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"Tying the Manager's Hands": How Firms Can Make Credible Commitments That Make Opportunistic Managerial Intervention Less Likely

by

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Abstract
We discuss and empirically examine a firm-level equivalent of the ancient problem of "tying the King's hands," namely how to maximize managerial intervention for "good cause," while avoiding intervention for "bad cause." Managers may opportunistically intervene when such intervention produces private benefits. Overall firm performance is harmed as a result, because opportunistic managerial intervention harms employee motivation. The central point of the paper is that various mechanisms and factors, such as managers staking their personal reputation, employees controlling important assets, strong trade unions, corporate culture, etc. may function as constraints on managerial proclivities to opportunistically intervene. Thus, firms can make credible commitments that check managerial proclivities to opportunistically intervene. We derive 5 hypotheses from these ideas, and test them, using path-analysis, on a rich dataset, based on 329 firms in the Spanish food and electric/electronic industries.

Key words: Managerial opportunism, credible commitments, organizational design, transaction cost economics

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I. Introduction

In this paper we discuss and empirically examine a firm-level equivalent of the ancient problem of "tying the King's hands" (Root 1989). A key theme in much of the work on the theory of the firm (e.g., Coase 1937; Malmgren 1961; Casson 1994; Williamson 1996; Foss 1997; Wernerfelt 1997) is that the exercise of authority in the form of managerial fiat in response to changes in the environment provides a reason why firms exist. Such managerial intervention will typically override existing instructions of employees, and in firms where employees are given considerable discretion, managerial intervention may furthermore amount to overruling decisions made by these employees on the basis of delegated decision rights.

A fundamental (though arguably somewhat neglected) set of problems is that the option to intervene (1) "… can be exercised both for good cause (to support expected net gains) and for bad (to support the subgoals of the intervenor)" (Williamson 1996: 150-151), (2) it may be difficult to verify the nature of the cause, and (3) promises to only intervene for good cause are hard to make credible because they are not enforceable in a court of law. There is thus a problem of "… *credibly* [promising] to respect autonomy save for those cases where expected net gains to intervention can be projected" (Williamson 1993: 104). A primary challenge — in theory as well as managerial practice — is therefore how to maximize managerial intervention for "good cause," while avoiding intervention for "bad cause."[1]

In this paper, we contribute to the understanding of this problem by examining how firms can make credible commitments that make (perceived and/or real) opportunistic managerial intervention (Dow 1987; Kreps 1990), "intervention for bad cause," less likely. Our overarching perspective on these issues is mainly drawn from organizational economics (e.g., Milgrom 1988; Jensen and Meckling 1992; Bijl 1996; Milgrom and Roberts 1996; Williamson 1996; Aghion and Tirole 1997; Baker, Gibbons, and Murphy 2000), and on political economy work on credible commitments (e.g., Weingast and Marshall 1988; Miller 1992; Miller and Hammond 1994; Moe 1997). However, in order to lend further support for our arguments, we also draw on ideas about psychological contracts in organizations (Argyris 1960; Rousseau 1989; Coyle-Shapiro and

[1] Milgrom and Roberts (1996: 168) argue that "… the very existence of centralized authority is incompatible with a thorough going policy of efficient selective intervention. The authority to intervene inevitably implies the authority to intervene inefficiently." While we agree that "first-best intervention" is strictly impossible, "second-best intervention" is feasible.

Kessler 2000; Tepper and Taylor 2003), extrinsic and intrinsic motivation (Osterloh and Frey 2000), and psychological research on decision-making (e.g., Bazerman 1994).

Our argument begins from the observation that all firms that are larger than the one-man firm rely on both the use of managerial authority and employee discretion, that is, the ability of employees to control resources including their own human capital. While authority is needed, for example, to manage residual interdependencies, discretion may be rationally delegated to employees, because it stimulates motivation and fosters local learning and the use of local knowledge. A considerable body of work in organization theory, including organizational economics, has addressed issues that relate to the distinction between authority and delegation, such as the optimal span of control (Williamson 1970), the design of information structures (Galbraith 1974), and optimal delegation given the moral hazard problem (Jensen and Meckling 1992; Armstrong 1994; Aghion and Tirole 1997). In these treatments, authority is a matter of control and the giving of orders. Other issues that are implied by the distinction between authority and discretion have arguably been given less attention, notably how the exercise of authority in the form of opportunistic managerial intervention harm motivation, diminishing the beneficial effects of discretion.[2] From this perspective, a basic problem in organizational design is that beneficial delegation is hard to sustain under the property rights structure characterizing the firm in which delegated decision rights are always "loaned, not owned" (Baker et al. 1999). Thus, those who hold ultimate decision rights (i.e., authority) may use these to renege on delegation, overrule decisions made on the basis of delegated rights, and selectively intervene for bsad cause. This harms employee motivation. However, managers may be constrained by various mechanisms, including implicit contracts (Kreps 1990; Baker et al. 1999) or explicit credible commitments (Brocker et al. 1992; Moe 1997) that reduce the incidence and severity of such harmful interventions.

The design of the paper is as follows: We develop a notion of authority that goes beyond the picking of well-defined actions from an employee's action set (as in Simon 1951) and also includes the power to delegate and constrain discretion, as well as the ability to veto subordinates' decisions. We also focus on the costs and benefits of delegating discretion to employees. We then turn to a discussion of the motivational problems that may arise when managers exercise authority by reneging on the delegation of discretion, that is "opportunistic

[2] However, see Rousseau (1989), Robinson and Rousseau (1994), and Robinson and Morrison (1995) for organizational behavior work, and Aghion and Tirole (1997) and Baker, Gibbons and Murphy (1999, 2002) for organizational economics work, that has a strong bearing on these issues.

managerial intervention." It is often in an organization's interest to avoid such managerial intervention. There are various mechanisms that may credibly constrain the flexibility of managers to intervene opportunistically. Some of these are external to the firm (e.g., tight labor and capital markets, strong labor unions), and some are internal to the firm. In the latter category are credible commitments undertaken by managers themselves (e.g., managers staking personal reputations), as well as employees controlling critical resources. A number of hypotheses are derived and tested on data from the Spanish electronics and food industries. To the best of our knowledge, the present paper represents the first empirical, firm-level work on these issues.

II. Managerial Intervention and Delegation: Tensions and Credible Managerial Commitment

Authority and Delegation of Discretion

Simon (1951) provides a classic notion of authority. Authority is defined as the situation in which a "boss" is permitted by a "worker" to select actions, $\mathbf{A}^0 \subset \mathbf{A}$, where $\mathbf{A}$ is the set of the worker's possible behaviors. For the worker to accept the assignment, it must lie within his "zone of acceptance." A limitation of this notion of authority is that it seems to be based on the boss having all the information, the worker being merely a passive instrument who reacts to instructions based on this information. This is a notion that does not square easily with the (alleged) increasing importance of partly self-managing knowledge-workers in modern production (e.g., Purser 1998).

Simon (1991: 31) himself later noted that authority may be understood more broadly, namely as a command that takes the form of a result to be produced, a principle to be applied, or goal constraints, so that "[o]nly the end goal has been supplied by the command, and not the method of reaching it." However, even this is arguably too narrow. Usually, some aspects of "the method of reaching" an end goal are specified, so that employees are seldom granted full discretion. Indeed, a function of authority is the placing of restrictions on the decision rights that are granted to employees with respect to *how* they reach an end goal (Milgrom 1988; Barzel 1997; Holmström 1999). Authority in the sense of placing restrictions on behavior is exercised in order to avoid costs associated with unwanted externalities, including, but by no means limited to, the costs of morally hazardous behavior. Such externalities may also include coordination failures, such as scheduling problems, duplicative efforts (e.g., of market information gathering

or R&D), and cannibalization of product markets and other instances of decentralized actions being inconsistent with the firm's overall strategic planning. These externalities arise when employees exercise *discretion*.

