

HOW FORMAL PERFORMANCE EVALUATION AFFECTS TRUST BETWEEN SUPERIOR AND SUBORDINATE MANAGERS

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Abstract

An important question in the control literature concerns the role of interpersonal trust in the design and functioning of formal control systems for collaborative settings. Although some studies regard trust and formal controls as independent phenomena, recently studies have explored how formal controls affect interpersonal trust. These studies provide mixed results, as they show both positive and negative effects of formal control on trust. This suggests that our understanding of the mechanisms through which, and the conditions under which, formal control affects trust is important, but still limited. In this paper we aim to enhance our understanding of this relationship by investigating the relationship between formal control and interpersonal trust for the collaborative setting of superiors and subordinates. We argue that subordinate's trust in the superior depends on the formality of the performance evaluation procedure, that this relationship is mediated by managerial perceptions of justice and feedback, and that these effects differ across managerial functions. We test our expectations using survey data from a sample of 160 managers in 11 commercial banks. Overall, we find that formal performance evaluation affects trust, and that this relationship is mediated by managerial perceptions of justice and feedback. Furthermore, we find that formality matters more for managers in functions with less contractible outputs. The paper contributes to the literature by providing empirical evidence on the antecedents of trust in a performance evaluation setting. Furthermore, it provides additional evidence of positive effects of controls on trust, yet shows that these positive effects are contingent on the exact managerial setting.

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1. Introduction

In contemporary business environments, trust is seen as an important antecedent of organizational performance (Malhotra and Murnighan 2002). Trust is important whenever organizational participants are involved in social and organizational contexts that demand some form of collaborative effort (cf. Colleti, Sedatole and Towry 2005). It has been demonstrated to increase cooperation and information exchange between parties (Mayer, David and Schoorman 1995), which appears to be beneficial at both the inter-organizational level and the intra-organizational, interpersonal, level (Zaheer, McEvily and Perrone 1998). Within organizations, trust may function as an informal source of organizational control, as it stimulates cooperative behaviors between organizational members. For the relationship between supervisors and subordinates in particular, trust has been argued to mitigate agency problems (e.g., Jones 1995), as it stimulates information exchange and to reduce subordinates' perceived need to engage in short term opportunistic behaviors (e.g., Fisher, Maines, Pfeffer, Sprinkle 2005). Although high levels of trust are desirable for organizations, and perhaps crucial for effective supervisor-subordinate relationships, they are generally not deemed sufficient to govern the social and economic exchange relationships within organizations completely (Malhotra and Murnighan 2002). Indeed, organizations typically require additional and formal types of control to elicit the proper behavior of their participants. For supervisor-subordinate relationships, this implies that employment contracts and monitoring systems play an important role as well (Das and Teng 1998). Although this leads some to suggest that optimal control involves the application of formal controls while maintaining trust (Dasgupta 1988), the combination of formal controls and trust is more complex than just being of a complementary nature. Indeed, it has been suggested that using formal controls may in fact reduce trust, rather than complement it. Empirical research provides some support for this claim (Malhotra and Murnighan 2002). An explanation is that in the presence of

formal controls, such as when collaborative efforts are governed by contracts, trustworthy behavior is attributed to the contract rather than to the inherent trustworthiness of the colleague (Colleti *et al.* 2005). For supervisor-subordinate relationships, this implies that the emphasis a superior puts on the formal performance measurement system when evaluating subordinate performance would negatively affect trust. Evidence on the potential effects of formal control systems in supervisor-subordinate settings on trust is not conclusive, however, for a number of reasons. First, research has thus far only addressed the effects of contracting on trust in general collaborative settings (Colleti *et al.* 2005), rather than exploring the specifics of superior-subordinate situation. Second, recently Colleti *et al.* (2005) challenged the idea of formal control systems crowding out trust in collaborative settings. They argue that formal controls enhance initial cooperation between team members and provide performance feedback, both of which are necessary conditions for the subsequent emergence of trust. This suggests a positive relationship between formal controls and trust. Third, studies have not explored the paths through which formal controls may affect trust, which provides little understanding of the mechanisms through which formal controls would affect trust. In this paper we further explore the relationship between formal controls and trust for the supervisor-subordinate setting. As noted, this setting has received only sparse attention so far, despite being amongst the most important forms of intra-organizational collaboration. In particular, we explore the effects of supervisors' use of the performance evaluation system on subordinates' trust, as well as the mechanisms through which trust is affected. We analyze two such intermediate mechanisms, building on the literature on procedural justice and performance feedback respectively. The remainder of this paper is structured as followed. Section two provides an overview of the extant literature. Section three develops hypotheses about the relationship between supervisory behavior and trust. Section four presents the design of the empirical study. Section five presents the results from the analyses. Section six

concludes this paper with an overview of findings, the study's limitations and some directions for future research.

2. Literature overview

We define trust in line with Colletti *et al.* (2005) as the perception one person has about the trustworthiness of another person. Trustworthiness is the innate personal characteristic that reflects one's preference for upholding social norms of behavior, such as honesty, fairness, commitment and reciprocity. Rousseau, Sitkin, Burt and Camerer (1998) point out that the expectation of upholding norms implies that the trusting party has positive expectations about the trusted party's behavior, and that the trusting party accepts vulnerability to the trusted party's actions. Whether these expectations are best understood as extrapolations of the past experiences of parties, or instead as calculative predictions of rational future behavior has been a much debated issue in the trust literature (e.g., Kramer 1999, p. 574). It seems now widely accepted, however, that trust may involve both relational and calculative considerations, and, consequently, that our understanding of trust, and its antecedents and consequences is best informed by both economics and psychology (Coletti *et al.*, 2005). The economic conception of trust emphasizes that the choice to trust another is based on rational expectations of the other's behavior. As Hardin (1992) argues, this requires that the trusting party has knowledge on the trusted party's incentives, and can establish with a reasonable degree of certainty that these incentives will make the trusted party's take actions that are beneficial to the trusting party. The psychological conception of trust acknowledges the existence of such calculative considerations, but suggests that their complexity exceeds the cognitive capacities of the trusting party, and that trust decisions involve affective and emotional considerations as well (cf. March and Olson 1989; Fine and Holyfield 1996). For example, people's needs to engage in social interactions and to be part of a social structure are

shown to be important antecedents of trust as well (cf. Tyler and Lind 1992; Kramer and Tyler 1996). In sum, we follow Hardin's (1992) proposal that trust can be best understood as a multifaceted concept, in which calculative and relational considerations may become relatively more or less salient depending on the context. Acknowledging these diverse types of trust, Rousseau *et al.* (1998) suggests that calculative trust and relational trust represent different stages of trust over time, with relational trust following calculative trust.

Although economics and psychology are informative about the nature of trust, and provide ample evidence on the consequences of trust, knowledge about the causes of trust is still fragmented and incomplete. In an overview of the trust literature, Kramer (1999) outlines several 'bases of trust', which are in fact conditions under which interpersonal trust is likely to occur. Such conditions include the personality of the trusting individual ('dispositional trust'), the past interactions between the trusting and trusted individual ('history-based trust'), and the trusted party's organizational role ('role-based trust'). Although semantically helpful, these classifications do still not address the specific mechanisms that evoke trust in individuals. As such, they provide little specific guidance for the analysis of the effect of organizational arrangements on trust.

