature on strategic pay (Lawler, 1990 among others), where the primary idea is that compensation practices should not just be used administratively to distribute pay among employees but to effectively align management practices with the strategic goals of the organization. This means that the manager has to adopt a new role in setting employee goals, aligning them with those of the organization, and then appraising the achievement of the goals for example during developmental discussions. In all, performance-based pay as a form of strategic pay ideally enables managers to reward employees for their good work performance.

In previous research, the success of a given pay system has usually been studied either by exploring how *effective* the system has been in achieving its goals, or how *satisfied* the employees are with the system and their new pay. Even though previous research has demonstrated that satisfied employees also often perform well (e.g., Mulvey et al, 2002), but it is not obvious that high employee pay satisfaction would lead to achieving the goals set for a given pay system. The study performed by LeBlanc & Mulvey (1998) shows that employees who were rewarded for their personal achievements performed best and were also most committed to their organization. However, for the most part these same employees (80% of them) were dissatisfied with the pay system. In this case, the pay system has succeeded in motivating performance but the employees are

not satisfied. Which is the right criterion for appraising the success of a compensation practice: employee pay satisfaction or goal attainment? Hulkko et al. (2002) state that both should be used: “A pay system is well-functioning when employees and managers are satisfied with it and the organizational goals are met using it” (pp. 59).

This study is based on employee survey data from a one government organization that has implemented a pay system enabling managers to contribute to pay system functions. The conceptual framework integrates the literature on strategic pay, knowledge of pay, reflection theory, and perceptions of procedural justice. The hypothetical model is empirically tested using structural equation modeling.

## Managerial actions in performance management

The starting point for strategic pay is well-functioning performance management. Ideal performance management aligns individual goals with organization-wide strategy and is supported by the pay (or reward) system. Managers should derive individual goals from the strategy of the organization and work with employees to produce a realistic implementation plan. The goals must be clear and employees must be able to know what to do in order to achieve them. Performance management often concretizes in developmental discussions during which future goals are set, and achieved results, advancements, as well as developmental needs are evaluated, and where employees receive individual feedback on their work performance.

Organizations have varying practices in developing and carrying out performance appraisals. Some organizations develop the performance appraisal system as a joint manager-employee effort; some consider that it is solely the responsibility of personnel administration. There is also variation in the ways in which managers carry out performance appraisals. Thus, besides how performance appraisal procedure is planned and instructed to be carried out (Heneman & von Hippel, 2002), the personal characteristics of the evaluator such as their attitudes, skills, knowledge, and personal preferences also have an impact on how the performance appraisal is carried out in practice (e.g. Borman, White, Pulakos & Oppler, 1991; Lefkowitz, 2000). When pay systems based on performance appraisals are criticized, suspicions often arise from misbeliefs on the managers' ability to make objective appraisals (Heery, 1996, among others).

Longenecker, Sims and Gioia (1987) have observed that managers do not always even aim at making accurate appraisals of employee performance. They conclude that evaluating performance is a means of optimizing gains, especially when performance appraisal is directly connected to pay. This optimization occurs because performance appraisals have an impact on both employee reactions and their career development, not to mention the survival and success of the manager himself (Gupta & Jenkins, 1996). If managers are highly dependent on employee expertise, they are likely to ensure high appraisal scores and pay raises to those employees (Bartol & Martin, 1990; Gupta & Jenkins, 1996). On the one hand, managers may give high

appraisals to solidify their own position, but, on the other, by giving negative estimates they may shift the blame for the unsatisfactory performance of their remit to their subordinates (Heneman & von Hippel, 2002).

Mutual trust is the fundamental part of well-functioning performance management process. Trust has many longstanding effects, including higher employee job satisfaction and work performance (Biljlsma, Katinka & Koopman, 2003; Dirks & Ferrin, 2001; 2002). Successful supervisory work consists of both performance *management*, such as discussing work goals and their achievement, and *leadership*, such as openly discussing work-related subjects. Accordingly, the study focuses on employee perceptions of managerial actions in a performance management process that involves mutual trust between the employee and the supervisor.

### Perceived procedural justice in performance appraisal

At least three dimensions of organizational justice have been identified in previous research: distributive justice, procedural justice, and interactional justice (Greenberg, 1990). Distributive justice refers to the fairness of the outcome of decision making, which in the context of this study is pay. Procedural justice refers to the fairness of procedures that led to a decision: Has the decision-making process been fair? Interactional justice refers to perceptions of the treatment a person has received: Does the individual feel that he or she is being treated honestly, kindly, and with respect? This research focuses employee perceptions of procedural justice in performance appraisal.

Procedural justice can be divided in two dimensions, systemic and rater procedural justice (Cropanzano & Greenberg, 1997; Folger & Cropanzano, 1998). Previous research has found that people make attributions when they judge how fairly they were treated. More specifically, people make attributions of what or who is responsible for those experiences (Masterson et al., 2000, Folger & Cropanzano, 1998). When employees think about their performance appraisal-related experiences of procedural justice, they can attribute the fairness to both the appraisal system and the manager implementing it (Erdogan, Kraimer & Linden, 2001). This makes organisations responsible for experiences of injustice concerning performance *appraisal systems* and managers responsible for experiences of procedural injustice concerning the performance *appraisal process* itself. Thus, the performance appraisal system itself may be seen as unfair, although simultaneously the manager might be considered just in his or her performance appraisal. This also works the other way. Indeed, previous research has shown that a formal pay-for-performance system that was considered as an overall fair procedure by the employees discouraged the employees from crediting their managers with the fairness of their actions (Greenberg, 2003). Therefore, systems generally perceived as fair emphasize the managerial role because managers cannot blame the system for employees' experiences of injustice.

Perceptions of procedural justice are related to employee satisfaction with organizational decision-making (Greenberg, 1990). Indeed, many studies have shown that if employees perceive the procedures to be fair, they are most likely satisfied with their pay (Cohen-Charash & Spector, 2001; Colquitt, Wesson, Porter,

Conlon & Ng, 2001). Since the fair actions of the manager are particularly important in performance-based pay systems, it can be assumed that there should be a strong relationship between procedural justice and pay satisfaction. Additionally, fair pay procedures should be seen as effective in the organizations.

## Knowledge of pay

Studies on pay systems and experiences related to them have shown that informing employees of the pay system functions enhances employee pay satisfaction (Heneman & Judge, 2000). The term 'knowledge of pay' means that the employees are familiar with the pay system, as well as their individual performance goals, know where to obtain additional information, and have knowledge of general job market pay levels (Mulvey et al., 2002; Heneman & Judge, 2000). However, a high level of knowledge of pay does not necessarily mean employees know the salaries of their fellow employees.

According to a study conducted in the US, employees generally understood how their performance management procedures work but considerably less was known about how their pay systems work, or should work (Mulvey et al., 2002). Specifically, according to the study conducted by Mulvey et al (2002), employees were unaware of what they should do in order to get a raise or reward, when pay raises are decided, and by whom. Thus, it seems that employees are generally aware of how their own goals are linked to organizational ones, but less often realize whether there is a link between their work performance and pay. Also other research has shown that for the most part, employees have been dissatisfied with the information given on pay systems (LeBlanc & Mulvey, 1998).

We have learned through research on performance appraisal that sufficient information, in this case on performance-appraisal criteria, is related to employee satisfaction (Williams & Levy, 1992; Williams & Levy, 2000). Also the expectations become more realistic: the better the employee thinks he or she knows the performance appraisal system, the better the self-evaluation on job performance corresponds with manager appraisal. However, in some cases, information of the pay system can decrease satisfaction. This occurred in a study conducted by Graham and Welbourne (1999), which showed that as women became increasingly aware of their lower status when a new pay system was implemented, the less satisfied they were. Burchett and Willoughby (2004) have also reported that knowledge of a disadvantageous pay system decreased productivity. When the employees did not know about their disadvantageous pay system, there was no difference between the productivity of higher and lower paid employees.