Discretion may be defined as the ability of an agent to exercise control over a resource, that is, she is able to allocate that resource to a purpose that she, for whatever reason, finds suitable (Barzel 1997). There are various reasons why firms may delegate discretion. For example, if the employee is better informed than the manager with respect to how certain tasks should be carried out, and this knowledge is costly to communicate (Casson 1994; Melumad et al. 1995), efficient co-location of decision-making rights and knowledge requires that employees are delegated discretion with respect to how they use their expertise in problem solving (Jensen and Meckling 1992). Also, delegation may be undertaken for motivational rather than knowledge-based reasons. Thus, a long tradition in social psychology (probably beginning with Roethlisberger et al. 1939) and more recently in the empowerment literature (Conger and Canungo 1988; Thomas and Velthouse 1990; Gal-Or and Amit 1998), suggests that increasing the delegation of discretion to employees often "… raises the perceived self-determination of employees and therewith strengthens intrinsic motivation" (Osterloh and Frey 2000: 543). In turn, this may lead to an increase in creativity in the pursuit of goals.[3] Expert knowledge is better utilized and learning is fostered (Mudambi et al. 2003). In contrast, decreasing the level of delegated discretion may crowd out intrinsic motivation, particularly when this frustrates the employee's "… beliefs regarding the terms and conditions of the reciprocal exchange agreement" (Rousseau 1989: 23). These arguments suggest the following hypothesis:

Hypotheses 1: *Employee motivation depends positively on the degree of delegation of discretion.*

[3] Some reservations and potential critiques should be noted at this point. First, it is conceivable that discretion may harm motivation if employees do not have the knowledge or personality to command such discretion. Second, employees may feel uncomfortable with increased discretion because it may imply responsibilities without additional pay or benefits. In short, employees need to have not just the opportunity, but also the ability and incentive to engage in self-management (cf. Mowday et al. 1982). We hypothesize, however, that on the aggregate (firm) level, the positive motivational effects of increased delegation dominate the negative ones, and that opportunity to engage in self-management is at least to some extent matched by a corresponding ability to do so. Third, in the model we later test, we assume a linear relation between delegation and motivation and performance. This, too, may be criticized. We have tested whether the inclusion of the squared variable for delegation improves the goodness of fit and provides a significant coefficient. However, it turns out that the coefficients are not significant and that, although the absolute and incremental goodness of fit increases slightly, the parsimounious goodness of fit decreases considerably. We therefore opted for not including this squared variable.

We further argue that the motivational effects of increased delegation give rise to improved employee productivity. Partial evidence for this is the finding that giving R&D personnel the right to share research findings with others and to publish such findings increase R&D productivity (McMillan et al. 2000; Mudambi et al. 2003). In turn, increased employee productivity causes firm performance to improve.

There are more direct reasons why delegation may improve firm performance. Thus, employees may be better informed than managers with respect to how certain tasks should be carried out (Jensen and Meckling 1992). If such knowledge is costly to communicate efficient co-location of decision-making rights and knowledge then requires that employees are delegated discretion with respect to how they use their expertise in problem solving (Casson 1994; Melumad et al. 1995). Furthermore, it is arguable that delegating discretion to employees will not only lead to a better use of existing knowledge, but also to the discovery of *new* knowledge that would not have been discovered in the absence of delegation (Miles et al. 1997). This reasoning gives rise to the following hypothesis:

> **Hypotheses 2***: Firm performance depends positively on the degree of delegation of discretion to employees.*

So far, nothing has been said about the cost dimensions of delegation. Although we do not test hypotheses regarding the costs of delegation, we use insights in these costs to develop other hypotheses. The costs of delegation are treated in the rich agency literature on optimum delegation (e.g., Jensen and Meckling 1992; Armstrong 1994; Aghion and Tirole 1997; Gal-Or and Amit 1998). A general conclusion is that delegation creates opportunities for employees to collect informational rents and/or engage in morally hazardous activities (i.e., "employee opportunism"). Roughly, optimum delegation obtains when the incremental gain from making use of expert knowledge equals the incremental costs from loss of control. The cost caused by control loss is ultimately rooted in the differing preferences of managers and employees in the relevant hierarchy and the costs of monitoring relevant aspects of the employee's activities.

Although the agency approach is useful for framing the cost aspects of delegation, it has certain limitations. First, it builds on an assumption of complete contracting, which makes it hard to provide a rationale for authority (Hart 1995), except in the limited sense of monitoring. Second, it abstracts from those costs of delegation that are not the result of moral hazard, but rather of mistakes, sub-goal optimization, duplicative efforts, wrong timing of decisions and erroneous co-location of knowledge and decision rights made by entirely well-intentioned

employees (cf. Hendry 2002), and which may be reduced by means of the exercise of the authority.

Thus, in actuality the tradeoff associated with the optimum level of delegation involves many variables. It may change over time as the relevant determinants change. Given this, a key management task arguably is to exercise authority in such a way that the organization gropes towards optimum delegation, and to track the optimum level of delegation in the face of changing contingencies. Thus, there will necessarily be an interdependence between delegation and authority. Discussing the issues of authority and discretion separately is, therefore, problematic because the interdependence between authority and discretion gives rise to distinct organizational problems, notably the incentive liabilities associated with managerial intervention that is perceived by employees to be opportunistic.

Managerial Intervention and Changes in Delegation

As discussed earlier, there are both beneficial and negative implications for organizations of delegating discretion to employees. Thus, firms confront a basic tradeoff in the choice of delegation. In the absence of managerial intervention, once implemented, optimum delegation will continue as long as contingencies, such as technology, tastes, competitive conditions and other external contingencies remain relatively stable, and as long as managers do not see a need for changing the firm's overall strategy or the internal resource allocation in the firm. Given this, there are three overall reasons why optimum delegation may change, namely, first, as a response to changed external contingencies (Lawrence and Lorsch 1967; Casson 1994); second, as a result of changed managerial perceptions with respect to the firms overall strategy and internal resource allocation (Penrose 1959); and, third, some mix of the two. We briefly consider the first two reasons in the following.

Externalities are an important determinant of the costs and benefits of delegation of discretion. With respect to the benefit side, externalities may enter to the extent that increased delegation is accompanied by, for example, increased knowledge-sharing (Osterloh and Frey 2000; Mudambi et al. 2003). With respect to the cost side, externalities enter, for example, in the form of the moral hazard, duplicative efforts, and misuse of corporate resources that may result from delegation. Thus, although delegation may be a part of an attempt to make the organization more modular (Zenger 2002), complex interdependencies are not necessarily eliminated by delegation *per se*. Indeed, delegation of discretion may sometimes introduce

more interdependencies between organizational units (e.g., when delegation implies more horizontal links between units). Also, delegation may imply more extensive rights to draw on corporate resources (as in a matrix organization).

Because complex interdependencies still exist under delegated discretion, major changes in contingencies are likely to change the optimum degree of delegation. For example, changes in the firm's overall strategy may require the building-up of a new product platform. Such new technologies typically require the delegation of more discretion to designers and engineers in order to stimulate exploration through wide bandwidth communication channels. Or, a change in the competitive conditions, such as an impending price war, may dictate that discretion be diminished in order to curb slack and reduce costs. Many contingencies cannot be foreseen, or it is too costly to try to do so (Malmgren 1961; Williamson 1996). Moreover, how exactly contingencies impact on the preferred level of delegation may also be difficult to specify *ex ante* (Coase 1937). This introduces a need for *ex post* decision-making (Coase 1937; Malmgren 1961; Williamson 1996). Centralized decision-making, that is, discretionary authority, becomes a preferable mechanism of coordination when those who may hold authority has a superior understanding of how contingencies influence interdependencies and how this impacts on the preferred degree of delegation.

The preferred delegation of discretion may also change because of changed managerial perceptions, even if no outside contingencies change. For example, a change in the management team may cause the team's "image" (Penrose 1959) of the firm's opportunity set to change. Or, managers may develop certain cognitive biases that twist their assessment of costs and benefits (Bazerman 1994), leading them to change their perception of what the optimal trade-off is. For example, under what psychologists call the "loss aversion bias," a loss relative to the *status quo* is seen as more undesirable than a gain relative to the same *status quo* is seen as desirable (e.g., Kahneman et al. 1991). This may lead managers to overestimate costs relative to benefits, which will cause them to change the degree of delegation of discretion.