This is particularly troublesome when the analysis of organizational control systems is concerned, since control systems have been shown to both decrease and enhance trust (e.g., Malhotra and Murnighan, 2002; Coletti *et al.* 2005). On the one hand, these systems are considered a means of surveillance with alleged detrimental effects on employee's trust (Kramer 1999). In the presence of control systems, cooperation is attributed to the presence of the control system, rather than the inherent trustworthiness of the cooperating party (e.g., Malhotra and Murnighan, 2002). Even the mere presence of a control system may be perceived as a signal of distrust (Tenbrunsel and Messick 1999, p. 685). On the other hand, control systems may encourage cooperative behavior which is an important condition for the

development of trust, as it allows building a track record of successful cooperation (cf. Coletti *et al.* 2005). In particular, Coletti *et al.* (2005) demonstrate that the negative effects of formal control systems are outweighed by the positive effects of performance feedback that such systems typically produce, which is crucial for the emergence of trust, and especially so in the early stages of cooperation. Coletti *et al.* (2005, p. 478) claim that earlier studies, showing negative effects of controls on trust, have disregarded the feedback effect in their methods and models. The results of this latter study therefore suggest that trust is caused by the specific way in which the control system is used, rather than the by presence of a system as such.

This has important implications for our understanding of the effects of formal control systems on the relationship between superiors and subordinates, which is a central issue to the wider management accounting and control literature (Hartmann, 2000; Gibbs, Merchant, Van der Stede, Vargus, 2004, Moers, 2005). Indeed, it suggests that a subordinate's trust in a superior may depend on the way in which this superior uses the control system to govern their relationship, which satisfies the conditions of being of a collaborative and hierarchical nature, and which appears to be sensitive to interpersonal trust (cf. Fisher *et al.* 2005). As yet, however, there is little systematic evidence on what elements of the control system are a source of interpersonal trust between superior and subordinate, and the question remains unanswered if and how the (opposite) effects of formal control on trust (Malhotra and Murnighan 2002; Coletti *et al.* 2005) transfer to the collaborative setting of superiors and subordinates. Only a small number of accounting studies have addressed this issue tangentially, analyzing the effects of the use of budget-based performance metrics on subordinates' trust in superiors. Findings from these studies are not fully consistent, however, as we will discuss now (Hopwood 1972; Ross 1994; Lau and Buckland 2001; Lau and Shohilin 2005; Lau and Tan 2006).

Lau and Buckland (2001) investigate the relationship between the emphasis superiors place on budget-based performance metrics when evaluating subordinates, and subordinates' trust in the superior. They report a positive effect. Their argument is that using budget-based performance criteria would be perceived as a precise and verifiable way of evaluating performance, whereas non-accounting performance metrics would be perceived as subjective and inaccurate (cf. Hopwood 1972; Ross 1994). Instead, Lau and Shohilin (2005) find that trust is positively related to the use of non-financial performance metrics. Their argument is that the use of budget-based performance metrics can result in evaluations that are too 'narrow and rigid', whereas the use of non-financial performance metrics would allow a broader and more correct assessment of subordinate performance (Lau and Shohilin 2005, p. 396). Regarding the wider budgetary process, Lau and Buckland (2001) further find that subordinates' participation in setting budgetary targets enhanced trust, as higher participation means an increased frequency and intensity of superior-subordinate interactions, and a higher transparency of their working relationship (cf. Lau and Tan 2006).

Although these results generally suggest that performance evaluation systems are potentially important drivers of interpersonal trust, they particularly suggest that there exist a number of potential causal paths between the use of these systems and trust, and that our lack of systematic knowledge about them is still limited. One source of diversity lies in the multi-faceted nature of interpersonal trust in which the calculative and relational aspect of trust may show different responses to performance evaluation system attributes. An important other source of diversity, however, should be found in the lack of conceptual and empirical clarity about the attributes of the performance evaluation system that matter. For example, since both the use of financial and non-financial performance measures appeared to be associated with increased trust (see Lau and Buckland 2001; Lau and Shohilin 2005), these studies suggest in combination that some underlying performance evaluation system characteristic is more

important than the (non-)financial nature of performance metrics that are applied. Below we will argue that the formality of performance evaluation may be such a more fundamental characteristic. We will argue that at least two paths exist through which the formality of performance evaluation may affect subordinates' trust in the superior, which is via the provision of better performance feedback and via increased procedural justice, and that the path through which formality affects trust may be different for different classes of managers. We will develop hypotheses for each of these paths now.

3. Hypotheses development

With the formality of performance evaluation system use we address the formal or informal way in which superiors set targets, measure subordinate performance and distribute rewards (Hartmann 2000; Zimmerman 2003; Fisher *et al.* 2005). Thus, we conceive the performance measurement system in broad sense, in line with recent conceptualizations of the performance management process (cf. Otley 1999, Ittner and Larcker 2001). Indeed, the distinctive characteristics of formal performance management systems, such as the budgeting system researched by Lau and colleagues, do not lie merely in their use of certain metrics for performance measurement, but rather in the systematic combination of performance measurement with target setting and reward distribution (cf. Hartmann 2005; Marginson and Ogden 2005). We expect that the extent to which these characteristics affect trust depends on the superior's use of these three elements of the system (Hartmann 2000). Our hypotheses will address the overall formality of the system, rather than the formality of individual subsystems as we assume that the formality of the overall system reflects in the formality of the subsystems. As we will explain further below, our empirical analysis allows to disentangle any potential differences between those subsystems.

Formality, trust and performance feedback

The opposite results in Lau and Buckland (2001) and Lau and Shohilin (2005) suggest that the relevance of the performance management system for trust resides in the way in which superiors set targets, assess performance and distribute rewards rather than the intrinsic nature of the targets, performance metrics and rewards themselves. This is consistent with studies on the causes of trust that emphasize the importance of behavioral qualities such as consistency, integrity, and accuracy (e.g., Clark and Payne 1997; Whitener, Brodt, Korsgaard and Werner 1998). Subordinates who observe consistent, truthful and accurate supervisory behaviors will perceive their superiors to be more trustworthy, for at least two reasons. First, consistency, integrity, and accuracy are important conditions for the feedback function of performance measurement systems. Indeed, the literature suggests that effective feedback on individual performance requires that targets are set clearly (Locke and Latham, 1990), that performance is measured accurately (Steelman, Levy and Snell, 2004), and that reward distribution is transparent and traceable (Moers, 2005). Formal systems have an advantage over informal evaluations in that they clearly specify the dimensions of performance that are being evaluated, and the way in which the rewards are linked to those performance dimensions (Marginson and Ogden, 2005; Moers 2005). Thus, we predict that formality is positively related to trust via the perceived higher quality of the feedback by the superior. We therefore propose to test the following hypothesis.

H1: There is a positive effect of the formality of the performance management process on trust through the perceived quality of performance feedback.

Formality, trust and procedural justice

A second way through which formality may have a positive impact on trust is through the perceptions of justice that subordinates attach to the performance evaluations experienced (Folger and Greenberg 1985; Colquitt 2001). Indeed, the consistency, integrity, and accuracy aspects of supervisory behavior appear to largely overlap with the justice dimensions of Leventhal (1976) and Leventhal, Karuza and Fry (1980) that are perceived essential for fair performance evaluations. Thus, consistent with the arguments and findings in Lau and Tan (2006) we expect that formality affects trust also through enhanced procedural justice. We therefore propose to test the following hypothesis.

H2: There is a positive effect of the formality of the performance management process on trust through perceived procedural justice.

Performance feedback and procedural justice

Moreover, we expect a positive relationship between the perceived quality of performance feedback and perceived procedural justice, since the literature suggests that feedback quality is an important antecedent of procedural justice judgments, as it signals how performance judgments were derived (cf. Cohen and Spector, 2003).

H3: There is a positive relationship between the perceived quality of performance feedback and perceived procedural justice.