Mulvey et al. (2002) suggest that knowledge of pay would predict pay satisfaction and, through pay satisfaction, organizational efficiency. According to the model, human resource management practices, such as performance management, pay system communications, training, and development, can influence employee understanding about pay systems. It is presumed that managers have a decisive influence on employee understanding of the goals organizations pursue with pay systems. This takes place in discussions

about performance expectations and especially about what kind of impact achieving personal objectives has on pay. At least one study has shown a strong correlation between knowledge of pay and pay satisfaction (Mulvey et al., 2002), but there has been no research on the possible effect of managerial actions on knowledge of pay.

### Message conveyed by the pay system

According to reflection theory, pay conveys important messages (Thierry, 1998; 2001). The theory suggests that pay itself contains no informative value, but it communicates its meanings through things that are important to an individual. Thierry (1998) describes the meaning of pay with four dimensions called *motivational properties*, *relative position*, *control* and *spending*. In the eyes of employees, a pay system is seen as meaningful when it enables them to attain things of personal importance (motivational properties). Any reward may also be considered important since it is a means of giving feedback on personal work performance in relation to the achievement of personal goals or co-worker performance (relative position). Rewards transmit a message of how valuable the employee is to the organization (control). Finally, rewards materialize in goods and services bought with them (spending).

From the four dimensions described above, we chose to study only the dimension 'relative position' as we thought it reflects the messages possibly conveyed during a performance management process. Relative position emphasises that pay is a means of giving feedback on task goal achievement. Relatedly, pay also enables peer-to-peer comparison with respect to co-employees and individuals holding similar positions in different organizations, and thus communicates how important the employee is for the organization.

According to the reflection theory, pay system structure and implementation, as well as the link between pay politics and personnel strategy, constitute the degree in which pay communicates these meanings (Thierry, 1998). There has been little empirical research on the arguments of reflection theory. Some studies have demonstrated that there is a positive association between the experienced meanings of pay and pay satisfaction (Thierry, 2001). Reflection theory suggests that the meaning pay holds for an individual can be deduced from personal characteristics and the level of familiarity the person experiences with the pay system. Thus, according to the model, knowledge of the pay system is a prerequisite for any pay system to have an impact on individual performance. This claim has not, however, been empirically demonstrated. Only a very weak relationship between knowledge of pay and meaning of pay has been detected (Thierry, 2001). Thierry (1998) assumes that manager support and feedback makes a significant contribution to how employees interpret the meanings of pay. Also other studies have concluded that the quality of performance feedback has an impact on how the message of pay is interpreted (Greller & Parsons, 1995).

## Research problem, hypotheses, and structural model

Based on the theories presented above it can be concluded that managers are assumed to play a decisive role in pay system implementation processes. It is not known, however, how managerial actions in performance management are related to employee perceptions of pay system functions, such as knowledge of pay, message conveyed by the pay system, and procedural justice. This study uses the term ‘managerial actions’ to refer to a performance management process based on trust. The aim is derive a hypothetical model that describes the impact of managerial actions on pay system success: employee pay satisfaction, and the perceived effectiveness of the pay system.

It is assumed that managerial actions, especially giving feedback and support as described in Thierry’s (1998, 2001) model contribute to the message conveyed by pay and through that, to pay system success. It must be noted, however, that the model has only been subjected to partial empirical tests. Although Thierry’s model emphasizes the role of the manager, there has been no research that would explore whether employee perceptions of managerial actions explain the messages the pay systems convey, and whether these messages explain pay system success. According to the reflection theory, it is hypothesized:

Hypothesis 1: *Managerial actions increase<sup>2</sup> pay satisfaction through the message conveyed by the pay system* (Diagram 1, see mediation path 1-8)

Hypothesis 2: *Managerial actions increase the perceived effectiveness of the pay system through the message conveyed by the pay system* (Diagram 1, see mediation path 1-9)

It is presumed, according to the model presented by Mulvey et al (2002), that managers are able to influence employee knowledge of pay system functions and, through that, the success of the pay system. This study aims to ascertain whether managerial actions increase both pay satisfaction and the perceived effects of the pay system through knowledge of pay.

Hypothesis 3: *Managerial actions increase pay satisfaction through knowledge of pay* (Diagram 1, see mediation path 2-6)

Hypothesis 4: *Managerial actions increase the perceived effectiveness of the pay system through knowledge of pay* (Diagram 1, see mediation path 2-7)

Rater procedural justice is an important factor in pay systems based on performance appraisal (Erdogan et al., 2001). The relationship between procedural justice and pay satisfaction and individual performance has been

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<sup>2</sup> In this study, for simplicity, the word increase is used to mean that the independent variable is positively associated with the dependent variable. Since this is not a longitudinal design, we cannot draw valid inferences concerning the cause-effect relationship.

established in several meta-analyses (Cohen-Charash & Spector, 2001; Colquitt et al., 2001 among others), but the studies have not discerned attributions to managerial influence. The current knowledge is particularly incomplete with respect to what extent rater procedural justice explains perceptions of pay system effectiveness. However, it is assumed that managers influence pay system success through fair procedures in performance appraisal.

Hypothesis 5: *Managerial actions increase pay satisfaction through rater procedural justice* (Diagram 1, see mediation path 3-4)

Hypothesis 6: *Managerial actions increase the perceived effectiveness of the pay through rater procedural justice* (Diagram 1, see mediation path 3-5)

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According to the hypothetical model (Diagram 1), managerial actions in a performance management process do not directly advance the pay system success, but do it through enhanced employee perceptions of procedural justice, knowledge of pay, and the message conveyed by the pay system.

## Methods

### Target organization and respondents

The organization under study is a government sector expert organization that at the end of year 2002 had about 1,000 employees. The study was conducted during spring 2003 when the base pay system, first introduced in 1998, had been operational for five years. The organization had transferred from salary grades and seniority increments to salaries based on job evaluation and performance appraisal. The goals for the new pay system were to motivate employees, improve the equivalency of pay to tasks and the competence required for completing them, support personnel competence development and gravitation towards more demanding tasks, as well as improve the organization's competitiveness in the job market. Especially attracting and retaining highly educated employees was desired.

The study focused on a performance-based pay share, which aims at rewarding good performance. Performance-based pay increases were distributed based on yearly development discussions with the immediate supervisor. The organization studied had three tiers of managers from CEO to unit managers and low-level supervisors. The word 'manager' in this context refers to any manager responsible for holding yearly development discussions with their subordinates. In this context, the managers' responsibility was to set goals, give feedback, and evaluate employee performance. To conduct fair appraisal was within the

manager's field of responsibilities, but pay was also determined by manager-independent factors, such as organization-wide pay policy solutions, and possibly the views of higher-level managers. The connection of performance appraisal and salary rises was discretionary, as the unit manager held the final authority on raising employee salaries within a certain policy framework.

The employees of the five units of the target organization were randomly sampled so that five people from each remit received the questionnaire or if there were less than five employees in one remit, all of them received the questionnaire. Those holding managerial positions were not included in the sample. The sampling technique used is best described as a two-stage cluster sample. As the target population consists of the non-managerial personnel of the sampled units, the sampling fraction average was 44% (range in different units varied between 32 and 73%). In all, 187 questionnaires were handed out to employees. Due to leaves of absence or switching jobs, six respondents were unable to answer the questionnaire. 112 responses were received (response rate was 60%), of which three had to be eliminated due to missing entries. The response rate can be considered fair as the response rate of a recent work climate study conducted by the organization itself fell well within reach.

A non-response analysis was carried out using six demographic variables. The demographic variables of respondents who returned the questionnaire were compared with the information received from the units under study. The distributions of demographical information were quite well in line with the overall unit employee background distributions for gender, educational background, employment status, and work history. Respondents in the age group 25-29 years were slightly overrepresented.

The final data consists of 109 employee responses, which amounts to about 15% of the whole personnel. Most of the respondents were female (62.4%) and regular employees (84.4%). The average respondent age was 45 years. 5.5% of respondents had comprehensive school or elementary school education, 27.5% had vocational qualification or upper secondary school education, 13.8% of respondents had college-level training, 4.6% vocational high school or polytechnic education, 45.9% had received a master's degree and 1.8% of respondents had licentiate or doctoral degrees.