These psychological effects may be aggravated by overconfidence biases. Robust findings in experimental psychology show the presence of a systematic overconfidence bias in judgment, that is, people tend to trust their own judgments more than is "objectively" warranted. Managers are not likely to be exceptions to this bias, perhaps quite the contrary.

The presence of the overconfidence bias in the judgments that underlie managerial decision-making may strengthen managers' incentive to change the level of delegation of discretion. Changing delegation of discretion may not, as argued earlier, in itself be harmful to employee motivation, namely when employees and management basically agree on the need for a change. However, the presence of biases in the perceptions and judgments of the parties means that it is harder for employees to ascertain whether intervention takes place for bad or for good causes, that is, whether or not there is a break with established implicit contracts and commitments to refrain from opportunistic intervention. We consider opportunistic managerial intervention in the following section.

Opportunistic Managerial Intervention and Employee Motivation

Williamson's (1996) distinction between intervention for good cause and intervention for bad cause (i.e., opportunistic managerial intervention) is a fundamental one, because it directs attention to the benefits as well as the costs of managerial authority. In terms of Williamson's distinction the preceding examples of managerial intervention largely fall in the category of intervention for good cause, although we have introduced a perceptual and cognitive issue, namely, employees may mistake good for bad causes and *vice versa*, that is not present in Williamson's discussion. More generally, employee motivation is arguably mediated by employee *perceptions* of what motivates managerial intervention and whether and in which manner managerial intervention breaks with existing psychological contracts (Rousseau 1989; Robinson and Morrison 1995; Coyle-Shapiro and Kessler 2000). Thus, intervention that essentially harms employees (e.g., leads to layoffs) may still not harm motivation, particularly in a time of a severe organizational crisis and given that management succeeds in convincing employees of the need for layoffs. Or, managerial intervention that objectively benefits all relevant parties may be perceived by employees as breaking with psychological contracts. In sum, in ascertaining the nature of managerial intervention, employees face a complicated signal extraction problem. Our focus is on managerial intervention that is perceived by employees as "intervention for bad cause," that is, "opportunistic managerial intervention."[4]

The relevant organizational behavior literature, which is largely based on social psychology (Argyris 1960; Rousseau 1989; Robinson and Morrison 1995; Coyle-Shapiro and

[4] Note that this is not entirely congruent with the notion of opportunism in Williamson (1996), primarily because Williamson does not incorporate the perceptual issues that we do, and therefore does not allow for difficulties of distinguishing between what is and what is not opportunistic behavior.

Kessler 2000), suggests that such managerial intervention amount to, in economic terms, reneging on implicit contracts or explicit commitments. For example, managers may overrule employee decisions that are made on the basis of delegated decision rights, or managers may renege on the level of delegation itself. As further suggested by the relevant organizational behavior literature (e.g., Robinson and Rousseau 1994; Rousseau 1989), loss of motivation results. In particular, organizational citizenship behavior — that is, employee behavior that promotes organizational efficiency but is not (perhaps, cannot be) explicitly recognized by an organization's reward system — may suffer from opportunistic managerial intervention (Robinson and Morrison 1995).

The psychological literature on cognitive biases suggests further reasons why motivation may be harmed by opportunistic managerial intervention. In an employee relationship, employees develop implicit and explicit expectations of the contract governing the relationship (Coyle-Shapiro and Kessler 2000), and particularly of the benefits that they believe they deserve under the implicit contract, that is, their "entitlements" (Heath et al. 1993). For example, certain levels of delegated discretion may become "status quo" points, in the sense that they represent what employees believe are their entitlements. Thus, if employs enjoy considerable discretion this may become part of their (perceived) entitlements. As discussed earlier, loss aversion implies that a loss relative to the status quo point is seen as more undesirable than a gain relative to the same point is seen as desirable. This means that employees will develop a bias against changing the level of discretion in a downwards direction, and that they can be expected to resist such changes, as well as suffer a loss of motivation if the change is, in fact, forced upon them. The above reasoning is summed up in the following hypothesis:

> **Hypothesis 3:** *Employee motivation varies negatively with opportunistic managerial intervention.*

For the firm, this is a problem to the extent that loss of motivation leads to employees cutting back on the effort they supply to the firm, and also on their firm-specific investments in human capital.[5] This implies the following hypothesis:

[5] Of course, loss of motivation may not automatically lead to, for example, less effort supply, if monitoring systems or extrinsic motivation can substitute for the loss of motivation caused by opportunistic managerial intervention.

Hypothesis 4: *Overall firm performance varies negatively with opportunistic managerial intervention.*

Why Opportunistic Managerial Intervention?

As suggested earlier, the problem of loss of motivation because of opportunistic managerial intervention is related to what Oliver Williamson (1996: 150) calls the "impossibility of selective intervention," that is, the puzzle of "Why can't a large firm do everything that a collection of small firms can and more?" Thus, a large firm could replicate the market and only selectively intervene when there would be expected net gains from this, so that "… the firm will do at least as well as, and will sometimes do better than, the market." However, Williamson points out argues that such selective intervention is "impossible." Incentives are diluted, because the option to intervene "… can be exercised both for good cause (to support expected net gains) and for bad (to support the subgoals of the intervenor)" (Williamson 1996: 150-151), and employees know this. Promises to only intervene for good cause can never be credible, Williamson argues, because they are not enforceable in a court of law. A fundamental problem — in theory as well as managerial practice — is therefore how to maximize managerial intervention for "good cause," while avoiding intervention for "bad cause." Our discussion provides a further reason why first-best selective intervention is impossible: Employees may have difficulties distinguishing between intervention for good and bad cause.

However, apart from these perceptual problems it is not immediately apparent why opportunistic managerial intervention should ever take place. According to Hypothesis 4 opportunistic managerial intervention destroys value. However, there are least two explanations for why value-destroying opportunistic managerial intervention may take place, namely managerial private benefits and managerial time inconsistency.

According to the first explanation, managers may derive a private benefit (in whatever form) from managerial intervention that destroys value, when organizational and private costs and benefits are timed in certain ways. For example, managers who are up for promotion may derive private benefits from imposing restrictions to strongly cut the costs of the slack and spillover effects associated with a high level of delegation of discretion. If organizational benefits follow later than these costs, managers have an incentive to engage in managerial intervention that harms motivation. The organizational costs of such actions may not be borne

by the managers themselves, for example, because they may have left the firm or the position in favor of another firm or position.[6]

The explanation from managerial time inconsistency relates to a familiar problem in political economy (Weingast and Marshall 1988; Moe 1997). Typically, this problem starts out from a timing of costs and benefits that is the opposite of the one in the above explanation. For example, governments have an incentive to *initially* promise not to confiscate (too much of) the wealth created by entrepreneurs in order to strengthen their incentives to actually undertake investments, and *then*, in some later period, deviate from this promise and confiscate substantial portions of the created wealth. In the context of delegation, this kind of behavior may consist in, first, promising substantial discretion. When employees, enthused about their new extended discretion, come up with profit-improving ideas about how to improve products, processes, etc., managers may harvest these, decide that the organization already has its hands full with implementing the ideas, and that the level of delegated discretion may be usefully reduced in order to save costs.[7] However, the political economy literature referred to above also suggests that these problems may be checked by various institutions and mechanisms. We consider these next.

Credible Delegation

The political economy concept of credible commitment (see also Williamson 1996) implies that it is often in an organization's long-term interest to avoid later period actions that break promises (with respect to delegation), thereby harming organizational members, and that avoiding such behavior may be accomplished by credibly constraining the flexibility of managers in such a manner that the initial promise becomes credible (Weingast and Marshall 1988; Moe 1997). In the present context, there are two classes of ways in which promises to not engage in opportunistic managerial intervention may be made credible, namely what may be called *internal* and *external* mechanisms.