Functional differences

Although our previous arguments suggest general causal patterns between supervisory behavior and subordinate trust, we propose that these paths may vary across managerial settings. Indeed, variations in managerial functions could provide an explanation for

conflicting results in earlier studies (Tenbrunsel and Messick 1999; Malhotra and Murnighan 2002; Coletti *et al.* 2005), as it is likely that the conditions necessary for the emergence of trust will differ between managerial functions. Attribution theory suggests that an important condition for the emergence of trust is that subordinates should attribute ‘trustworthy’ supervisory behavior they encounter to the superior’s inherent trustworthiness, rather than to causal factors outside the superior, such as the organizational control system (cf. Coletti *et al.* 2005). Attribution theory attempts to explain such attributions, but does not fully explicate how subordinates make such attributions (Birnberg, Frieze and Shields 1977). Evidence on the development of trust in the presence of formal governance systems in general, however, suggests that subordinates may be inclined to attribute ‘trustworthy’ behaviors of the collaborative partners to the formal governance system, and that trust in the collaborative partner may even decline as a consequence of the presence of such formal systems (e.g., Tenbrunsel and Messick 1999; Malhotra and Murnighan 2002). In contrast, Coletti *et al.* (2005) demonstrated that such negative attributions can be countered by the positive effects that the use of formal control systems can have on initial cooperation and feedback on collaborative performance. It has not yet been established if and how these effects transfer to the collaborative setting of superiors and subordinates. Attribution theory, however, suggests that subordinates may attribute the outcomes of formal evaluations to their superior’s trustworthy intentions, rather than the available system. As regards the positive effects of formal performance evaluation, expressed in the former hypotheses, this means that they will be especially prevalent in situations in which formality provides the subordinate with additional information about his or her absolute and relative performance (cf. Coletti *et al.*, 2005). In situation where subordinates already have good understanding into their own performance level, and its consequences for individual wealth, the benefits of formal performance evaluation in terms of providing feedback information will be less prevalent.

Here, attribution theory suggests that the outcomes of formal ways of performance evaluation will be considered a consequence of the formal system, rather than the outcome of supervisory discretion. We expect that the extent to which formal performance evaluation adds to subordinates' understanding of performance levels achieved depends on the extent to which managers functions have outputs which are contractible, i.e. measurable and verifiable (cf. Grossman and Hart, 1986). Contractibility denotes the extent to which functional output is easily and unambiguously cast in formal contracts and controls. Examples of high contractibility outputs include typical financial and quantitative indicators of turnover and profit. Examples of low contractibility outputs include those in which measurability is hindered by existing synergies, as are found in functions that provide internal service and support. We expect that managers in functions with outputs that are directly contractible (i.e. measurable, verifiable) will be more inclined to attribute formal performance evaluations to the system, rather than the supervisor. Managers with less contractible (i.e. measurable, verifiable) outputs will be more inclined to attribute formalism to supervisory inherent inclination to provide accurate performance feedback, and just evaluations. Thus we expect the following relationship to hold.

H4: The positive relationships predicted in hypothesis 1 through 3 will be more prevalent for managers in functions with less contractible outputs.

The full causal model, which depicts the individual paths, is summarized in Figure 1.

---Figure 1 about here---

4. Method

To test these hypotheses, we conducted a survey study among 160 managers in Slovenian commercial banks. The choice for a survey study was based on several considerations. First, there are no publicly available archival data on the constructs that matter for our study. Second, studies into justice and trust are usually perceived to concern private information, which requires that the data collection is anonymous towards the organization where the respondent is employed. This is easily achieved by the survey method. Third, the survey method is appropriate in studies, such as the present study, which seeks cross sectional variation and association. Finally, this method is also used in the majority of studies on which the present study builds, which adds to the continuity of the literature, and the comparability of findings. The choice for the banking sector was based on the homogeneity of the sector, the comparability of firms and, most importantly, the variation in contractibility of outputs between managers.

To select survey respondents, we approached all eighteen Slovenian banks at the board level through university contacts. Boards of directors of eleven banks agreed to participate in the research. With the help of the human resource board members, respondents in each bank were selected based on the following three criteria. First, managers were selected that had at least one subordinate to satisfy the managerial condition. Second, these managers would be in their current position for at least one year. Third, we included managers that have an employment contract in which at least part of their yearly compensation would be contingent on performance. Following these criteria a total of 260 respondents were selected for participation by the banks, which amounted to the total population that met our criteria.

The survey instrument was web-based. The researchers obtained e-mail addresses of all respondents, and sent an individualized e-mail message to each respondent with the request to participate, a reference to the endorsement from the bank, a unique and anonymous

code, and a link to a webpage of one of the sponsoring universities. Respondents could login to the webpage using the code. In the design of the survey instrument, available guidelines were followed (Dillman, 2000). Several measures were taken to increase the overall quality of the instrument, as well as the response rate. First, the website was designed by an experienced designer, and was made attractive by using a limited number of colors, and an overall attractive layout. Second, when possible, we used items to measure our constructs from the extant literature. Third, the full questionnaire was drafted in English, after which it was translated into Slovenian using a translate-retranslate procedure. Four, the Slovenian questionnaire was subsequently tested with five bank managers from three different banks to assess the length, the understandability, the attractiveness, and to search for any further difficulties respondents might have. In this phase small adaptations were made to the wording of some questionnaire items and the structure of the web instruments. This version of the questionnaire was also discussed with the HR-managers. Finally, after sending the e-mails, a follow-up procedure was installed in which respondents were reminded two times by their employing organization based on the codes provided by the researchers. Tables 1 and 2 contain descriptive information on the sample of respondents.

---Tables 1 and 2 about here---

The managers in our sample are in charge of distinct areas of responsibility, have at least one functional subordinate (cf. Hartmann, 2005) and a separate budget, and have experienced at least one performance evaluation cycle. The number of observations per organization ranged from 4 to 35, reflecting the organization's size and responsibility center structure (see Table 2).

Variable Measurement

We specify the domain of performance management process as three distinct subsystems, which are target setting, performance measurement and rewarding (cf. Otley 1999, Ittner and Larcker 2001). We measure formality of each subsystem in the process separately to enable assessment of the relative importance of each of these subsystems as antecedents of subsequent perceptions, because they may not be necessarily perfectly linked in practice. In each of these subsystems, formality is conceived as a formative variable (cf. Rossiter, 2002; Diamantopoulos and Winklhofer 2001) which reflects that formality is a result of different (observable) attributes of performance evaluation, rather than being their cause.

Formality of target setting (FORM_TS) is measured using the four dimensions of performance in accordance with the balanced scorecard logic used in Ittner, Larcker and Meyer (2003). Information is provided in the Appendix. We assessed the relevance of these four dimensions for our sample of bank managers in the preliminary interviews, as well as the examples of the performance metrics in each category. We accounted for potential variation of formality across dimensions and for the relative importance of each dimension by adopting the following measurement procedure. First, we measure on five-point Likert scales (i) the extent to which performance targets are explicitly documented in a written form and (ii) the extent to which targets are quantified, for each dimension separately. We also ask respondents to allocate 100 points to the four dimensions to reflect the importance of this performance dimension for the respondent's area of responsibility. These weights were used to obtain a final score for *formality of target setting*.

Formality of performance measurement (FORM_PM) is measured in accordance with the procedures outlined for *formality of target setting*. We measure on five-point Likert scales (i) the extent to which the superior relies on objective information from the information system and (ii) the extent to which respondent's evaluation is expressed in quantitative terms.

Scores are obtained for the four performance dimensions, which are weighted as described before.

Formality of rewarding (FORM_REW) is measured with items that address the objectivity of reward determination, using five-point Likert scales. The questions address whether rewards are based on the superior's judgment, as opposed to objective information from the information system, and whether rewards are based on a quantitative as opposed to qualitative link with performance. These questions were answered for both the fixed and the variable part of managerial rewards.