## Evaluation methods

The study was survey-based. The Rater Procedural Justice measure was a direct translation from English to Finnish. As a factor solution for it has been presented earlier, the structure of the measure was examined using confirmatory factor analysis. The managerial actions and pay satisfaction measures were assumed to be multidimensional. The structure of these measures was studied using explorative factor analysis. All the measures in this study are formulated statements and use a 5-point Likert scale (for a detailed description of the measures, see Salimäki, 2004).

The Managerial Action measure had items that described performance management through the stages of goal-setting, goal-enabling, goal-realization, and monitoring to the feedback. Some items are similar to those in the Supervisory Behaviors measure (*goal emphasis dimension*) used by Butcher (1994), but it is not a direct translation of it. An explorative factor analysis was performed, according to which a three-factor solution fit the data. The formed summated variable 'goal-setting and monitoring' consists of five items (Cronbach's alpha .88) that describes employee-experienced performance management through the processes of goal-setting, goal-enabling, and monitoring. A sample formulation: "*My manager enables reaching goals by establishing the needed prerequisites for it*". The variable 'mutual trust' consists of five items (Cronbach's alpha .92), which describe how open and trust-evoking manager-employee interaction is, such as "*I feel that I can discuss work-related issues openly with my immediate superior*". The variable 'feedback' consists of three items (Cronbach's alpha .87), which describe employee experience of received managerial feedback on work performance and professional skill development, such as "*My immediate supervisor often gives feedback on my work performance*".

A translation of the scale used in Erdogan et al. (2001) was used to measure rater procedural justice. The respondents were presented with claims relating to performance appraisal procedure. The measure included three items that describe the fairness of the system, such as "*The performance appraisal system in our organization makes it possible to differentiate high performers from poor performers*" and six items describing rater procedural justice such as, "*I do not believe that my supervisor will give me a high score no matter good my performance is*". The qualities of the measure were studied using confirmative factor analysis and the LISREL 8.53-program (for details, see Salimäki, 2004). As this study focuses on rater procedural justice concerning managers, the items describing the fairness of the appraisal method were not included in the further analysis (Cronbach's alpha .90).

A modified version of the Base Pay Knowledge measure introduced in Mulvey et al (2002) was used to study knowledge of pay. The respondent was asked to evaluate his or her experienced knowledge of the pay system, such as "*I understand how my pay increases are determined*". The measure consists of eight items (Cronbach's alpha .83).

The message conveyed by the pay system was measured using the Relative Position part of the Meanings of Pay measure introduced in Miedema-Van den Heuvel (1994), for example, "*Through my income I learn how well I meet job expectations*". From the eight items a summated scale with .94 reliability was calculated.

To study pay satisfaction, the Heneman and Schwab (1985) measure was modified. The Pay Satisfaction Questionnaire (PSQ) presented by them has four dimensions; satisfaction with pay level, raises, benefits, and pay structure /administration. The measure has been modified later by combining the last two dimensions.

The psychometric characteristics of the measure have been widely studied (see roundup from Heneman & Judge, 2000) and the multidimensionality of the phenomenon has received strong support. Because this study focuses on studying base pay, the PSQ items concerning benefits were omitted. The measure was additionally modified to fit the Finnish cultural context. The items presented in the original construct description were always retained whenever possible. The respondent was asked to evaluate how much he or she agreed with the claims regarding pay satisfaction. An explorative factor analysis was performed to the scale using the maximum likelihood method and varimax rotation. A three-dimension structure best fit the data. Following that structure, the variable 'Satisfaction with pay position' comprises of six items (Cronbach's alpha .87) describing satisfaction with one's position within the pay system, such as "*I am satisfied with the size of my base pay*". 'Satisfaction with pay policy' comprises five items (Cronbach's alpha .84) describing satisfaction with the structural and administration-related solutions in the pay system, such as "*I am satisfied with the way the pay system is currently being applied within the organization*". 'Satisfaction with the pay system implementation' comprises two items (Cronbach's alpha .83) describing satisfaction with pay raises and other ways the system is applied in the unit, such as "*I am satisfied with the way decisions about pay raises are made*".

The perceived effects of the pay system were studied by asking the employees directly how they felt the pay reform had influenced the organization's functions and their own activities. Each respondent was asked to evaluate the effects of the pay system reform with regard to various goals of the reform. The pay reform aimed, on the one hand, to develop personnel competence, such as '*The personnel's desire to improve their competence*' and, on the other, to organizational performance such as '*Financial success of the organization*' and personnel work motivation such as '*Making an effort in one's own work*'. Even though the set goals were eclectic, a mean variable consisting of 14 items was calculated (Cronbach's alpha .85) that describes the overall effectiveness of the pay system in achieving its goals.

## Course of the study

The sampled employees received the questionnaire and a return envelope by mail. The envelopes had been numbered to make it easier to recognize the remits. The questionnaire emphasized that answers would be handled confidentially. The management of the organization also encouraged answering.

## Statistical methods

The study tested six mediator hypotheses, which posited that the effect of the independent variable on the dependent variable is mediated through one or more variable. Currently, there is no overall consensus on how mediation should be best statistically tested (MacKinnon, Chondra, Lockwood, Hoffman, West & Sheets, 2002). This study tests mediator hypotheses using structural equation modeling. As proposed by Baron and Kenny (1986), tests for the significance of the hypothesized paths  $\alpha$  and  $\beta$  shown in Diagram 2 are conducted.

Then, the direct path  $\gamma$  is added. If, after adding the direct relationship or before doing so,  $\alpha$  and/or  $\beta$  are not significant, it is noted that no mediation occurs. If paths  $\alpha$  and  $\beta$  are significant but the direct path  $\gamma$  is not, and adding it to the model does not significantly improve the model, it is deduced that the mediator M fully mediates the relationship between the dependent and independent variables. If all of the three estimators,  $\alpha$ ,  $\beta$ , and  $\gamma$ , are significant, partial mediation is concluded. The testing method used in this study is based on Kenny, Kashy and Bolger (1998) and Shrout and Bolger (2002) among others, positing that it is not necessary to prove the significance of the relationship between the independent variable X and the dependent variable Y as has been traditionally done using regression analysis (Baron & Kenny, 1986) if the relationship between the explanatory variable and the explained variable is theoretically distal.

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Structural equation modeling (using LISREL 8.53) was used particularly because it enables simultaneous testing of the hypotheses. Structural equation modeling (SEM) also makes it possible to account for the measurement error in variables, which is not possible in regression analysis (see for example Brown, 1997). This study uses the model development/generation approach with the estimation method of maximum likelihood. Structural equation models utilize a path model formed of summated scales. The measurement model was not estimated because estimating the full model would have considerably increased the number of estimated parameters.

According to simulation studies, SEM analyses with samples of less than 100 often result in unreliable estimates (Hoyle & Kenny, 1999; Bollen, 1989). The hypothetical model described in detail in the result section of this study has an overall of 25 parameters to be estimated, leaving the sample only 4.4 times greater than the number of parameters. A sample size of at least 5 times greater than the number of parameters is the usual recommendation, especially if some of the variables used do not follow normal distribution or have high multicollinearity. Overall, we conclude that the sample of 109 employees used in this study is a meager, but sufficient, sample for maximum likelihood estimation in SEM

The suitability of the data for structural equation modeling was examined before conducting the analyses. The amount of missing data was not high and missing entries were replaced with mean values. The normality of the variables was tested by checking distribution skewness and kurtosis. The variables ‘Procedural justice applied by managers in performance appraisal’ ( $z = -3,99$ ), ‘Goal-setting and goal monitoring’ ( $z = -3,15$ ) and ‘Mutual trust’ ( $z = -5,23$ ) had skewed distributions, with their z-test values over the 5% risk level limit. The distribution of the variable trust was too flat ( $z = 3,07$ ). ‘Rater procedural justice’ and ‘Mutual trust’ variables

were transformed with an exponential function. The skewness of the 'Goal-setting and goal monitoring' variable remained even after the attempts to transform the distribution.