With respect to *internal* mechanisms, managers may *stake their personal reputations* (Miller 1992; Argyres and Mui 1999), for example, through symbolic and communicative acts,

[6] Even if managers are in fact made partly responsible for later organizational costs, their rate of time preference may be such that these costs are heavily discounted.

[7] This may help explain why organizations often "vacillate" between loose and hierarchical structures (Nickerson and Zenger 2000).

for example, announcing in large-scale company gatherings one's firm commitment to certain policies and values (Brockner et al. 1992). This suggests the following hypothesis:

Hypothesis 5a: *Opportunistic managerial intervention varies negatively with the strength of managers' personal reputations for pursuing a "fair" or "hands off" policy in dealing with employees.*

It is well know that, in general, reputation effects are far from perfect with respect to constraining opportunistic behaviors (Williamson 1996). This also holds for reputation effects inside the hierarchy. For example, managers change jobs and may not carry their reputation with them. Corporate cultures are longer lasting than personal reputations and serve to enforce implicit contracts in situations where personal reputations fail (Kreps 1990):

Hypothesis 5b: *Opportunistic managerial intervention varies negatively with the extent to which corporate culture implies expectations that managers will pursue a "fair" or "hands off" policy in dealing with employees.*

Hierarchical structure also plays a role in constraining managerial opportunistic intervention. Thus, Milgrom (1988) argues that employee rent-seeking that aims at influencing hierarchical superiors to selective intervene to the benefit of the rent-seeking employees will be constrained by rigid, hierarchical structures which makes such rent-seeking more costly. Also, upper and lower-level managers may differ in their preferences for intervention, for example, lower-level managers may derive a private benefit from overruling, whereas upper-level managers do not (Aghion and Tirole 1997).

A third reason why hierarchical structure may constrain opportunistic managerial intervention (in fact, all managerial intervention) is that the hierarchy is not just a structure of authority, but also one of information (Thompson 1967; Galbraith 1974). Thus, there will be an informational distance between those possessing authority and those to whom discretion has been delegated. The size of this informational distance influences the basis for exercising judgment with respect to decisions whether to overrule employees or not. All else being equal, the more hierarchical layers that information has to pass through before reaching the level exercising authority, the less adequate is this basis likely to be. Moreover, even though there may be few hierarchical layers, managerial task descriptions may be such that managers will essentially be overloaded if they insist on being sufficiently informed to be in a position to overrule. If the manager realizes that because of information overload, he is not in a position to

rationally decide whether to overrule or not, he should not overrule (Aghion and Tirole 1997). Thus, this reasoning predicts that overruling of employees is less likely to occur in organizations with large informational distances and/or managers that are heavily burdened with information:

Hypothesis 5c: *Opportunistic managerial intervention varies negatively with the informational distance in the corporate hierarchy.*

Some employees or groups of employees may be particularly costly for management to overrule, because they control critical resources, notably their own human capital. For example, Henry Ford II and the rest of the Ford top management team tolerated the open disagreement with official Ford strategy expressed by Lee Iacocca and his clique of loyal managers, because of the marketing skills exercised by Iacocca and his men (Halberstam 1986). Overruling such employees means that they may cut back on the supply of their essential services and may refrain from augmenting their valuable human capital. This suggests the following hypothesis:

Hypothesis 5d*: Opportunistic managerial intervention varies negatively with the degree of human capital specificity.*

Employees with strongly specialized, important human capital may possess considerable bargaining power and influence (Rajan and Zingales 1998). However, such influence may also be secured through other means, such as extensive employee ownership of the firm. This means that employee interests may be more strongly reflected in corporate decision-making, implying that in such firms, opportunistic managerial intervention may be less prevalent:

Hypothesis 5e*: Opportunistic managerial intervention varies negatively with the degree to which employee interests are represented in corporate decision-making.*

With respect to *external* mechanisms that may enforce delegated discretion, a clear example is *strong trade unions or professional associations*. Their influence may imply that certain rights are so strongly protected (i.e., they are outside the "zone of acceptance," Simon 1951) that management cannot realistically change these (Argyres and Liebeskind 1999).

Hypothesis 5f: *Opportunistic managerial intervention varies negatively with the degree of unionization and the strength of unions and professional associations*.

In the following section, we present our data set, the methods we have applied, and the results.

III. Data, Variables, Constructs, and Results

Data Collection

Data were collected by mail questionnaire after an initial pilot testing of the instrument. The sample population is composed of all firms in the Spanish food and electric/electronic industries (SIC 20 and SIC 36) with a turnover of 3 million euros or more in the year 2000[8]. Following these criteria, the population of the study was drawn from the directory, *DB Marketing: 700.000 empresas españolas*. This directory is updated on an annual basis by the international management consultancy, Dun & Bradstreet. From this database we identified 3.040 firms that met the conditions described above. We mailed an initial questionnaire with a customized letter addressed to the production manager in each firm. 36 questionnaires were returned, because either the address was wrong or the firm had quitted its activity. Furthermore, not all the remaining questionnaires were valid: Missing values and the unfeasibility of identifying the firm to which some of the questionnaires belonged resulted in the final sample being composed of 329 firms (11% of the total population). Assuming the worst scenario for a binary variable, where [p = q = 50%], and imposing a confidence level of 95%, these figures represent a sampling error of ±5'09%.

Variables and Constructs

Table 1 shows a brief description of the variables. Some of them required direct figures from key respondents, while others have been addressed through the linear combination (using Principal Component Analysis) of several indicators generally valued on a five point Likert-type scale.

XXXXXXXX *INSERT TABLE 1 ABOUT HERE* XXXXXXXX

The process of building these variables followed two steps. First of all, and based on the extant literature (Mowday, Steers and Porter 1982; Dewar, Whetten and Boje 1980; Lawrence and Lorsch 1967; Pugh and Hickson 1976; Dow 1987; Grimshaw and Rubery 1998), a list of indicators for each variable was presented to a group of three production managers and two

[8] The kind of information required for this study is not usually available for smaller firms or results are often rather obvious. Moreover, the greater the size of the firm, the more experience firms have and the higher the qualification of the participant regarding the concepts included in the questionnaire; this obviously affects the reliability of the responses by making the answers more rigorous.

operators from diverse firms.[9] They were asked to discuss how representative each indicator was of the corresponding construct and propose others that were not in the original list, concluding with a different number of indicators for each variable that, in their view, reasonably reflected what the variable tried to grasp. In a second stage, these indicators were tested in twenty interviews together with the rest of the items of the questionnaire. We finally chose those for each variable that provided not only the highest Cronbach's α, but also a first component through Principal Component Analysis that could explain more than 50% of the variance of the items.

This process turned out to be satisfactory, although obviously not perfect. Thus, for corporate culture and managerial opportunism, one or more indicators had to be pulled out in order to get a better reliability of the scale (Cronbach's α should be above 0,7 for a non-exploratory analysis; cf. Nunnally 1978). In the case of motivation and delegation of discretion, our initial measures based on the literature (Mowday, Steers and Porter 1982, and Dewar, Whetten and Boje 1980, respectively) did not offer a first component that could explain more than 50% of the variance of the items used in the preliminary test of the survey, so we decided to stick to only one item. Thus, once the indicators were chosen for each construct and data was available, Principal Component Analysis was applied for corporate culture and managerial opportunism in order to get a single value. Table 2 shows the main figures.

XXXXXXXX *INSERT TABLE 2 ABOUT HERE* XXXXXXXX

Regarding the validity of the constructs, it is worth noting two issues. First, concerning their uni-dimensionality, we can see in Table 2 that the component that has been extracted can explain most of the variance of the items. Second, searching for the most sensible way to gather a representative collection of items for each latent variable, we resorted to a wide range of seminal contributions on the measurement of organizational traits as a first step to build the scales. The items used for corporate culture were initially extracted from Lawrence and Lorsch (1967), Pugh and Hickson (1976) and Kotter and Heskett's (1992). Although we did not use an explicit measurement scale on which to mould the construct of "managerial opportunism," the initial items have been definitely inspired by the insights and specific examples contained in such works as Willman (1983), Dow (1987), Rousseau (1989), Miller (1992), and Grimshaw and

[9] We considered this step crucial, even for those measures that have previously been tested. This is because the translation of scales from English to Spanish may change the perception of the respondent. Moreover, the items themselves may not make sense for cultural reasons.