Feedback quality of the supervisor (FEED_QUAL) measurement is based on list of indicators developed by Steelman *et al.* (2004), for which we used five-point Likert scales. *Procedural justice* (PROC_JUST) is measured with four items that address the extent to which respondents believe that the subsystems of target setting, performance measurement and rewarding, as well as the system in total, leads to a fair determination of pay. This particular focus of the questions reflects that this study investigates antecedents of procedural justice, in contrast with the vast majority of studies that address its effects (cf. Cropanzano, Byrne, Bobocel and Rupp 2001). This also avoided using some normative model of justice, that contain elements of the performance evaluation systems that are assumed to be related to justice perceptions (cf. Leventhal *et al.* 1980).

Supervisory trust (SUP_TRUST) is measured by the instrument, developed by Read (1962). It addresses trust by asking subordinates about the extent to which they feel that the superior will take actions from which the subordinate may benefit. These questions were selected as they are neutral vis-à-vis the relational or calculative source of trust.

The level of contractibility of managerial outputs was proxied by the functional location of the manager within the bank. We distinguished between two groups of managers. The first group consists of managers with tasks that involve transactions that have direct

financial consequences for the bank, which are measurable and verifiable. These managers are in charge of front-office departments that grant loans, hire deposits and other forms of debt, manage assets, do transactions on foreign markets and similar. The second group of managers provide support to the first group in terms of expertise, analysis and administration. These activities include the analyses of projects, fulfilling reporting requirements, and legal and internal administration. These back-office functions, while crucial for bank performance, have less measurable and verifiable outputs, and their effect on bank performance is less traceable. Thus, for performance evaluation, this distinction seems to capture the essential difference between managerial performance of the first group that is immediately and directly reflected on the bank's market performance, and the performance effects of the second group's activities which is less obvious, and only indirectly and imperfectly linked to market transactions.

When more items per latent construct were available, we used exploratory factor analysis using SPSS with Varimax rotation to identify the best indicators for use in the measurement model. After eliminating six items on the basis of their low loadings on the respective factors (Hair, Anderson, Tatham and Black 1995), we retained eleven indicators for the three reflective constructs (see the Appendix for an overview of latent constructs and their indicators).

5. Results

We test our hypotheses simultaneously by using a partial least squares (PLS) method for structural equation model estimation SEM (Wold, 1982, 1985; Lohmöller, 1989.). Contrary to the covariance-base method of SEM estimation that attempts to minimize the difference between sample covariances and those predicted by a theoretical model on the underlying assumptions of normal multivariate distribution (Chin, 1998), PLS estimates the structural

model using an iterative OLS regression-like procedure, which aims to explain variance of the dependent variables. PLS minimizes the residual variance of all dependent variables (both, latent and observed). Because of its iterative estimation algorithm that proceeds block by block, PLS requires less stringent assumptions about the distributional characteristics of the raw data and sample size. Furthermore, it allows for the use of both formative and reflective variables, which is not generally achievable with covariance-based structural equation modeling techniques (Chin, 1998, Vandenberg 1996). We use SmartPLS software version 2.00.

Our measurement model is composed of both formative (FORM_TS, FORM_PM, FORM_REW) and reflective latent variables (PROC_JUST, FEED_QUAL, SUP_TRUST), thus forming a so-called MIMIC model (Tenenhaus *et al.* 2005). Before the assessment of the structural model, we assessed the quality of the measurement model, thus addressing individual item reliability, construct reliability, and convergent and discriminant validity for our reflective constructs (cf. Bagozzi 1994). *Individual item reliability* is considered adequate when an item has a factor loading that is greater than 0.7072 on its respective construct which implies that more than 50 per cent of the variance in the observed variable is shared with the construct (cf. Chin 1998). The measure of *internal consistency* or *construct reliability* is Dillon-Goldstein ρ (Tenenhaus, Vinzi, Chatelin, Lauro 2005). This measure is preferable to Cronbach's alpha, as the latter assumes that all the loadings are equal to one. A level of 0.70 is suggested as a modest level of reliability (Vandenberg, 1996). Convergent and discriminant validity of the constructs is assessed by the average variance extracted (AVE), which represents the average variance shared between a construct and its indicators (Fornell and Larcker 1981). For *convergent validity*, AVE should be greater than 0.50. This ensures that measurement error does not dominate the variance captured by the construct (Vandenberg, 1996). To assess *discriminant validity* taking into account model parameters

and measurement errors, AVE should be greater than the variance shared between any two constructs.

The second step in the structural equation modelling is the estimation of the specified structural equations. The structure coefficients indicate the strength and direction of the relationships among the latent variables. We assessed statistical significance of parameter estimates using a bootstrap procedure with 1,000 replacements. In addition, the *predictive validity* of the parameter estimates can be assessed via a cross-validated redundancy index or so called Stone-Geisser Q^2 test (Geisser 1974; Stone 1974). A result indicating that Q^2 for all latent variables is greater than 0 suggests that the model has predictive relevance. As PLS models lack an index that can provide the goodness of fit statistics like in variance-covariance based SEM-ML, Tenenhaus *et al.* (2005) and Vandenberg (1996) argue that next to the reliability and validity of constructs, the significance of variance explained and positive Q^2 's for all constructs provide sufficient evidence of model fit.

The results of the measurement model are summarized in Tables 3, 4 and 5. As Table 3 reports, regarding items reliability, we established that all factor loadings were greater than 0.707 with the exception of two. This provides evidence of a satisfactory level of individual item reliability. The indicators for SUP_TRUST and FEED_QUAL, for which the loadings of 0.698 and 0.560 were obtained respectively, were maintained in the analysis given the satisfactory construct reliability measured by ρ_c , which exceeded 0.75 in all cases. The interpretation of reliability for latent variables with formative indicators should be based on weights (cf. Chin, 1998a). In our case, FORM_TS, FORM_PM and FORM_REW showed weights above 0.8. Convergent validity appeared acceptable for all reflective constructs, as AVE exceeded 0.5 in all cases. Discriminant validity of constructs is presented in Table 4. It

shows that diagonal AVE values exceed all other scores, suggesting sufficient discriminant validity.

---Tables 3, 4 and 5 about here---

The results of the analysis of the structural model are presented in Table 5 and significant positive paths are depicted as solid lines in Figure 2. All constructs are significantly explained by at least one of the predicted antecedent variables. Path coefficients show that FORM_TS has a positive and relatively strong impact on FORM_PM explaining 47.5% of its variance, and that FORM_PM has a subsequent positive impact on FORM_REW explaining 38.8% of its variance. The results do not indicate the existence of a direct link between FORM_TS and FORM_REW, but only suggests that FORM_TS affects FORM_REW through FORM_PM.

---Table 5 and Figure 2 about here---

For the overall model, we find in accordance with hypothesis 1 that the formality of the performance management cycle is positively related to the quality of feedback, which in turn is positively related to trust (hypothesis 3) and procedural justice. Since only the relationship between the quality of feedback and the formality of rewards is significant, we find that the most important factor in the performance management cycle appears to be the rewarding phase. The other phases appear to affect the quality of feedback only indirectly through the rewarding phase. The formality of each of the three phases is positively and significantly related for two of the three paths explored. The hypothesis 2 is confirmed by the existence of a significant direct effect of formality of rewarding on procedural justice, and also procedural justice and feedback quality are positively related as we expected in the hypothesis 3.

Furthermore, procedural justice and feedback quality both significantly positively affect supervisory trust.