VIF (variance inflation factor) and tolerance coefficients were used in examining multicollinearity. There are no absolute limits for evaluating multicollinearity, but Hair, Anderson, Tathan and Black (1998), have noted that strong collinearity is indicated by variance inflation factor (VIF) values greater than 10 and, respectively, a tolerance factor smaller than .10. Both the VIF and the tolerance factors were close to 1 for all variables except for 'Mutual trust' and 'Rater procedural justice' (VIF = 2.14, tolerance = .47). This seems to indicate that some degree of collinearity exists between the last two variables. The VIF and tolerance values did, however, decrease when the variable distributions were transformed using exponential function.

A correlation matrix was utilized as a basis for the structural equation analyses, because it allowed to account for the measurement error of the variables. Yli-Luoma (1996) recommends using reliability coefficients when a single latent variable is approximated by a single measure. The error variance estimation has been done by deducting internal reliability (here Cronbach's alpha) from total residual variance. The use of a correlation matrix partly eases interpretation because it standardizes the variables. The correlation matrix standardizes the variance of each variable to 1.

Recommendations made by Hu and Bentler (1999) have been used when evaluating the goodness of fit of the model:

- 1 RMSEA (Root mean squared error of approximation) .06 or smaller
- 2 CFI (Comparative fit index) and GFI (Goodness of fit- index) no less than .95
- 3 RMR (Standardized root mean square residual) .08 or smaller.

The error between the data and the model has also been estimated by  $\chi^2$  and the p-value attached to it. If  $p > .05$ , the hypothesis of similarity between data and the theoretical model does not have to be abandoned at the 95% risk level. Goodness of fit was also tested by using a rule of thumb  $\chi^2/df < 5$  effective for multidimensional models (for further information, see for example Yliluoma, 1996).

## Results

Pay level expectedly correlated with two of the pay satisfaction variables, 'satisfaction with the pay system implementation' ( $r = .22, p < .05$ ) and 'satisfaction with pay position' ( $r = .20, p < .05$ ), but the correlation between pay level and 'satisfaction with pay policy' was not significant. In order to control for the pay level in the further analyses, a linear regression analysis was performed where pay level predicted the two variables. The residual has been used in the further analyses.

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The correlation matrix (Pearson correlation coefficients) used as the basis of the structural equation modeling and the significance of the correlations are shown in Table 1. The managerial action dimensions are correlated with the mediators knowledge of pay, message conveyed by the pay system, and rater procedural justice. The managerial action dimensions are correlated with the pay satisfaction dimensions but not, as presumed, with the perceived effectiveness of the pay system. Knowledge of pay and message conveyed by the pay system are correlated with both pay satisfaction and perceived effectiveness of the pay system. Rater procedural justice is correlated with pay satisfaction but not with the perceived effectiveness of the pay system.

Structural equation modeling was used to study the hypothetical model, which assumed that all the presented hypotheses would be correct (Diagram 3). The test of the model accounted for variable measurement errors (Cronbach's alphas) and the correlation between pay level and two of the pay satisfaction measures. One latent variable was used to depict pay satisfaction in order to simplify the model. The loadings of the pay satisfaction dimensions on the latent variable 'pay satisfaction' were significant<sup>3</sup>. Because managerial actions were represented by three variables but their error variances correlate strongly, for simplicity, each of these variables predicts only one of the three mediating variables in the model. Although the results support the presented hypotheses for the most part, the model did not optimally fit the data (see Table 2).

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INSERT DIAGRAM 3 ABOUT HERE  
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Because the model did not optimally fit the data, some adjustments were made based on modification indexes. A non-significant path from rater procedural justice to pay system effectiveness was removed (see Diagram 4). Correlation between the error variances between the pay system effectiveness and pay policy satisfaction was allowed (error correlation .23,  $p < .05$ ). Additionally, the modification indexes clearly showed that the message conveyed by the pay system mediates the relationship between knowledge of pay and dependent variables. These modifications significantly improved the model ( $\Delta\chi^2(df=1)=25.25$ ,  $p < .001$ ). The model explains 56% of the variation in pay satisfaction and 20% of the variation in perceived pay system effectiveness. A substantial part of the variance especially in perceived effectiveness is, however, left unexplained.

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<sup>3</sup> The loadings: satisfaction with pay position .78 (error variance .38), satisfaction with pay policy .65 (error variance .58), and satisfaction with pay system implementation .76 (error variance .43)

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INSERT DIAGRAM 4 ABOUT HERE  
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Three variables did not follow normal distribution. The distribution form of the mutual trust and rater procedural justice –variables was transformed using exponential functions. Fixing the distributions of these variables slightly improved the model fit (see Table 2), but the variable estimates were similar to those in the final model seen in Diagram 4.

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INSERT TABLES 2 AND 3 ABOUT HERE  
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The possible full, partial or non-existent mediative effects were studied further by using the hypothetical model as a starting point. This enabled controlling other paths while simultaneously testing for the significance of the direct effects from managerial actions to pay satisfaction and pay system effectiveness. Table 3 shows that adding direct relationships between managerial variables and pay satisfaction or pay system effectiveness did not significantly improve the model.

## Discussion

The aim of this study was to develop a theoretical model that would describe how managerial actions in a pay system implementation contribute to employees' perceptions of pay system success. The developed model was tested by using survey data that was gathered from one government sector organization and analyzed statistically. This study uses the term 'managerial actions' to refer to a performance management process which emphasizes a mutual trust in the manager-employee relationship. The hypothetical model developed in the study is based on strategic pay framework, according to which the new performance-based pay systems aim to support the realization of organizational strategies (see Lawler, 1990, among others). In practice, the immediate supervisor is the person who should link single-employee goals to organizational strategy and to the goals of the compensation system. In practice, this occurs when employee performance is evaluated with strategically important criteria and good performance is leads to an increase in employee pay level. In this study, two outcomes were assessed when talking about pay system success: whether the employees were satisfied with their pay and the system was perceived effective in achieving its goals.

The results suggest that the manner in which managers are perceived to set goals, give feedback, and create a relationship of trust has an indirect impact on pay system success. The results obtained from this study supported five of the six hypotheses presented and thus provide support for the models by Thierry (1998,

2001) and Mulvey et al. (2002). Managers should be able to have an impact on employee knowledge of pay and the meaning conveyed by the pay system through a well-received performance management process. Mutual trust is an important factor in enabling experiences of procedural justice in performance evaluation. The perceptions of justice were associated with higher pay satisfaction. However, contrary to one of the presented hypotheses, there was no relationship between experienced procedural justice and effectiveness of the pay system.

The results of this study suggest that managers are able to influence both pay satisfaction and pay system effectiveness through communicating the functions of the pay system. This result arises from survey data that was analyzed using structural equation modeling. The results show, as proposed in the model by Mulvey et al. (2002) that knowledge of pay mediates the effect of goal setting and monitoring on pay satisfaction and perceived effects of the pay system. The results show that knowledge of the pay system structure and how it is connected to individual work goals is related to higher satisfaction with the pay system. This can be interpreted as a result of more realistic expectations about pay prospects. It has been noted that employees are more satisfied with their pay if they see that it is linked to work performance (Heneman, Greenberg & Strasser, 1988). This occurs even if the pay system is not directly linked to performance management system (Giles & Mossholder, 1990). As managers hold developmental discussions with each employee, they might consider clarifying how goal achievement is and is not related to pay. This should facilitate employee understanding of performance expectations and what implications performance has on pay.

The effect of feedback on employee pay satisfaction and the pay system effectiveness seemed to be transmitted through increased meaningfulness of the pay system. The mediative association was established using structural equation modeling where the message conveyed by the pay system mediated the relationship between feedback and pay satisfaction. The results suggest that giving feedback and acknowledging employee work achievements are mediums through which managers should be able to influence the kinds of messages the pay system conveys. The pay system is seen as meaningful if managers use it as a tool for giving feedback, which increases satisfaction with pay-related issues. The results support the reflection theory presented by Thierry (1998, 2001).