Rubery (1998). Finally, and for strictly operational reasons (particularly to search for an easier interpretation of absolute figures), the latent variables were subsequently transformed to make them start with 1. The algorithm is:

1) yi* = –(minimum value of y) + 1 + yi

Finally, some of the variables referred to in the above hypotheses were not directly measured. This is the case for the "strength of managers' personal reputations" construct. We proxy this construct with the age of the firm variable, based on the argument that young firms have higher expected mortality, which implies that the value of a manager's reputation in such a firm is smaller than in an older firm with a lower expected mortality. Also, we did not directly measure the construct "informational distance in the corporate hierarchy" (H5c). We proxy this construct with the size variable, because it is reasonable to expect a positive relation between the size of a firm and the depth of its corporate hierarchy. Finally, the variable "degree to which employee interests are represented in corporate decision-making" (H5e) has been measured by the hierarchical form of the firm, which distinguishes between capitalist and worker-owned firms.

Empirical Results and Discussion

Table 3 shows the means, standard deviations and correlations for the variables. Two initial important insights have to do with the rather low level of delegation of discretion that we can find in our study, whereas managerial opportunism achieves a high figure in average terms. Moreover, both are negatively correlated. Regarding their association with other variables, a high delegation of discretion is strongly related to a strong corporate culture, workforce motivation and labor productivity. On the other hand, managerial opportunism appears to be associated with little human specificity involved in the labor transaction, lower motivation and socialization, and is especially relevant in SMEs and capitalist firms when compared to large corporations and worker owned enterprises, respectively.

XXXXXXXX *INSERT TABLE 3 ABOUT HERE* XXXXXXXX

Since the object of our investigation has to do with the *interaction* among managerial opportunism, motivation, and performance, we have developed a path analysis which, compared to conventional multivariate techniques, allows us to design a model with various

levels of dependency. Although probably far from being exhaustive in terms of including all potentially relevant independent variables, the model does seem to be the best one which our insights allowed us to construct prior to this research. Thus, our aim is not only to verify or refute each one of the above hypotheses separately, but also to test whether their interaction is statistically significant[10].

Path analysis assumes that relations among variables are linear, residuals from the regressions are not correlated among them and variables are measured without error (Bagozzi 1982; Bollen and Long 1993).[11] Given these assumptions and for the sake of simplicity, we can start by designing a diagram that reflects the relations of dependence among the variables that are included in our hypotheses. Next, we will convert this diagram into a system of simultaneous equations: this constitutes our structural model with the several path coefficients that we estimate here. Third, we evaluate the model so that the possibility to re-specify it and thus achieve a better goodness of fit is assessed.[12] Finally, we interpret and evaluate the final model.

Following this scheme, Figure 1 presents the path diagram with the relations that our propositions suggest. First, observe that the significant correlations among the exogenous variables shown in Table 3 have been represented in the diagram by the two-headed arrows. Note that these correlations are estimates of the population correlation matrix of the independent variables in the model; this is the reason why there are some slight differences between these figures presented in Figure 1 and the ones presented in Table 3. Anyhow, since no multicolinearity problems were identified, all correlations among the exogenous variables are maintained.

Concerning the endogenous variables and starting with opportunistic managerial

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[10] Construct building (managerial opportunism and corporate culture) could also be implemented in the same model. We chose to do it separately because 1) the results do not change and 2) the final model is thus made considerably simpler.

[11] On why motivation is treated as a continuous dependent variable see, for instance, Bohrnestedt and Borgatta (1981). Their argument, which we share, is that the consequences of assuming that data are interval when in fact they are ordinal are so small in most cases that the gain in statistical elegance and power justifies the possible distortion.

[12] There are dozens of measures of the goodness of fit (GF) for this kind of models, and they are generally grouped under three headings: Absolute GF, Incremental GF and Parsimonious GF (Bentler and Bonnet 1980; Bollen 1989; Bollen and Long 1993; Bagozzi 1982, 1991). The measures used here are the ones which appear to be more widespread in the empirical literature and in the specific software packages design for this tool (EQS, LISREL, AMOS, etc.). Moreover, following Hair et al. (1998), these measures have been chosen ex ante, i.e., before performing the estimation.

intervention, observe that, as suggested by hypothesis 5, it varies negatively with the level of expert knowledge involved in the labor transactions (H5d), the strength of corporate culture (H5b), the degree of unionization (H5f), and the size (H5c), age (H5a) and hierarchical form of the firm (H5e).

Next, consider motivation, and observe that the one-headed arrows represent its dependency on the level of delegation of discretion (H1) and the degree of managerial opportunism (H3). The latter here also acts as an independent variable, just as it happens also in the case of delegation of discretion, which is supposed to decline as managerial opportunism increases.

Additionally, hypotheses 2 and 4 propose that, despite the fact that firm performance obviously depends on many other variables, it will be affected by both the level of delegation of discretion and managerial opportunism.

Note, finally, that there are also two second order relations involving motivation and performance, on the one hand, and managerial opportunism and delegation of discretion, on the other. They do not explicitly appear in our set of hypotheses, mainly because these interactions have already been well established in previous literature; in the first case, for instance, in the such studies as McClelland (1955), Herzberg et al. (1959), and Vroom (1964), and in the more recent ones by Prokopenko (1987) or Frey and Osterloh (2002). Regarding the relation of managerial opportunism with delegation of discretion, the rationale is that, no matter how short termed decisions might be (for instance working overtime, changing shifts, assuming new tasks, etc.), delegating discretion restricts the ability of managers to go beyond the *ex ante* agreed "zone of acceptance" in the sense described by Simon (1951), Willman (1983), Dow (1987) and Kreps (1990). Therefore, delegation cannot be credibly sustained in firms where managerial opportunism is high. Thus, the initial structural model takes the following form:

$$
\left.
\begin{aligned}
&(1)\ \text{man\_opp} = \alpha_1 + \beta_{14}\,\text{hum\_spec} + \beta_{17}\,\text{socializ} + \beta_{18}\,\text{size} + \beta_{16}\,\text{age} + \beta_{15}\,\text{prop\_uni} + \beta_{13}\,\text{hf} + e_1 \\
&(2)\ \text{perform} = \alpha_2 + \beta_{22}\,\text{man\_opp} + \beta_{29}\,\text{motiv} + \beta_{21}\,\text{del\_disc} + e_2 \\
&(3)\ \text{motiv} = \alpha_3 + \beta_{32}\,\text{man\_opp} + \beta_{31}\,\text{del\_disc} + e_3 \\
&(4)\ \text{del\_disc} = \alpha_4 + \beta_{42}\,\text{man\_opp} + e_4
\end{aligned}
\right\}
$$

XXXXXXXX *INSERT FIGURE 1 ABOUT HERE* XXXXXXXX

The path coefficients of the former model are the main object of our estimation; they represent the beta weights obtained from a set of multiple regressions on the posited relationships within the model. In this case, given the absence of multivariate normality and the size of the sample, the method of estimation has been based on the Maximum Likelihood criterion with a bootstrap of 200 sub-samples.[13]

Results are shown in Table 4. The path coefficient reflecting the influence of corporate culture on managerial opportunism does not seem to be significant. The overall measures for the goodness of fit, on the other hand, reveal rather ambiguous values. Thus, although the GFI achieves a satisfactory figure (above 0.9), the rest of the measures are rather low (AGFI, TLI, NFI, PNFI and PGFI) or offer unacceptable values (Chi-square probability, RMSEA and AIC).