Hypothesis 4 summarized our predictions that the relationships explored would be different for managers with more and less measurable outputs. To analyse this hypothesis, we reanalyze both the measurement model and the structural model for the two subgroups of managers in front-office functions and back-office functions respectively. This distinction was used to proxy for high and low contractibility of managerial outputs (Grossman and Hart, 1986). Table 2 shows how managers in different areas of responsibility were allocated to the subgroup analysis. Results of PLS analyses for these subgroups are presented in Tables 6, 7 and 8 for the front-office subgroup, and in Tables 9, 10 and 11 for the back-office subgroup. Figures 3 and 4 depict significant positive (negative) paths as solid (dotted) for the two subgroups respectively.

---Tables 6, 7 and 8 and Figure 3 about here---

---Tables 9, 10 and 11 and Figure 4 about here---

The results suggest that for the high-contractibility subgroup, formality has no effect on feedback quality, or procedural justice. For the low-contractibility subgroup, formality of rewarding appeared to affect both feedback quality and procedural justice positively, whereas formality of performance measurement appears to have a negative effect on procedural justice. The other paths were largely consistent with the test of the model for the overall sample, whereas the relationship between procedural justice and trust was weaker and insignificant for the high-contractibility subgroup. Table 12 shows that these differences

between the high-contractibility and low-contractibility subgroups are statistically significant for the relationship between formality of rewarding and justice.

---Table 12 about here---

We reran all models including direct paths from formality to trust to assure that our findings were not caused by spurious associations. As can be expected with the use of PLS, we found no changes in the sign or significance of the paths that we discussed before. Thus, we conclude that the relationships established are genuine, and not attributable to unexplained direct impact of formality on trust. We will discuss the importance of our results for the research questions now.

6. Discussion and conclusions

The purpose of this paper was to explore the effects of control system characteristics on subordinates' trust in their superiors. We focused on formality, which we argued to be an important underlying, generic aspect of such systems, and set out to explore the relationship between formality of performance evaluations and interpersonal trust. The extant literature has shown conflicting results when investigating the relationship between formal control and trust for collaborative arrangements in general, and for the relationships between superior and subordinate in particular evidence is scarce. Our findings overall suggest that formality of performance management system use is a relevant characteristic in evoking subordinate trust, which may explain that previous studies have found trust to be enhanced by both financial and non-financial performance criteria that are both reflections of formality (Lau and Buckland, 2001; Lau and Shohilin, 2005). We find, however, that not all phases of the performance management cycle are equally important in this respect, since we find (only)

positive effects for the rewarding phase of the cycle, and even some negative effects of the performance measurement part of the cycle. In any case, our results provide only partial support of the claim that formalization of evaluation is one of the antecedents of procedural justice that is central to the much used Leventhal model (e.g. Leventhal, 1976). In addition, we find that the relationship between formality of performance evaluation and trust is different for managers in different organizational functions. Managers in functions with highly contractible, measurable and verifiable, outputs seem to be less affected by the level of formality that their superiors apply in the performance management cycle. We proxied for contractibility by distinguishing front-office managers, with direct responsibility for market transactions, from back-office managers, with responsibility for internal services mainly. In our study we find no significant direct relationships between formality and the dependent variables for the front-office subgroup. We argue that this is because these managers have less need for fair and transparent performance assessments guaranteed by formal system and performance feedback systems, as their functional output itself provides such feedback immediately. In that case, the formality of performance assessments is not attributed to the superior, but rather to the system. Managers in back-office function, however, seem affected by the formality that superiors apply in the performance management cycle. This means that the effort superiors put in operationalizing output that is not easily measured and traced results in trust attributions. Interestingly, for back-office managers, the formality of reward distribution has a positive effect on trust through both its effect on feedback and justice. Formality of performance measurement, instead, has no effect on feedback and a negative effect on justice. This implies that the link between performance management cycle and procedural justice is more complex than is currently recognized in the justice literature (e.g. Cohen and Spector, 2003). Indeed, when outputs are less measurable, managers seem to perceive formal evaluations, in which a superior puts less emphasis on his or her subjective

judgments, as least just, although they value a traceable reward distribution. Overall this at least suggests that our understanding of the effects of subjectivity of the performance management cycle may be enhanced by analyzing the various steps in this cycle in a separate fashion (e.g., Moers, 2005).

Finding differences between managerial groups is important, since it not only suggests that the antecedents of trust may be different across organizational functions, but as it may also explain some previous contradictory results. Indeed, in both earlier field studies (Lau and Buckland, 2001; Lau and Shohilin, 2005) and experimental studies (Tenbrunsel and Messick 1999; Coletti *et al.*, 2005) research designs have not explicitly taken into account the measurement issues (i.e. contractibility) that we addressed through our subgroup analyses. Further research may establish whether our findings replicate in other field studies, or in experimental settings. Experiments may also confirm whether the implied causality of the relationships that we investigated holds across methods.

This study is one of the few studies that investigate the role of formal control systems in the emergence of trust, and one of the first studies looking at collaborative setting of the superior and the subordinate. Obviously, the study is vulnerable to the typical weaknesses of survey research, regarding validity and reliability, although in the design and execution we have avoided many of the potential pitfalls, as in the development and pre-test of the instrument, and in the approach of respondents we followed best practice.

As we already indicated, we would strongly recommend future studies to look into the relationships between performance evaluation systems and trust in further detail. Clearly, it would be fruitful to replicate our survey study using an experimental design, which is the method used in many studies in both performance evaluation and trust that we build on. Such a design would allow manipulating the level of contractibility across experimental conditions, to confirm the validity of our proxy, and would add a formal test of causality to our cross-

sectional analysis. Regarding potential extensions of our analyses, future studies may analyse performance effects of various other combinations of performance management arrangements, external conditions and trust. Overall, however, we feel that the apparent complexity and relevance of trust in the superior-subordinate setting provides a fruitful avenue for studies in performance evaluation and control.

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Tables

Table 1: Sample descriptives

	<i>Mean (median)</i>	<i>Std. dev</i>	<i>Range</i>	<i>Valid n</i>
Age	43.45 (44.00)	8.18	29-58	153
Years in bank	9.82 (8.58)	8.58	1-35	157
Tenure in function	4.76 (3.25)	4.73	1-30	158

Table 2: Respondents' areas of responsibility

<i>Job</i>	<i>Subgroup</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Trading	front-office	59	36.6	38.1
Back office	back-office	43	26.7	65.8
Investment banking and asset management	front-office	8	5.0	71.0
Treasury	front-office	4	2.5	73.5
Administration	back-office	35	21.7	96.1
International operations	front-office	4	2.5	98.7
Other	back-office	2	1.2	100.0
Missing	n.a.	5	3.7	
Total		160		

Table 3: Estimation of the measurement model parameters (full sample, n=160)

	<i>Weight original sample (sample mean)</i>	<i>Loading original sample (sample mean)</i>	<i>Std. dev.</i>	<i>t- statistic (bootstrap)</i>	<i>Composite reliability (ρ_c)</i>	<i>Average variance extracted (AVE)</i>
FORM_TS	0.843 (0.848)		0.038	22.228	n.a.	n.a.
FORM_PM	0.888 (0.895)		0.044	20.253	n.a.	n.a.
FORM_REW	0.820 (0.825)		0.035	23.181	n.a.	n.a.
FEED_QUAL					0.893	0.677
feed ₁		0.840 (0.834)	0.087	9.665		
feed ₂		0.868 (0.864)	0.076	11.395		
feed ₃		0.775 (0.774)	0.062	12.458		
feed ₄		0.805 (0.802)	0.055	14.681		
PROC_JUST					0.842	0.572
procj ₁		0.787 (0.784)	0.051	15.496		
procj ₂		0.744 (0.739)	0.064	11.675		
procj ₃		0.698 (0.696)	0.062	11.255		
procj ₄		0.792 (0.790)	0.054	14.805		
SUP_TRUST					0.787	0.561
trust ₁		0.560 (0.522)	0.086	6.497		
trust ₂		0.724 (0.716)	0.071	10.161		
trust ₃		0.920 (0.933)	0.059	15.718		

Table 4: Discriminant validity coefficients (full sample, n=160)

	<i>FORM_TS</i>	<i>FORM_PM</i>	<i>FORM_REW</i>	<i>PROC_JUST</i>	<i>FEED_QUAL</i>	<i>SUP_TRUST</i>
FORM_TS	n.a.					
FORM_PM	0.689	n.a.				
FORM_REW	0.497	0.615	n.a.			
PROC_JUST	0.070	0.059	0.228	0.756		
FEED_QUAL	0.149	0.168	0.281	0.429	0.823	
SUP_TRUST	0.195	0.099	0.313	0.417	0.532	0.749

Note: Diagonal elements (bold) are the square root of the variance shared between the constructs and their indicators (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements. N.a. Non-applicable.