Improving the hypothetical structural equation model showed that the message conveyed by the pay system mediates the relationship between knowledge of pay and pay system success. This result could be interpreted using the description of reflection theory presented by Thierry (1998, 2001) as follows: It is possible that an employee knows the system as such, but does not understand how it works for him or herself specifically. The employee may receive a performance-based pay share, but may not be certain if receiving it is a result of an above-average performance, for example. Respectively, employees may not know what to do to get a raise. As noted in Kohn (1993), pay systems are strongly activity guiding, but often reinforce undesired behaviors. According to Kerr (1995), this may be because often the desired results differ from the work actually paid or

rewarded for. Thus, the pay system may convey a message other than the one desired. According to Kerr (1995), this is because the reward criteria are often chosen from easily available key figures that do not represent personnel work performance. In this case, the pay system does not communicate the goals and values considered important in the organization. In order to accomplish strategic goals with a pay system, the plans for implementing strategy should be linked to the pay system. The connection between strategy and a compensation system is often entirely reliant on the skills possessed by the immediate supervisor. Mere organization-offered knowledge of the pay system does not necessarily in itself act towards greater pay satisfaction (Graham & Welbourn, 1999; Burchett & Willoughby 2004). Managers face a challenging task when trying to utilize the systems as a tool for leadership for communicating the desired goals and make employees satisfied in cases where employees know the pay systems but deem them unsatisfactory or unfair.

Of the three managerial action dimensions, mutual trust was strongly associated with rater procedural justice. Many studies have shown that procedural justice relates to satisfaction with supervisor and employee trust in supervisors (Cohen-Charash & Spector, 2001; Folger & Konovsky, 1989; Korsgaard et al. 1995). When supervisors are trusted, it is also believed that they can be fair in their performance appraisals. This study found no relationship between the fairness of performance appraisals and the perceived effectiveness of the pay system (compare with Cohen-Charash & Spector, 2001). This may remind us that even if performance appraisal is considered fair it does not necessarily imply that the pay system is effective.

Overall, the hypothetical model of this study only explained a fraction of the perceived effects of the pay system. The correlation of error variances between the perceived effectiveness of the pay system and pay satisfaction suggests that there might be a common factor not considered in the model that may possess more explanatory value for the variance of the aforementioned variables. Besides the manager, other factors also influence the realization of the desired effects of a pay system. These may include the culture of the organization and unit, or higher-level decisions regarding pay system structure (for instance of what is measured) and the conditions set to its usage (guidelines, limitations, and pay budget). In practice, organizations often set limitations on the ways performance appraisals should be conducted and how the appraisals may be connected to pay. The managerial role in pay system success is not likely to be realized if they do not have sufficient authority to implement pay systems.

## Limitations of the study

The results obtained during the course of this study are highly dependent on how the variables used are defined and concepts operationalized (MacCallum & Austin, 2000). Managerial actions have been studied from the viewpoint of performance management, which comprises setting goals, enabling goal achievement, monitoring, giving feedback, and evaluating achievements. Trust in managers was also expected to be a

significant factor predicting the success of the pay system. Further research should focus on whether the interactional skills or management styles influence the perceived pay system success.

Pay satisfaction has been considered as a multidimensional concept (Heneman, 1985; Miceli & Lane, 1991). The dimensions of the pay satisfaction measure used in this study were included satisfaction with pay position, satisfaction with pay system implementation, and satisfaction with pay policy. In order to simplify the model, the structural equations utilized only one latent variable to depict the relationship between the predictor variables and pay satisfaction. It must be noted that predictor variables may hold varying relationships with the dimensions of pay satisfaction (Heneman & Judge, 2000) and unifying the dimensions may result in losing valuable information (Judge, 1993).

The operationalization of the concept 'perceived effectiveness of the pay system' should be reconsidered, as the variance of the variable was small and the level of analysis within the employee responses changes (effect of one's own effort versus organization-wide goals). The goals of the pay reform were diverse, which may imply that pay system effectiveness is multidimensional also in the eyes of the employees. The amount of missing data was relatively high, which may make the results concerning the variable more unreliable. The fact that there was missing data might imply that some of the employees might have not felt comfortable in assessing effectiveness of the pay system, or the respondents may not have wanted to admit they have been influenced by the system. This may be because the former pay system of the studied organization was not designed to support goal achievement and some respondents may have been altogether unfamiliar with the proposition suggesting that pay systems may have an effect, which was embedded in the formulation of the items.

One of the problems of cross-sectional studies is the common method variance, caused by the use of one information gathering procedure, in this case the survey. Only employee experiences were used to study the model. For example, the relationship between perceived and objective knowledge of pay is not known, nor is the relationship between perceived effectiveness of the pay system and its objective effects. Pay satisfaction levels were controlled by taking into account the respondent's pay level. The use of more objective criterion variables, such as the long-term effects of the pay system and actual employee knowledge of pay would have been desired. Qualitative study approach might also be needed to explain what happens when a pay system is implemented, such as in the case of lack of pay satisfaction or perceived link between pay and performance.

A cross-sectional study that simultaneously collects data using the same method also leads to problems when defining causality (MacCallum & Austin, 2000). Based on this study alone, it cannot be known if for example trust is experienced first, which later shows as experiences of fairness or if fairness is experienced first, and is later generalized into trust. Current research posits that experiences of fairness impact managerial image, not vice versa (see Masterson et al. 2000, among others). Procedural justice is conceptually and empirically

separate from trust, but both of them could be considered concurrent parts of managerial actions. In addition, the cause-consequence relationship is not always realized top-down, from managerial behavior to employee behavior. The employees also have an impact on the behavior of the manager. The direction of causality in the studied model is unknown, as the current research remains predominantly correlational. Furthermore, the structural equation modeling does not necessarily support one unequalled model but many alternative models might fit the data. As noted by Cohen, Cohen, West and Aiken (2003), the model that fits is only probable, not necessarily correct. Nevertheless, it is one of the multiple models that fit the data. Although its correctness cannot be certainly proved, its status remains strong and undisputed.

The well-functioning measurement model is a prerequisite for analyzing the structural model. The discussion on whether the measurement model is correct cannot be carried out in the scope of this study, because the validity of the measures cannot be evaluated using solely the data gathered for the purposes of this study. The internal consistency of the measures was good, with reliability estimates ranging between .83-.94. The measurement error was estimated using Cronbach's alpha, although it is not necessarily the best possible procedure (Vehkalahti, 2000). As noted by Cortina (1993), both the number of items and dimensionality of the scale should be considered alongside the reliability estimate when interpreting the results. Alpha grows as a function of the item-internal correlation and gets smaller as a function of multidimensionality. It should also be noted that reverse claims were not used for every scale that would hinder serial effect. After the structure of the measure was examined, summated scales were used because they enable effortless comparison of the results. The comparability of the results to other research is not optimal because the measures have been adapted to fit the context.

An underlying assumption in this study was that managers are able to influence employee experiences of pay system success. The study is limited to studying the impact of managerial role in one organization. The context in terms of organizational structure, pay system and other human resource practices was the same for all respondents. Received results can be generalized to concern the entire organization under study. Based on the non-response analysis performed, the sample can be considered sufficient and representative. As the results of this type of study might depend on the pay system in use and of the authority of the managers hold in implementing it, the model may be applied to large or middle-sized organizations where similar individual performance-based pay shares are used, but it must be done with caution. However, since the model was adapted to fit the context, it could be the case that this model only describes dynamics in this specific context. Additionally, the sample size was small in relation to the analysis method. Result generalization to a larger population would require studying the validity of the model with additional samples (MacCallum & Austin, 2000), which would enable separating between context independent and organization-specific phenomena.

## Final words

This study focused on managerial actions in implementing pay systems as considered in performance management literature. A trusting employee-manager relationship is an important factor in the realization of a performance appraisal process that is considered fair, which is related to employee satisfaction with the pay system. The results suggest that managers can have impact on pay system success via setting goals, goal follow-up, and informing employees of the pay system functions. For the performance appraisal procedure to serve organizational goals, the employee must know how goal achievement is and is not connected to his or her pay. Managerial feedback on performance plays its part in influencing the message conveyed by the pay system. The interpretation of that message is crucial in determining whether employees are satisfied or dissatisfied with their pay and whether they experience that the pay system is effective.

Finally, it should be noted that the link between performance management and pay system may be weak for reasons beyond managerial control. The system in itself may be seen as unsatisfactory and managers may not be given the needed authority to implement it effectively. The organizational context, solutions pertaining to pay, and the distribution of decision-making power within the organization may partially define the quality and existence of the managerial role in a given pay system. Connecting pay with organizational strategies and the performance management processes might require an unambiguous managerial role in pay decisions. However, the success managers have in implementing pay systems ultimately lies in the hands of the managers themselves.