XXXXXXXX *INSERT TABLE 4 ABOUT HERE* XXXXXXXX

These considerations call for a reformulation of the model in order to achieve a better goodness of fit and check the possible influence that including non-significant variables in the model might exert on the rest of the path coefficients, which could eventually become non-significant or suffer important alterations. Hence, Figure 2 shows a new diagram in which corporate culture has been taken out, while the rest of the relationships have been retained in the way showed by our re-specified structural model:

$$\left.\begin{aligned}
&(1)\ \text{man_opp} = \alpha_1 + \beta_{14}\ \text{hum_spec} + \beta_{18}\ \text{size} + \beta_{16}\ \text{age} + \beta_{15}\ \text{prop_uni} + \beta_{13}\ \text{hf} + e_1 \\
&(2)\ \text{perform} = \alpha_2 + \beta_{22}\ \text{man_opp} + \beta_{29}\ \text{motiv} + \beta_{21}\ \text{del_disc} + e_2 \\
&(3)\ \text{motiv} = \alpha_3 + \beta_{32}\ \text{man_opp} + \beta_{31}\ \text{del_disc} + e_3 \\
&(4)\ \text{del_disc} = \alpha_4 + \beta_{42}\ \text{man_opp} + e_4
\end{aligned}\right\}$$

XXXXXXXX *INSERT FIGURE 2 ABOUT HERE* XXXXXXXX

Table 5 shows the new results. In effect, all of the estimators seem now to be significant and the fit of the model achieves more than acceptable values except for the Chi-

[13] A maximum likelihood estimation alone would require multivariate normality. In order to solve this problem (given that our data exhibits a high kurtosis), bootstrapping extracts several random sub-samples and calculates the mean of the estimators for each one of them. Other estimation methods –also valid- like generalized or unweighted least squares are less demanding in terms of parametric assumptions, while taking out the cases affecting the kurtosis would harm our sample representativeness.

square test (reflecting whether there exist significant differences between the observed and the reproduced covariance matrix). In this case, Bollen (1989) has nevertheless shown that the higher the size of the sample, the worse the goodness of fit (an ideal size would be between 100 and 200 cases). Since our sample contains 329 units, this might be the reason why the probability of the Chi-square is not significant; note that the rest of the measures, nonetheless, confirm that the model is significant.

With respect to the interpretation of the model, it appears that when compared to smaller, younger and capitalist firms, the level of opportunistic managerial intervention becomes lower in large corporations, older firms and cooperatives, respectively. Additonally, the propensity of managers to behave opportunistically seems also higher in firms with low specific human assets and with a low level of union affiliation. These findings confirm hypotheses 5a, 5c, 5d, 5e and 5f, which state a negative relation between opportunistic managerial intervention and, respectively, managers' personal reputations (proxied by age), the informational distance in the corporate hierarchy (proxied by size), the level of human capital specificity, the degree to which employee interests are represented in corporate decision-making (proxied by hierarchical form), and finally, the strength of unions and professional associations (proxied by union affiliation).

Moreover, the standardized coefficients convey information for assessing the relative influence that each one of the independent variables exerts on managerial opportunism. Thus, the hierarchical form of the firm seems to be the main mechanism that helps to avoid opportunistic intervention on the part of managers; that is, the higher the degree to which employee interests are represented in corporate decision-making, the more difficult it is for managers to implement oportunistic interventions. In fact, it is even more important than the bargaining power stemming from local and specific knowledge or from the strength of unions in the firm. The size or the age of the firm, in turn, although significant, apparently explain a lower percentage of the variance of the dependent variable.

XXXXXXXX *INSERT TABLE 5 ABOUT HERE* XXXXXXXX

Regarding motivation, on the other hand, the results show that (1) workers seem to be more motivated in firms with a higher delegation of discretion; (2) as the level of managerial opportunism increases workforce motivation clearly goes down; and (3) there is a significant indirect effect of managerial opportunistic intervention on motivation through delegation of

discretion. This evidence suggests that we cannot refute hypotheses 1 and 3 linking employee motivation to delegation of discretion and managerial opportunistic intervention.

With respect to firm performance, observe that Figure 2 and Table 5 reflect also two additional important facts: to begin with, they confirm Hypotheses 2 and 4 which suggest a direct influence of delegation of discretion and managerial opportunistic intervention on firm performance. And secondly, they verify the relevant indirect effects that, regarding workers' productivity, both managerial opportunism and delegation of discretion pose: thus, while the latter exerts an indirect effect through motivation (Hypothesis 1), the former does it not only through motivation (Hypothesis 3) but also through delegation of discretion itself (second order relation).

V. Concluding Discussion

In this final section, we sum up how we have contributed to existing theory, discuss limitations of the study and suggest implications for future research.

Contribution to Established Literature

Most firms make use of both authority and delegated discretion. However, the main point in this paper is that this gives rise to a latent conflict. The problem arises because "contracts" to delegate discretion are not enforceable in a court of law. Credible delegation may therefore be hard to sustain. However, we have pointed to and analyzed how various mechanisms may make delegation credible.

Although this set of issues are not neglected in the theory of the firm literature *per se* (e.g. Miller 1992; Aghion and Tirole 1997; Baker, Gibbons and Murphy 1999; Falaschetti 2002), it is still fair to say that they have been given relatively little attention in this body of work. One manifestation of this is that economics of organization analyses of "opportunism" has rather exclusively dealt with employee opportunism (Williamson 1996), employer opportunism being almost entirely neglected (cf. Dow 1987). To be sure, the basic idea that we have elaborated in this paper may be argued to be present already in Milgrom's (1988) argument that organizational form partly reflects an attempt to cope with employee rent-seeking and the inefficient selective intervention that may result from such rent-seeking. Also, a number of recent organizational economics contributions clearly go quite some way towards understanding the incentive liabilities of centralized authority (e.g., Milgrom and

Roberts 1996; Aghion and Tirole 1997; Baker, Gibbons and Murphy 1999). However, this remains an under-researched area in the economics of organization literature, particularly given the apparently high incidence of managerial opportunism (cf. Coyle-Shapiro and Kessler 2000).

In contrast to the organizational economics literature, much of the organizational behavior literature on psychological contracts, organizational citizenship behavior and the like is very strongly empirical. However, this literature does not explicitly frame the issues in rational choice terms. Still, this literature is considerably more detailed with respect to analyzing the actual contents of psychological (implicit) contracts between those who hold discretionary authority and those who do not and the psychological mechanisms that are at work in the case of perceived contract breach. We have mainly used this literature to provide support for some parts of our hypothesis development. However, we conjecture that the organizational behavior literature in this field and the relevant organizational economics literature may well enter a fruitful *liaison*.

Limitations

A number of inherent limitations of the dataset imply that our analysis is far from perfect. First, as in most studies, some of our proxies reflect a certain roughness derived from data availability and reliability. Since their validity has been justified on theoretical as well as on empirical grounds, nevertheless, we think that they reasonably represent and capture the theoretical constructs they proxy.

Second, the limitations of the data set have constrained our theoretical framework. For example, we argue that employee motivation positively depends on the degree of delegation. The link between delegation (or "task autonomy") and motivation has long been recognized in social psychology (e.g., Roethlisberger et al. 1939). It has also long been recognized that for delegation to be effective, employees need to have not only the opportunity but also the incentive and the ability to engage in self-management. We have argued that reductions in delegation, at least when these are perceived as reflecting managerial opportunism, lead employees to reduce effort and human capital investment. This *may* lead to a confusion of cause and effect. For example, it is conceivable that cutting back on delegation is a result of finding out that employees lack the skills that are necessary to engage in self-management.

Thirdly, more generally, much of our reasoning admittedly proceeds in dynamic terms — for example, we make references to breaking psychological contracts — that do not correspond directly to the measures that we use (e.g., we don't measure the incidence of broken contracts) and the cross-sectional nature of the study.

Implications for Future Research

Future research may well start from some of the above limitations. Thus, panel data need to be collected so as to better correspond to the dynamic nature of the argument. Also, it would be desirable if data allowed for cross-country comparisons. Otherwise, we cannot rule out the possibility of a country bias in our results.