Table 5: Structural model results (full sample, n=160)

	<i>Path Coefficient – (original sample)</i>	<i>Path Coefficient - (sample mean)</i>	<i>t-statistics (bootstrap)</i>	<i>Q²</i>	<i>R²</i>
Effect on FORM_PM				0.054	0.475
FORM_TS->FORM_PM	0.689***	0.686***	13.033		
Effect on FORM_REW				0.043	0.388
FORM_TS->FORM_REW	0.140	0.140	1.330		
FORM_PM->FORM_REW	0.518***	0.517***	5.787		
Effect on FEED_QUAL				0.004	0.079
FORM_TS->FEED_QUAL	0.024	0.022	0.218		
FORM_PM->FEED_QUAL	-0.022	-0.021	0.157		
FORM_REW->FEED_QUAL	0.282**	0.285**	2.719		
Effect on PROC_JUST				0.013	0.207
FORM_TS->PROC_JUST	0.004	0.005	0.044		
FORM_PM->PROC_JUST	-0.130	-0.137	1.289		
FORM_REW->PROC_JUST	0.195*	0.200*	2.061		
FEED_QUAL->PROC_JUST	0.396***	0.396***	4.747		
Effect on SUP_TRUST				0.014	0.326
PROC_JUST->SUP_TRUST	0.231**	0.235**	3.273		
FEED_QUAL->SUP_TRUST	0.433***	0.436***	6.457		

Note: *** p < 0.001, ** p < 0.01, * p < 0.05 (based on t₍₄₉₉₎, two-tailed test)

Table 6: Estimation of the measurement model (front-office subgroup, n=75)

	<i>Weight original sample (sample mean)</i>	<i>Loading original sample (sample mean)</i>	<i>Std. dev.</i>	<i>t- statistic (bootstrap)</i>	<i>Composite reliability (ρ_c)</i>	<i>Average variance extracted (AVE)</i>
FORM_TS	0.884 (0.891)		0.069	12.757	n.a.	n.a.
FORM_PM	0.979 (0.993)		0.080	12.276	n.a.	n.a.
FORM_REW	0.891 (0.899)		0.072	12.435	n.a.	n.a.
FEED_QUAL					0.853	0.596
feed ₁		0.793 (0.781)	0.096	8.222		
feed ₂		0.826 (0.812)	0.092	8.955		
feed ₃		0.720 (0.709)	0.105	6.886		
feed ₄		0.735 (0.731)	0.091	8.090		
PROC_JUST					0.855	0.592
procj ₁		0.834 (0.824)	0.081	10.305		
procj ₂		0.719 (0.701)	0.117	6.143		
procj ₃		0.756 (0.752)	0.085	8.894		
procj ₄		0.775 (0.775)	0.094	8.286		
SUP_TRUST					0.780	0.548
trust ₁		0.568 (0.541)	0.130	4.380		
trust ₂		0.760 (0.751)	0.110	6.906		
trust ₃		0.862 (0.848)	0.109	7.922		

Table 7: Discriminant validity coefficients (front-office subgroup, n=75)

	<i>FORM TS</i>	<i>FORM PM</i>	<i>FORM REW</i>	<i>PROC JUST</i>	<i>FEED_QUAL</i>	<i>SUP_TRUST</i>
FORM_TS	n.a.					
FORM_PM	0.660	n.a.				
FORM_REW	0.276	0.517	n.a.			
PROC_JUST	0.051	0.066	0.177	0.772		
FEED_QUAL	0.087	0.127	0.115	0.387	0.769	
SUP_TRUST	0.042	0.029	0.191	0.310	0.557	0.740

Note: Diagonal elements (bold) are the square root of the variance shared between the constructs and their indicators (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements. N.a. Non-applicable.

Table 8: Structural model results (front-office subgroup, n=75)

	<i>Path Coefficient – (original sample)</i>	<i>Path Coefficient - (sample mean)</i>	<i>t-statistics (bootstrap)</i>	<i>Q²</i>	<i>R²</i>
Effect on FORM_PM				0.038	0.436
FORM_TS->FORM_PM	0.660***	0.658***	7.222		
Effect on FORM_REW				0.021	0.274
FORM_TS->FORM_REW	-0.116	-0.111	0.745		
FORM_PM->FORM_REW	0.593***	0.589***	4.216		
Effect on FEED_QUAL				0.001	0.019
FORM_TS->FEED_QUAL	0.015	0.027	0.097		
FORM_PM->FEED_QUAL	0.082	0.075	0.451		
FORM_REW->FEED_QUAL	0.068	0.078	0.544		
Effect on PROC_JUST				0.002	0.171
FORM_TS->PROC_JUST	0.030	0.017	0.179		
FORM_PM->PROC_JUST	-0.090	-0.087	0.474		
FORM_REW->PROC_JUST	0.172	0.178	1.218		
FEED_QUAL->PROC_JUST	0.376***	0.374***	3.258		
Effect on SUP_TRUST				0.011	0.320
PROC_JUST->SUP_TRUST	0.111	0.130	1.152		
FEED_QUAL->SUP_TRUST	0.514***	0.531***	5.787		

Note: *** p < 0.001, ** p < 0.01, * p < 0.05 (based on t₍₄₉₉₎, two-tailed test)

Table 9: Estimation of the measurement model (back-office subgroup, n=80)

	<i>Weight original sample (sample mean)</i>	<i>Loading original sample (sample mean)</i>	<i>Std. dev.</i>	<i>t- statistic (bootstrap)</i>	<i>Composite reliability (ρ_c)</i>	<i>Average variance extracted (AVE)</i>
FORM_TS	0.896 (0.906)		0.057	15.718	n.a.	n.a.
FORM_PM	0.938 (0.952)		0.067	14.087	n.a.	n.a.
FORM_REW	0.845 (0.854)		0.048	17.683	n.a.	n.a.
FEED_QUAL					0.900	0.692
feed ₁		0.827 (0.805)	0.157	5.267		
feed ₂		0.869 (0.853)	0.135	6.449		
feed ₃		0.801 (0.790)	0.093	8.607		
feed ₄		0.831 (0.828)	0.068	12.163		
PROC_JUST					0.822	0.537
procj ₁		0.729 (0.724)	0.073	10.029		
procj ₂		0.732 (0.728)	0.080	9.171		
procj ₃		0.659 (0.654)	0.105	6.302		
procj ₄		0.805 (0.800)	0.072	11.175		
SUP_TRUST					0.771	0.539
trust ₁		0.561 (0.557)	0.127	4.416		
trust ₂		0.680 (0.672)	0.101	6.754		
trust ₃		0.917 (0.906)	0.079	11.631		

Table 10: Discriminant validity coefficients (back-office subgroup, n=80)

	<i>FORM TS</i>	<i>FORM PM</i>	<i>FORM REW</i>	<i>PROC JUST</i>	<i>FEED QUAL</i>	<i>SUP TRUST</i>
FORM_TS	n.a.					
FORM_PM	0.637	n.a.				
FORM_REW	0.542	0.593	n.a.			
PROC_JUST	0.115	0.031	0.328	0.733		
FEED_QUAL	0.151	0.115	0.397	0.443	0.832	
SUP_TRUST	0.311	0.098	0.401	0.520	0.540	0.734

Note: Diagonal elements (bold) are the square root of the variance shared between the constructs and their indicators (AVE). Off-diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements. N.a. Non-applicable.