## References

- Baron, Reuben M. & Kenny, David A. (1986) The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations, *Journal of Personality and Social Psychology*, 51:6, 1173-1182
- Bartol, Kathryn M. & Martin, David C. (1990) When politics pays: Factors influencing managerial compensation decisions, *Personnel Psychology*, 43:3, 599-614
- Bijlsma, Katinka & Koopman, Paul (2003) Introduction: trust within organizations, *Personnel Review*, 32:5, 543-555
- Bollen K. A. (1989) *Structural equations with latent variables*. New York: Wiley
- Borman, Walter C., White, Leonard A., Pulakos, Elaine D. & Oppler, Scott, H. (1991) Models of Supervisory Job Performance Ratings. *Journal of Applied Psychology*, 76:6, 863-872
- Brown, Roger L. (1997) Assessing Specific Mediation Effects in Complex Theoretical Models, *Structural Equation Modeling*, 4:2, 142-156
- Burchett, R. & Willoughby, J. (2004) Work productivity when knowledge of different reward systems varies: Report from an economic experiment. *Journal of Economic Psychology*, 25, 591-600
- Butcher, Ann Houston (1994) Supervisors matter more than you think: Components of mission-centered organizational climate, *Hospital & Health Services Administration*, 39:4, 505-521
- Cohen, Jacob; Cohen, Patricia; West, Stephen G. & Aiken, Leona S. (2003) *Applied multiple regression/correlation analysis for the behavioural science*, 3<sup>rd</sup> ed. Lawrence Erlbaum Association, London
- Cohen-Charash, Yochi & Spector, Paul E. (2001) The Role of Justice in Organizations: A Meta-Analysis, *Organizational Behavior and Human Decision Processes*, 86:2, 278-321
- Colquitt, Jason A., Wesson, Michael J., Porter, Christopher, O.L.H, Conlon, Donald E. & Ng, K. Yee (2001) Justice at the Millenium: A Meta-Analytic Review of 25 Years of Organizational Justice Research, *Journal of Applied Psychology*, 86:2, 425-445

- Cortina, Jose M. (1993) What is Coefficient Alpha? An Examination of Theory Applications, *Journal of Applied Psychology*, 78:1, 98-104
- Cropanzano, R. & Greenberg (1997) Progress in organizational justice: Tunneling through the maze, *International review of industrial and organizational psychology*, 12, 317-372
- Dirks, Kurt T. & Ferrin, Donald L. (2001) The Role of Trust in Organizational Settings, *Organization Science*, 12:4, 450-467
- Dirks, Kurt T. & Ferrin, Donald L. (2002) Trust in Leadership: Meta-analytic Findings and Implications for Research and Practice, *Journal of Applied Psychology*, 87:4, 611-628
- Erdogan, Berrin; Kraimer, Maria L. & Linden, Robert C. (2001) Procedural Justice as a Two-Dimensional Construct: An Examination in the Performance Appraisal Context, *The Journal of Applied Behavioral Science*, 32:2, 205-222
- Folger, R. & Cropanzano, R. (1998) Organizational justice and staffing decisions: On the horns of the justice dilemma? *Organizational justice and human resource management*, 81-107, Thousand Oaks, CA: Sage
- Folger, Robert & Konovsky, Mary A. (1989) Effects of Procedural and Distributive Justice on Reactions to Pay Raise Decisions, *Academy of Management Journal*, 32:1, 115-130
- Giles, William F. & Mossholder, Kevin W. (1990) Employee Reactions to Contextual and Session Components of Performance Appraisal, *Journal of Applied Psychology*, 75:4, 371-377
- Graham, M.E. & Welbourne, T.M. (1999) Gainsharing and women's and men's relative pay satisfaction. *Journal of Organizational Behavior* 20, 1027-1042
- Greenberg, Jerald (2003) Creating unfairness by mandating fair procedures: the hidden hazards of a pay-for-performance plan. *Human Resource Management Review*, 13, 47-57
- Greenberg, Jerald. (1990) Organizational justice: Yesterday, today, and tomorrow, *Journal of Management*, 16, 399-432
- Greller, Martin M. & Parsons, Charles K. (1995) Contingent Pay Systems and Job Performance Feedback. *Group & Organization Management*, 20:1, 90-108

Gupta, Nina & Jenkins, G. Douglas Jr. (1996) The politics of pay, *Compensation and Benefits Review*, 28:2, 23-31

Hair, Joseph F.; Anderson, Rolph E.; Tatham, Ronald L. & Black, William C. (1998) *Multivariate data analysis*, 5<sup>th</sup> ed. Prentice Hall, USA

Hakonen, Niilo; Hakonen, Anu; Kuronen, Tanja; Hulkko, Kiisa & Palva, Anna (2001) *Palkitsemisen tila ja muutos Suomessa 2001*. (The current state of reward practices in Finland 2001) Helsinki University of Technology, Laboratory of Work Psychology and Leadership, Espoo  
([http://www.palkitseminen.hut.fi/PDF\\_kansio/Tuloksetyk6.pdf](http://www.palkitseminen.hut.fi/PDF_kansio/Tuloksetyk6.pdf) 21.04.04)

Hakonen, Anu; Salimäki, Aino & Hulkko, Kiisa (2005) *Palkitsemisen tila ja muutos Suomessa 2004*. Yhteistoiminnallinen kehittäminen, yhteensopivuus ja toimivuus. (The current state of reward practices in Finland 2004) Työpoliittinen tutkimus 280. (Research Series of Ministry of Labour, Report 280)

Hakonen, Niilo; Salimäki, Aino & Moisio, Elina (2003) *Kaksi palkkausjärjestelmän muutosprosessia*. (Two pay system change processes) Project report.  
[http://www.palkitseminen.hut.fi/pdf\\_kansio/palkkausjarjmuutosrap03.pdf](http://www.palkitseminen.hut.fi/pdf_kansio/palkkausjarjmuutosrap03.pdf) (26.3.06)

Heery, Edmund (1996) Risk, Representation and the New Pay, *Personnel Review*, 25:6, 54-66

Heneman, Herbert G. III & Judge, Timothy A. (2000) *Compensation attitudes*. In Rynes, Sara L & Gerhart, Barry (eds.) *Compensation in Organizations*, Jossey-Bass, San Francisco, 61-103

Heneman, Herbert G. III & Schwab, Donald P. (1985) Pay satisfaction: Its multidimensional nature and measurement, *International Journal of Psychology* 20, 129-142

Heneman, Robert L, Greenberg, David B. & Fox, Julie A. (2002) Pay increase satisfaction: A reconceptualization of pay raise satisfaction based on changes in work and pay practices, *Human Resource Management Review*, 12:1, 63-74

Heneman, Robert L., Greenberg, David B. & Strasser, Stephen (1988) The Relationship Between Pay-for-performance Perceptions and Pay Satisfaction, *Personnel Psychology*, 41, 745-759

Heneman, Robert L. & Gresham, Maria T.(2002) *Performance-Based Pay Plans* In Heneman, Robert L. (ed.) *Strategic Reward Management: Design, Implementation, and Evaluation*, Information Age Publishing, USA, 75-112

Heneman, Robert L. & von Hippel, Courtney (2002) *The Assessment on Job Performance: Focusing Attention on Context, Process, and Group Issues*, In Heneman, Robert L. (ed.) *Strategic Reward Management: Design, Implementation, and Evaluation*, Information Age Publishing, USA, 347-378

Hoyle, Rick H. & Kenny, David A. (1999) *Sample Size, Reliability, and Tests of Statistical Mediation*, In Hoyle, Rick H. (ed.) *Statistical Strategies for Small Sample Research*, Sage Publications: London

Hu, Li-tze & Bentler, Peter M. (1999) Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives, *Structural Equation modeling*, 6:1, 1-55

Hulkko, Kiisa; Hakonen, Anu; Hakonen, Niilo & Palva, Anna (2002) *Toimiva tulospalkkaus: Opas kehittämiseen*, (Results-Oriented Pay: Development Guide) WSOY, Juva