Our study also suggests a number of avenues for further theoretical research. An obvious route is to formalize our verbal argument. More substantively, there are theoretical implications that await further development. One such implication is that the problem of reducing opportunistic managerial intervention may differ *systematically* across firms, depending on the details of their internal structure so that some organizational forms are systematically more heavily burdened with problems of opportunistic managerial intervention. Another implication is that the discussion in this paper relates to the classic issue of the determinants of the boundaries of the firm. Thus, a fundamental premise of the analysis in this paper is that in firms delegated decision rights are loaned, not owned (Baker, Gibbons, and Murphy 1999). Ultimate decision-making rights can only be transferred from bosses to subordinates by transferring ownership (i.e., creating a new firm). The problem of sustaining credible delegation stems from this basic difference in ownership. The analysis in this paper thus makes direct contact with those modern theories of economic organization (Hart 1995; Williamson 1996) that stresses the importance of ownership for understanding the boundaries of the firm. Finally, we have pointed to the desirability of more fully integrating organizational behavior perspectives on psychological contracts with organizational economics ideas, in order to get a fuller and more relevant understanding of the workings and implications of psychological and implicit contracts. Both fields stand to benefit from such an exercise (Gibbons 1999).

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TABLE 1

Description of the variables

	Denomination and abbreviation	Description
X_1	**Delegation of discretion (del_disc)**	Degree of delegation to adapt to eventual modifications on the production line that affect several work stations (five levels).
X_2	**Managerial opportunism (man_opp)**	Propensity of a principal to impose orders exceeding the previously agreed limits to other agents who do not have to be consulted. Construct built up with Principal Component Analysis (PCA).
X_3	**Hierarchical form (hf)**	Two values: 1 for capitalist firms and 2 for worker owned enterprises (most of the latter belong to the Mondragon co-operative).
X_4	**Human specificity (hum_spec)**	Difference between the time that a new worker with no experience in the industry spends until she reaches the normal productivity of her mates, and the time that a new worker who does have experience in the industry spends until she reaches that normal productivity (five levels).
X_5	**Propensity to unionize (prop_uni)**	Percentage of unionized workers within the firm.
X_6	**Age (age)**	Three values: 1 for firms that have been in existence for 10 years or less; 2 for firms between 11 and 30 years, and 3 for firms with more than 31 years.
X_7	**Corporate culture (socializ)**	Extent to which certain norms and values are widely shared and intensely held throughout the organization. Construct built up with PCA.
X_8	**Size (size)**	Two values: 1 for SMEs with less than 100 operators; 2 for the rest.
X_9	**Motivation (motiv)**	Degree to which workers' commitment encourages them to do their best (five point Likert-type scale).
X_{10}	**Performance (perform)**	Value added divided by number of operators

TABLE 2

Summary of items retained in each construct built up with Principal Component Analysis

Var	Items in the variable	Factor loading	KMO index	Variance explained	Cronbach's α
Managerial opportunism	Please indicate to what extent you agree with the following statements (1 being "strongly disagree" and 5 "strongly agree"): 1.-If we paid overtime strictly, the firm would not be sustainable 2.-Some operators cannot always use up their holidays because of production needs 3.-Flexibility and cost-saving requirements foster the use of short-term contracts even for long term employment relationships 4.-Operators believe that managers press them excessively	 ,849 ,782 ,684 ,704	,72	57,37 %	,74
Corporate culture	Please, indicate to what extent you agree with the following statements (1 being "strongly disagree" and 5 "strongly agree"): 1.-Our operators know the history of the firm and its most important achievements 2.-Our workers are acquainted with the firm's short- and long-term objectives 3.-Working in our firm makes our workers experience a sense of pride	 ,883 ,884 ,889	,72	76,06 %	,84

TABLE 3
Descriptive statistics and correlations

	Min.	Max.	Mean	St. dev.	1	2	3	4	5	6	7	8	9	10
1 del_disc	1	5	1,81	1,15	1									
2 man_opp	1	5,35	3,46	1	-,24***	1								
3 hf	1	2	--	--	,19***	-,44***	1							
4 hum_spec	1	5	2,48	,972	,16***	-,36***	,020	1						
5 prop_uni	0	100	31,89	26,44	,075	-,127**	-,42***	,076	1					
6 age	1	3	2,06	,69	,048	-,22***	-,1*	,062	,43***	1				
7 socializ	1	5,54	3,56	1	,51***	-,26***	,38***	,26***	-,139**	-,088	1			
8 size	1	2	--	--	,081	-,26***	-,042	,029	,23***	,31***	-,001	1		
9 motiv	1	4	2,35	,925	,37***	-,41***	,37***	,24***	-,11**	-,017	,73***	-,02	1	
10 perform	-10,6	98,9	11,2	10,45	,26***	-,33***	,31***	,264***	-,09*	-,034	,42***	,071	,51***	1

[a] Pearson correlations for pairs of continuous variables and Spearman correlations when one or the two of them are ordinal or categorical.
* Significant at 10% level
** Significant at 5% level
*** Significant at 1% level