Table 11: Structural model results (back-office group, n=80)

	<i>Path Coefficient – (original sample)</i>	<i>Path Coefficient - (sample mean)</i>	<i>t-statistics (bootstrap)</i>	<i>Q²</i>	<i>R²</i>
Effect on FORM_PM				0.055	0.405
FORM_TS->FORM_PM	0.637***	0.645***	8.226		
Effect on FORM_REW				0.053	0.397
FORM_TS->FORM_REW	0.276**	0.272**	2.206		
FORM_PM->FORM_REW	0.417***	0.421***	3.637		
Effect on FEED_QUAL				0.014	0.180
FORM_TS->FEED_QUAL	-0.010	-0.008	0.076		
FORM_PM->FEED_QUAL	-0.181	-0.188	1.171		
FORM_REW->FEED_QUAL	0.510***	0.530***	4.079		
Effect on PROC_JUST				0.013	0.246
FORM_TS->PROC_JUST	0.033	0.038	0.272		
FORM_PM->PROC_JUST	-0.203*	-0.214*	1.999		
FORM_REW->PROC_JUST	0.293*	0.301*	2.089		
FEED_QUAL->PROC_JUST	0.346**	0.347**	2.795		
Effect on SUP_TRUST				0.017	0.389
PROC_JUST->SUP_TRUST	0.349***	0.346***	3.469		
FEED_QUAL->SUP_TRUST	0.385***	0.391***	4.096		

Note: *** p < 0.001, ** p < 0.01, * p < 0.05 (based on t₍₄₉₉₎, two-tailed test)

Table 12: Group comparison of path coefficients

	<i>Difference in path coefficients, front- office minus back-office</i>	<i>t-statistics (bootstrap)</i>
Effect on FORM_PM		
FORM_TS->FORM_PM	0.023	0.195
Effect on FORM_REW		
FORM_TS->FORM_REW	-0.392*	-1.983
FORM_PM->FORM_REW	0.176	0.975
Effect on FEED_QUAL		
FORM_TS->FEED_QUAL	0.025	0.123
FORM_PM->FEED_QUAL	0.263	1.112
FORM_REW->FEED_QUAL	-0.442**	-2.496
Effect on PROC_JUST		
FORM_TS->PROC_JUST	-0.003	-0.016
FORM_PM->PROC_JUST	0.113	0.535
FORM_REW->PROC_JUST	-0.121	-0.607
FEED_QUAL->PROC_JUST	0.030	0.180
Effect on SUP_TRUST		
PROC_JUST->SUP_TRUST	-0.239	-1.713
FEED_QUAL->SUP_TRUST	0.129	0.995

FIGURES

Figure 1: Conceptual model (all predicted relationships are positive)

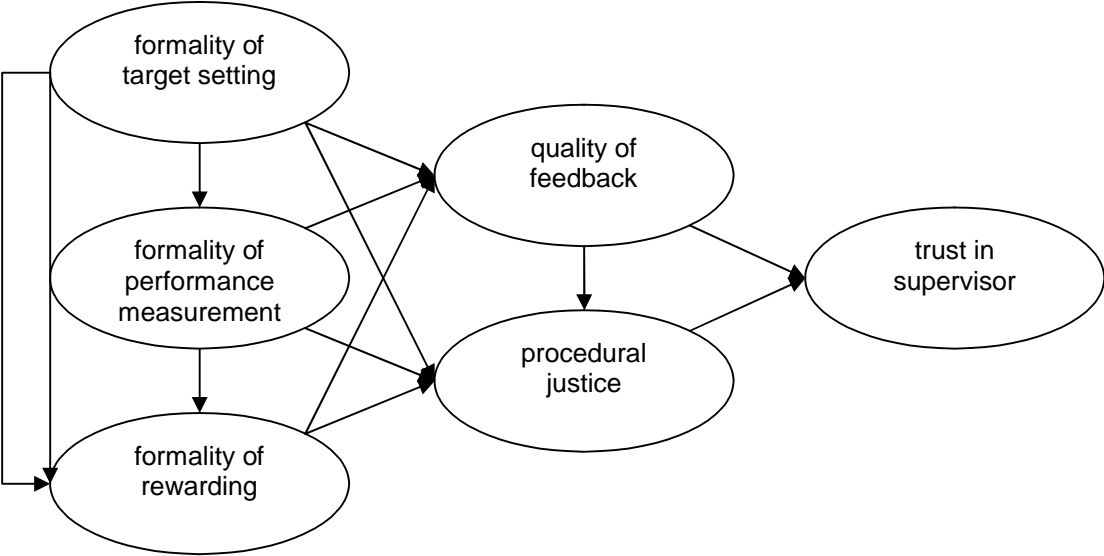


Figure 2: Results (full sample, n=160)

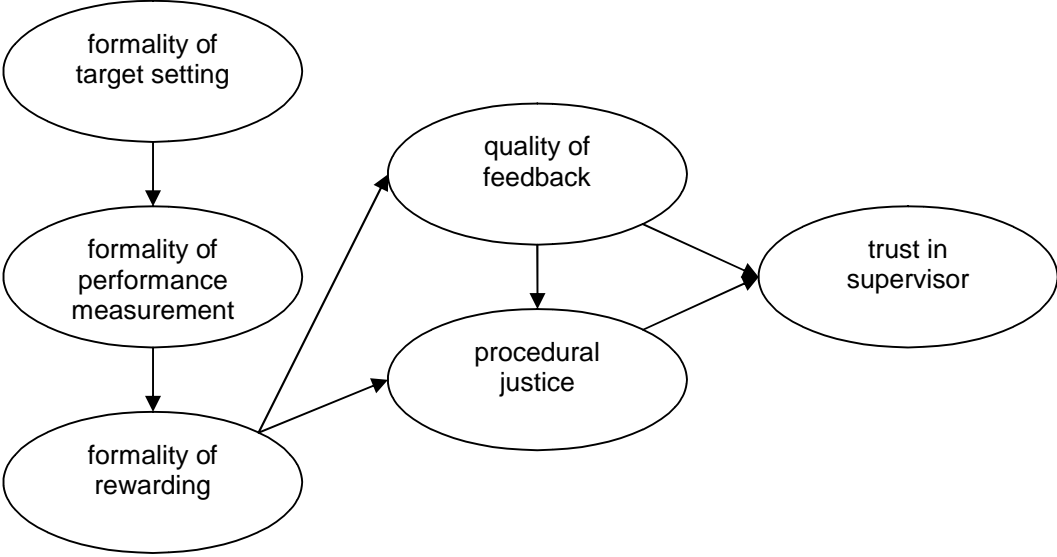


Figure 3: Results (front-office subgroup, n=75)