Judge, Timothy A. (1993) Validity of the Dimensions of the Pay Satisfaction Questionnaire: Evidence of Differential Prediction, *Personnel Psychology*, 46, 331-355

Kenny, D.A.; Kashy, D.A. & Bolger, N. (1998) *Data analysis in social psychology*. In Gilbert, D.T.; Fiske, S.T. & Lindzey G. (eds..) *The handbook of social psychology*. Vol. 1, 233-268. Oxford University Press, Oxford

Kerr, Steven (1995) On the folly of rewarding A, while hoping for B, *The Academy of Management Executive*, 9:1, 7-15

Kohn, Alfie (1993) Why Incentive Plans Cannot Work, *Harvard Business Review*, September-October, 54-63

Korsgaard, M. Audrey; Schweiger, David M. & Sapienza, Harry J. (1995) Building commitment, attachment, and trust in strategic decisions, *Academy of Management Journal*, 38:1, 60-85

Lahti, Carita; Tarumo, Saara & Vartiainen, Matti (2004) *Palkkausjärjestelmien kehittäminen*. (Developing pay systems) Edita. Helsinki

Lawler, E. E. III (1990) *Strategic pay*. Jossey-Bass. San Francisco.

LeBlanc & Mulvey (1998) How American workers see rewards of work. *Compensation and Benefits Review*, 30:1, 24-29

- Lefkowitz, Joel (2000) The role of interpersonal affective regard in supervisory performance ratings: A literature review and proposed causal model. *Journal of Occupational and Organizational Psychology*, 73, 67-85
- Longenecker, Clinton O; Sims, Henry P & Gioia, Dennis A. (1987) Behind the Mask: The Politics of Employee Appraisal, *The Academy of Management Executive*, 1:3, 183-193
- MacCallum, Robert C. & Austin, James T. (2000) Applications of Structural Equation Modeling in Psychological Research, *Annual Review of Psychology*, 51, 201-226
- MacKinnon, David P.; Lockwood, Chondra M.; Hoffman, Jeanne M.; West, Stephen G. & Sheets, Virgil (2002) A Comparison of Methods to Test Mediation and Other Intervening Variable Effects, *Psychological Methods*, 7:1, 83-104
- Maiti, Sadhan Samar & Mukherjee, Bishwa Nath (1990) A Note on Distributional Properties of the Jöreskog-Sörbom Fit Indices, *Psychometrika*, 55:4, 721-726
- Masterson, S. S., Lewis, K., Goldman, B.M. & Taylor, M. S. (2000) Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal*, 43, 738-748
- Miceli, Marcia P. & Lane, Matthew C. (1991) Antecedents of pay satisfaction: A review and extension, *Research in Personnel and Human Resources and Management*, 9, 235-309
- Miedema-Van den Heuvel, H. (1994) *De achterkant van het salaris*. (The backside of salary.) Assen: Van Gorcum.
- Mulvey, Paul W., Le Blanc, Peter V., Heneman, Robert L. & McInerney Michael (2002) *The Knowledge of Pay Study: E-mails from the Frontline*, Worldatwork, Scottsdale
- Salimäki, Aino (2004) Esimiehet palkkausjärjestelmän soveltajina. (Supervisors' role in implementing pay systems) Master's thesis in Psychology. Helsinki University .  
(<http://ethesis.helsinki.fi/julkaisut/kay/psyko/pg/salimaki/>)
- Schuster, Jay R. & Zingheim, Patricia K. (1992) *The new pay: Linking employee and organizational performance*, Jossey-Bass Publishers, San Francisco

Shrout, Patrick & Bolger, Niall (2002) Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations, *Psychological Methods*, 7:4, 422-445

Thierry, Henk (1998) *Compensating Work*, In Dreth, H., Thierry, H. & Wolff, C. J. (eds.) *Handbook of Work and Organizational Psychology*, Vol.4: Organizational Psychology, Psychology Press Ltd, Hove (UK)

Thierry, Henk (2001) *The Reflection Theory on Compensation*, In Erez, Miriam; Kleinbeck, Uwe & Thierry, Henk (eds.) *Work motivation in the context of a globalizing economy*, Mahwah, N.J: Lawrence Erlbaum

Vehkalahti, Kimmo (2000) *Reliability of measurement scales: Tarkkonen's general method supersedes Cronbach's alpha*, Licentiate thesis, Suomen tilastoseura, Helsinki

Williams, Jane R. & Levy, Paul E. (1992) The Effects of Perceived System Knowledge on the Agreement Between Self-Ratings and Supervisor Ratings, *Personnel Psychology*, 45:4, 835-848

Williams, Jane R. & Levy, Paul E. (2000) Investigating Some Neglected Criteria: The Influence of Organizational Level and Perceived System Knowledge on Appraisal Reactions, *Journal of Business and Psychology*, 14:3, 501-513

Yli-Luoma, Pertti V. J. (1996) *Lisrel*.(in Finnish) Imdl, Helsinki

TABLE 1

The correlation matrix used in structural equations.

Variables	1	2	3	4	5	6	7	8	9	10
1 Mutual trust	1									
2 Goal setting and monitoring	.63**	1								
3 Feedback	.62**	.61**	1							
4 Rater procedural justice	.74**	.38**	.58**	1						
5 Knowledge of pay	.19*	.31**	.14	.25**	1					
6 Message conveyed by the pay system	.32**	.25**	.25**	.24*	.36**	1				
7 Satisfaction with pay position (adjusted)	.28**	.33**	.30**	.35**	.43**	.46**	1			
8 Satisfaction with pay policy	.19*	.16	.09	.28**	.40**	.35**	.52**	1		
9 Satisfaction with the pay system implementation (adjusted)	.24*	.33**	.32**	.30**	.44**	.39**	.62**	.52**	1	
10 Perceived effectiveness of the pay system	.07	-.01	.03	.11	.35**	.31**	.20*	.43**	.22*	1

Notes. The significant correlations between pay level and pay satisfaction has been accounted for (adjusted) (N=87-109, \*p< .05, \*\*p< .01).

TABLE 2

Comparison of the models.

Model	$\chi^2$	df	p-value	$\chi^2/df$	RMSEA	SRMR	GFI	CFI
Hypothetical model	64.38	30	.00	2.15	.10 (.07-.14)	.084	.89	.94
Final model	39.13	29	.10	1.35	.06 (.0-.10)	.048	.87	.98
Model with 2 var. in exp.	36.39	29	.27	1.25	.04 (.0-.09)	.049	.94	.99

Notes. The hypothetical model was the starting point of the statistical analyses. The final model has incorporated the modifications. "Model with 2 var exp" is a similar model as the final model but two transformed variables were used in analysis. RMSEA= root mean square error of approximation; SRMR= standardized root-mean-square residual; CFI = comparative fit index

TABLE 3

Closer examination of the mediation hypotheses.

Hypotheses	$\Delta\chi^2$	$\alpha$ (t-value)	$\beta$ (t-value)	$\gamma$ (t-value)	result
1 Managerial actions increase pay satisfaction through the message conveyed by the pay system	1.20 (n.s.)	2.28*	3.01**	.83 (n.s.)	full mediation
2 Managerial actions increase the effectiveness of the pay system through the message conveyed by the pay system	.13 (n.s.)	2.27*	2.19*	-.46 (n.s.)	full mediation
3 Managerial actions increase pay satisfaction through knowledge of pay	.71 (n.s.)	3.27**	3.59***	.84 (n.s.)	full mediation
4 Managerial actions increase the effectiveness of the pay system through knowledge of pay	2.17 (n.s.)	3.43***	3.07**	-1.51 (n.s.)	full mediation
5 Managerial actions increase pay satisfaction through rater procedural justice	.05 (n.s.)	11.28***	2.00*	-.79 (n.s.)	full mediation
6 Managerial actions increase the effectiveness of the pay through rater procedural justice	.09 (n.s.)	11.23***	.41 (n.s.)	-.57 (n.s.)	no mediation

DIAGRAM 1

Hypothetical construct model.