Figure 1
Model 1 diagram with standardized estimates

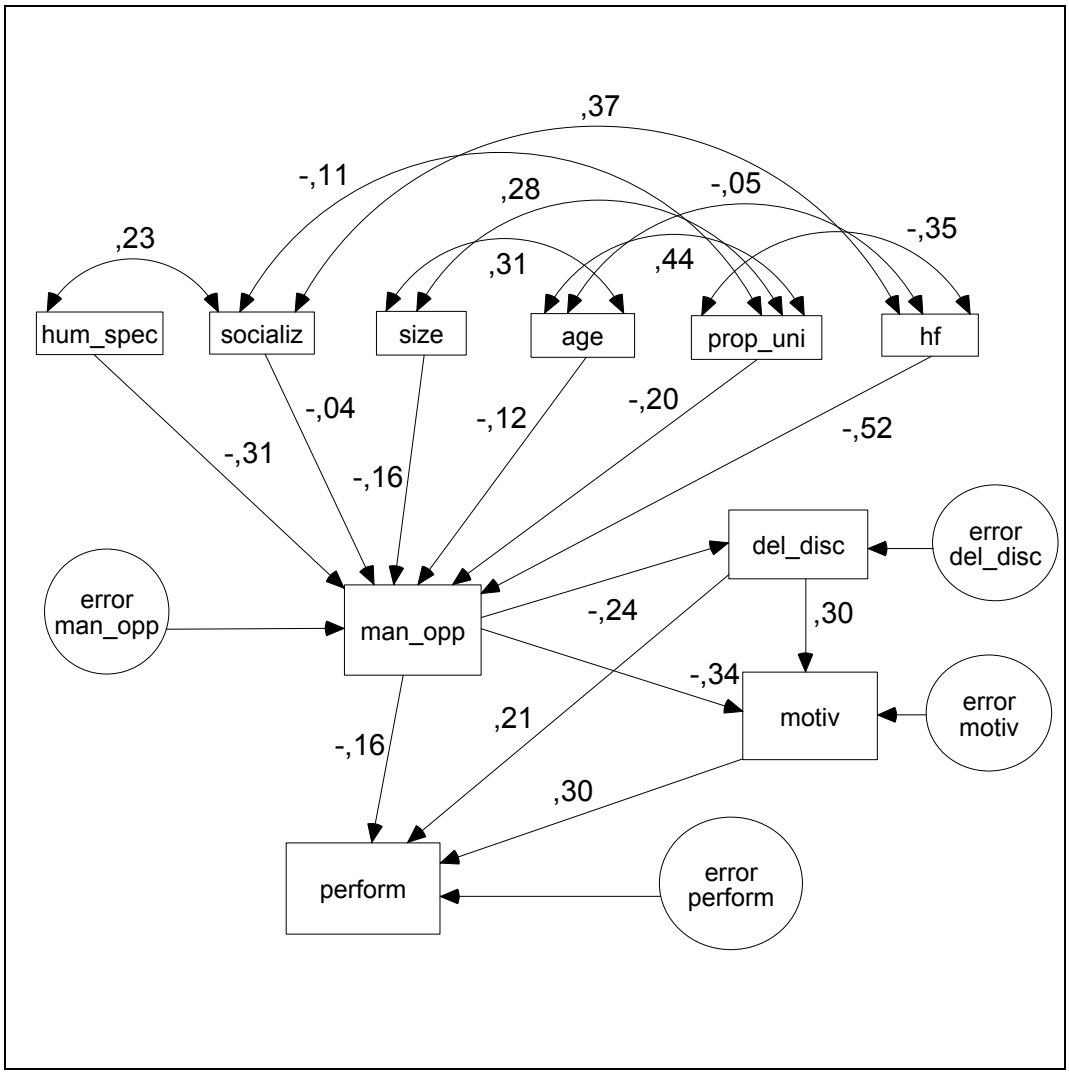

Figure 2
Model 2 diagram with standardized estimates

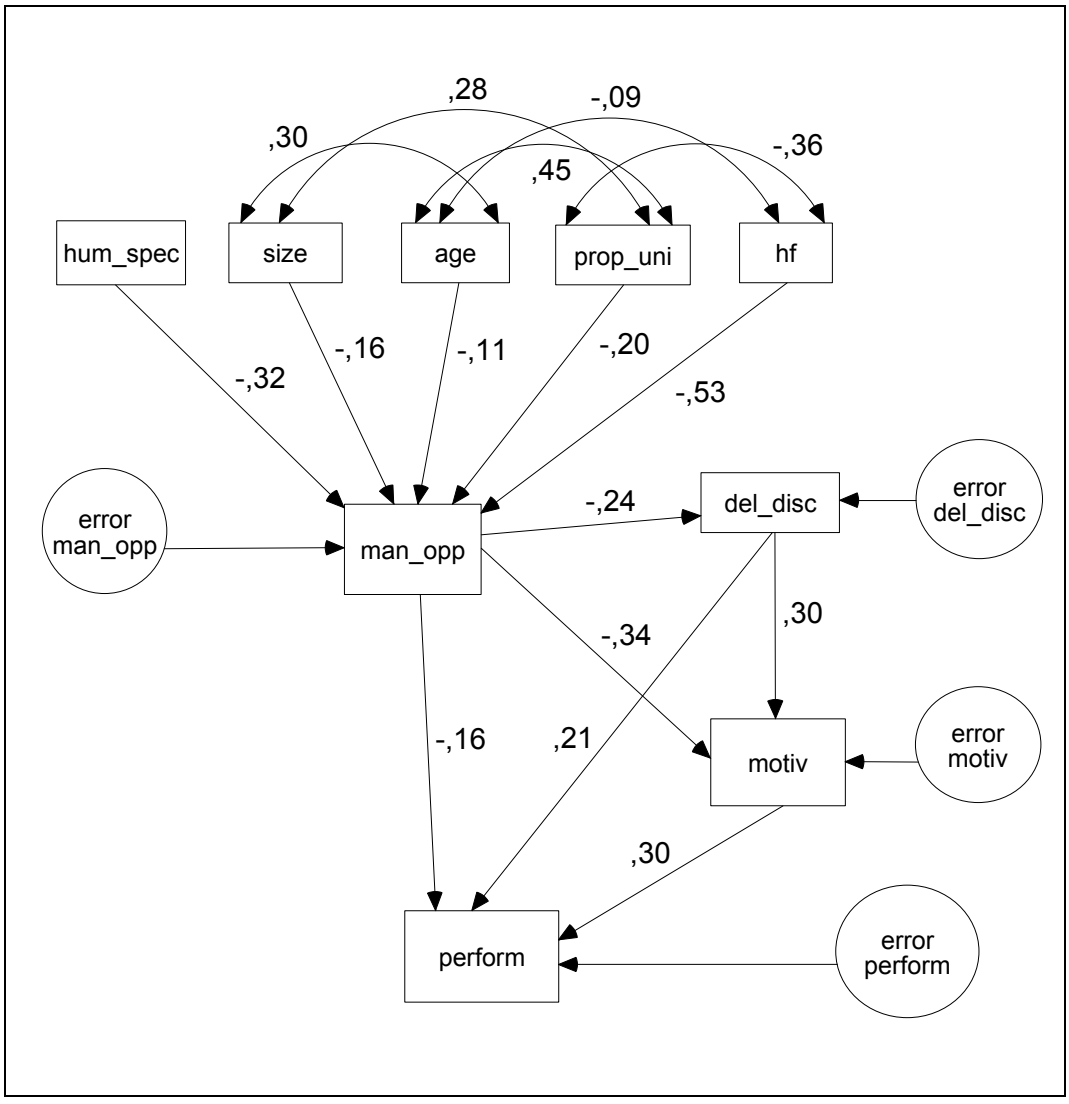

TABLE 4
Maximum Likelihood Estimation for Model 1

dep var./indep. var.	Standardized coefficients	Non standard. coefficients	Standard error	t value
man_opp/socializ	-0,035	-0,035	0,046	-0,760
man_opp/size	-0,160	-0,367	0,102	-3,592
man_opp/age	-0,115	-0,164	0,068	-2,416
man_opp/hf	-0,517	-1,644	0,153	-10,739
man_opp/hum_spec	-0,312	-0,318	0,044	-7,263
man_opp/prop_uni	-0,200	-0,008	0,002	-3,938
del_disc/man_opp	-0,238	-0,277	0,062	-4,445
motiv/man_opp	-0,341	-0,341	0,049	-6,938
motiv/del_disc	0,298	0,257	0,042	6,077
perform/motiv	0,297	3,756	0,695	5,401
perform/del_disc	0,211	2,298	0,562	4,092
perform/man_opp	-0,158	-1,994	0,662	-3,010

ABSOLUTE GOODNES OF FIT
Chi-square = 304,171 / Probability level = 0,000
Goodness of Fit (GFI) = 0,883
Root Mean Square Error of Approximation (RMSEA) = 0,185

INCREMENTAL GOODNES OF FIT
Adjusted Goodness of Fit Index (AGFI) = 0,744
Tucker Lewis Index (TLI) = 0,444
Normed Fit Index (NFI) = 0,679

PARSIMONIOUS GOODNES OF FIT
Akaike Information Criterion (AIC) = 364,171
Parsimonious Normed Fit Index (PNFI) = 0,377
Parsimonious Goodness of Fit Index (PGFI) = 0,402

TABLE 5
Maximum Likelihood Estimation for Model 2

dep var./indep. var.	Standardized coefficients	Non standard. coefficients	Standard error	t value
man_opp/size	-0.161	-0,368	0,102	-3,596
man_opp/age	-0.113	-0,159	0,068	-2,347
man_opp/hf	-0.533	-1,686	0,143	-11,802
man_opp/hum_spec	-0.321	-0,326	0,042	-7,689
man_opp/prop_uni	-0.202	-0,008	0,002	-3,947
del_disc/man_opp		-0,277	0,063	-4,428
motiv/man_opp	-0.342	-0,341	0,049	-6,913
motiv/del_disc	0.3	0,257	0,042	6,077
perform/man_opp	-0.158	-1,994	0,665	-3,001
perform/motiv	0.297	3,756	0,695	5,401
perform/del_disc	0.212	2,298	0,562	4,092

ABSOLUTE GOODNES OF FIT
Chi-square = 52,735 / Probability level = 0,00
Goodness of Fit (GFI) = 0,967
Root Mean Square Error of Approximation (RMSEA) = 0,071

INCREMENTAL GOODNES OF FIT
Adjusted Goodness of Fit Index (AGFI) = 0,927
Tucker Lewis Index (TLI) = 0,900
Normed Fit Index (NFI) = 0,916

PARSIMONIOUS GOODNES OF FIT
Akaike Information Criterion (AIC) = 102,735
Parsimonious Normed Fit Index (PNFI) = 0,509
Parsimonious Goodness of Fit Index (PGFI) = 0,430