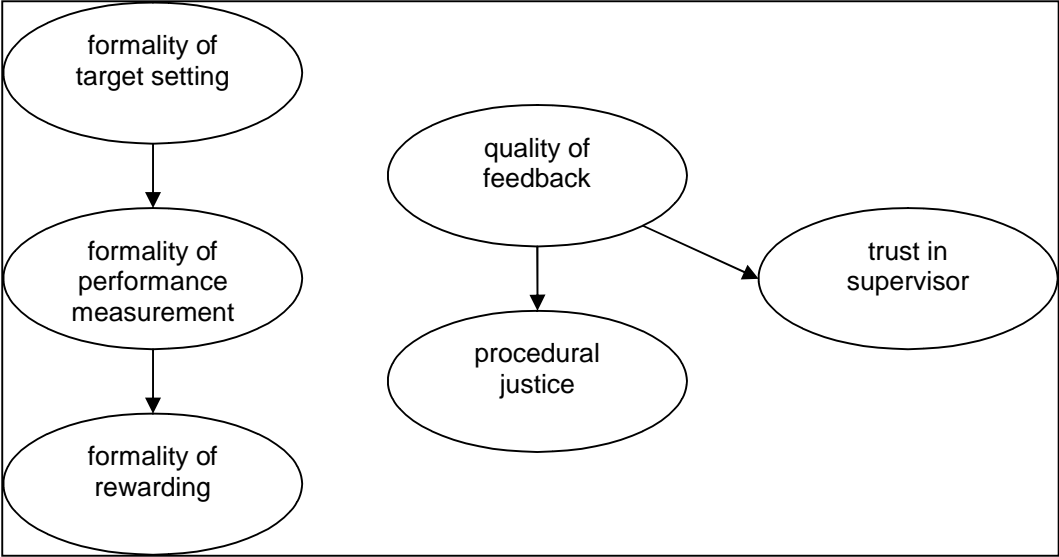
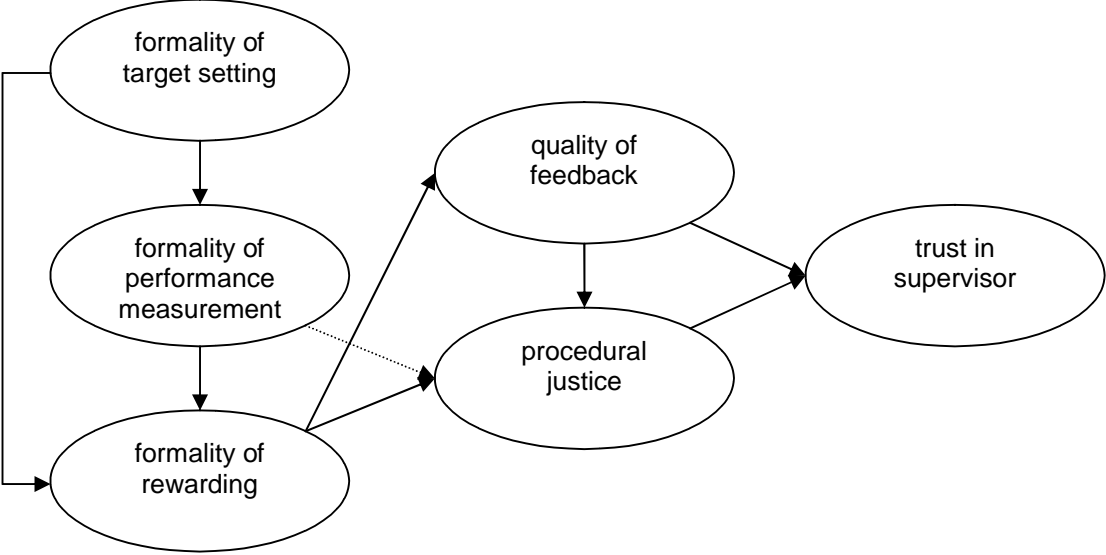


Figure 4: Results (back-office subgroup, n=80)



APPENDIX: MEASUREMENT INSTRUMENT

Respondents were asked to indicate the weight their superiors attached to each of four categories of (potentially relevant) performance indicators.

<i>Performance dimension</i>	<i>Performance measures</i>
Financial performance of your unit	sales, profitability, interest margins, costs, value of collected deposits, value of granted loans, value of payment commissions etc.
Operational performance of your unit	productivity, completion of projects and phases of projects, number of activities such as issued credit cards, number of stipulated contracts etc.
Employee relations within your unit	employee satisfaction, turnover, achieved workforce capabilities, number of trainings etc.
Quality and innovation of your unit	quality awards, improvement of service quality, customer satisfaction, introduction of new services, efficiency improvements etc.

This question is about the responsibilities of your job as manager of a unit (e.g. a branch, or a department). Below you find four ways in which your supervisor may assess your performance as unit manager. We are interested in the relative importance of each of these four performance areas. Therefore we ask you to allocate a total number of 100 points to one or more of these areas, reflecting their relative importance. For example, if you allocate the full 100 points to one area, you express that only that area is important, and not the other 3. If you allocate 25 points to each area, you indicate that all areas are equally important for your work, and that your superior does not have any priorities or emphases. Please be as specific as possible in allocating the 100 points, and answer these questions for your function as unit manager, rather than for the bank in general. There are no wrong or right answers. Note that the areas are described broadly.

Financial performance of your unit	
Operational performance of your unit	
Employee relations within your unit	
Quality and innovation of your unit	
TOTAL (points or %)	100

Then, the three questions for the formality of the three stages of the performance management cycle were presented as follows:

Formality of target setting (FORM_TS)

Respondents were asked to indicate their relative agreement with the following statements.

<i>Less formal</i>		<i>More formal</i>
When establishing work objectives, my superior does not explicitly document these objectives in writing.	1 2 3 4 5	When establishing work objectives, my superior explicitly documents these objectives in writing.
When establishing work objectives, my superior casts these objectives in qualitative terms.	1 2 3 4 5	When establishing work objectives, my supervisor casts these objectives in quantitative targets

Formality of performance measurement (FORM_PM)

Respondents were asked to indicate their relative agreement with the following statements.

<i>Less formal</i>		<i>More formal</i>
When judging my performance, my superior uses his (her) personal judgment of my performance.	1 2 3 4 5	When judging my performance, my superior relies on objective information from the information system.
When judging my performance, my superior discusses my performance in qualitative terms.	1 2 3 4 5	When judging my performance, my superior expresses my performance in quantitative terms (rates my performance on quantitative rating)

Formality of rewarding (FORM_REW)

Respondents were asked to indicate their relative agreement with the following statements.

<i>Less formal</i>		<i>More formal</i>
My <i>fixed</i> pay is based on my supervisor's personal judgment of my performance	1 2 3 4 5	objective information from the information system
My <i>fixed</i> pay is based on my performance in qualitative terms	1 2 3 4 5	my performance in quantitative terms
My <i>bonus</i> is based on my supervisor's personal judgment of my performance	1 2 3 4 5	objective information from the information system
My <i>bonus</i> is based on my performance in qualitative terms	1 2 3 4 5	my performance in quantitative terms

For each of the following questions, respondents were asked to indicate their level of agreement with the statements on a five point Likert scale (1 = I completely disagree, 2 = I disagree, 3 = neutral, 4 = I agree 5 = I completely agree).

Feedback quality (FEED_QUAL)

feed ₁	My supervisor gives me useful feedback about my job performance.
feed ₂	The performance information I get from my supervisor is generally not very meaningful. (Reverse)
feed ₃	The feedback I receive from my supervisor helps me do my job.
feed ₄	I value the feedback I receive from my supervisor.

Procedural justice (PROC_JUST)

procj ₁	I have full confidence in the system's fairness in determining pay.
procj ₂	I have full confidence in the system's fairness in determining targets
procj ₃	I think that the way in which my performance is measured is fair.
procj ₄	I have full confidence in the system's fairness in evaluating performance.

Trust in supervisor (SUP_TRUST)

trust ₁	My superior will always act in my favor if he has the chance.
trust ₂	I am convinced that my superior will always fully and honestly keep me up to date of everything that is important to me.
trust ₃	If my superior takes a decision that is against my interest, I am convinced that this decision is justified for other reasons.