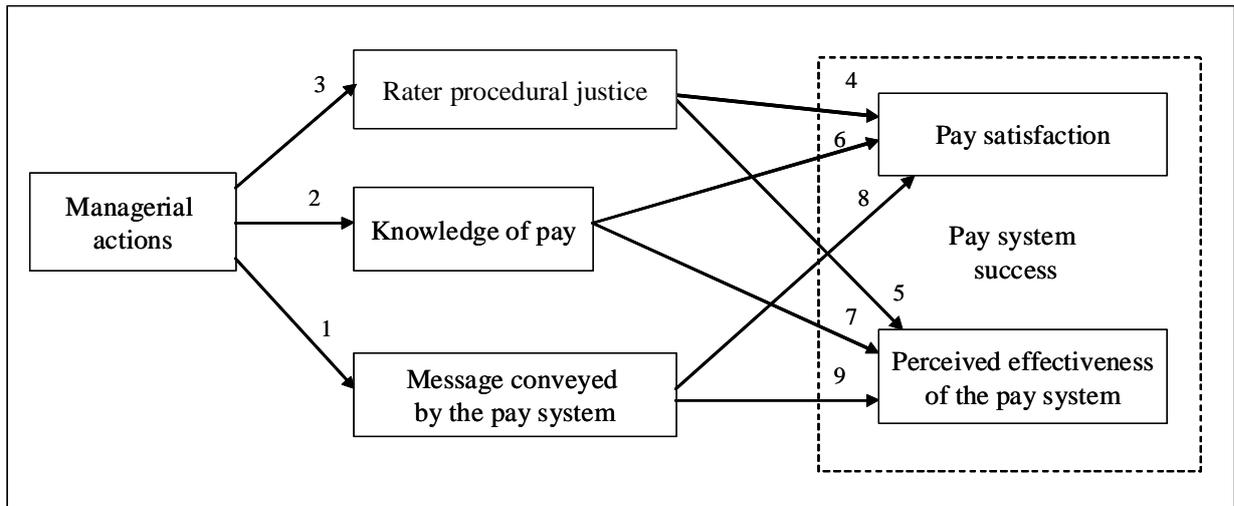


DIAGRAM 2

A simple mediation model where  $\alpha$  is the effect of independent variable on the mediator,  $\beta$  is the effect of the mediator on dependent variable, and  $\gamma$  the remaining effect of the independent variable on the dependent variable.

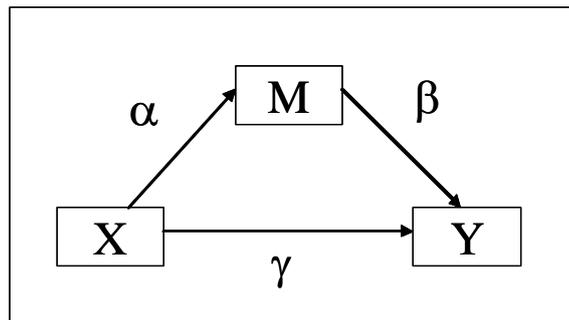
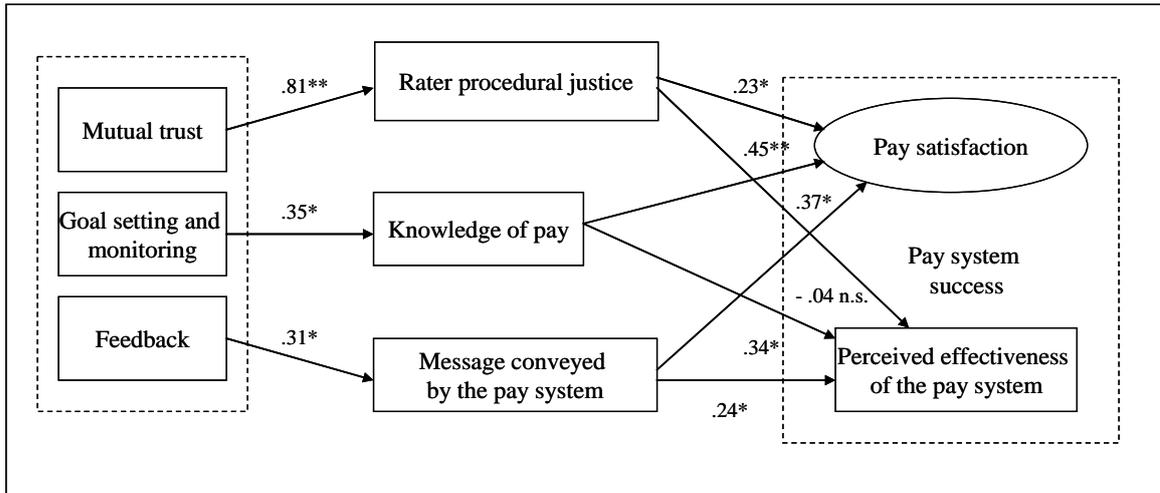


DIAGRAM 3

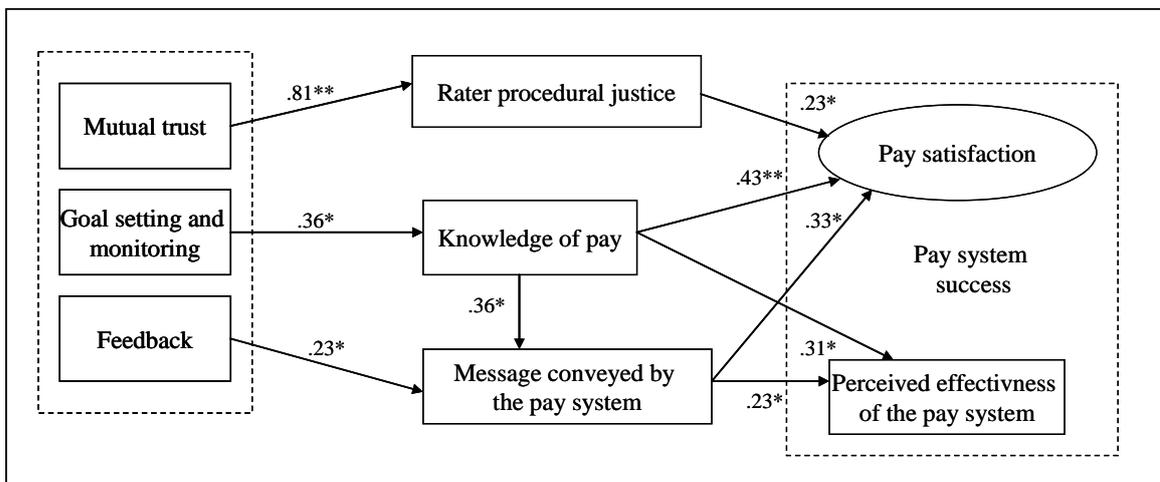
Standardized estimates and their significance in the hypothetical structural equation model.



Notes. N=109 \*p< .05, \*\*p< .01

DIAGRAM 4

The standardized estimates of the final structural equation model and their significance.



Notes. N=109 \*p< .05, \*\*p< .01

## APPENDIX A

The means and deviation of the mean variables, their skewness and curtosis.

Mean variables	n	mean	sd	skewness	curtosis
1 Mutual trust	108	3.87	0.91	-1.23	1.45
2 Goal setting and monitoring	108	3.09	0.85	-0.74	0.36
3 Feedback	109	2.97	0.94	-0.46	-0.48
4 Rater procedural justice	108	3.80	0.98	-0.94	0.18
5 Knowledge of pay	109	2.68	0.73	-0.16	-0.50
6 Message conveyed by the pay system	107	2.73	0.86	-0.35	-0.71
7 Satisfaction with pay policy	104	2.39	0.74	0.06	-0.32
8 Satisfaction with pay position (adjusted)	104	2.46	0.92	0.24	-0.46
9 Satisfaction with pay position	109	2.46	0.89	0.31	-0.43
10 Satisfaction with pay system implementation (adjusted)	102	1.25	0.80	0.36	-0.13
11 Satisfaction with pay system implementation	109	1.25	0.75	0.40	0.22
10 Perceived effectiveness of the pay system	93	0.13	0.46	-0.36	0.92