**Mission Congruence, Incentives and Autonomy: An Empirical Analysis of Child-Care Facilities in Minnesota, the U.S. [[1]](#footnote-1)Ω**

**Marco A. Barrenechea-Méndez**

Universitat Autònoma de Barcelona

**Avner Ben-Ner**

University of Minnesota

**Abstract**

This paper provides evidence on the role of mission congruence on teachers’ pay-for-performance and delegation of decision-making decisions using a dataset of child-care facilities in Minnesota, the United States. We find the teachers’ pay-for-performance is negatively related to mission congruence. Also, we find that teachers’ autonomy is positively related to mission congruence. These results support the idea that the identity of workers plays an important role in the design of the organization. In addition, as in previous empirical studies, we found that pay-for-performance and autonomy are interrelated decisions.

Keywords: Mission congruence, pay-for-performance, autonomy.

JEL classification: D21, D23, D81, D82, J33, M52, M54

1. **Introduction**

Based on a dataset of child-care facilities in Minnesota, United States, this paper provides empirical evidence on the effects of mission congruence on teachers´ pay for performance and autonomy decisions. The concept of mission congruence refers to the extent at which the objective of a worker is aligned to the one of the organization. In the last few years a growing theoretical literature (Akerlof and Kranton 2005, Besley and Ghatak 2005, Prendergast 2008, Van den Steen 2010, Aghion and Tirole 1997, Dessein 2002) has arose concerned in analysing the role of the degree of employers-employees mission congruence on the organizational design. However, despite this growing theoretical interest, empirical evidence is generally scant.

The economic analysis of the organization relies on the assumption that workers preferences are in conflict with those of the organization. Under this assumption, for instance, firms must offer incentives to make workers to exert productive effort and centralize decisions to preclude workers to select unproductive activities. Nonetheless, this is not always the case. In many circumstances, workers could exert productive effort or select the most productive activities just because they agree with the organization’s objectives (Aghion and Tirole 1997, Dessein 2002, Akerlof and Kranton 2005, Besley and Ghatak 2005, Prendergast 2008, Van den Steen 2010). As an instance, a child care facility teachers may work hard or select the best teaching program just because she believes in the mission of the organization.

Recognition of this fact will have dramatic consequences on the organizational design (Akerlof and Kranton 2005, Ben-Ner 2008). The theoretical literature provides some efforts to model the effect of mission congruence on incentives and delegation of decision-making. For this literature, a less dissonance between organizations’ and employees’ objectives reduces the cost of exerting productive effort and permits organizations to economize on monetary incentives (Akerlof and Kranton 2005, Besley and Ghatak 2005, Prendergast 2008, Van den Steen 2010). Also, mission congruence allows principals to trust agents’ decisions encouraging the granting of autonomy (Aghion and Tirole 1997, Dessein 2002, Van den Steen 2010). In short, we will expect that workers who share the mission of the organization will receive less incentive pay and more delegation of decision-making than workers who do not.

As far as us aware, the first prediction, a negative association between pay-for-performance and mission congruence, has never been tested. On the other hand, empirical evidence on the second hypothesis, a negative association between delegation of decision-making and mission congruence, is scant. In this paper, we attempt to fill this gap. Relying on dataset of 206 child care facilities in Minnesota, the U.S., we provide empirical evidence for these hypotheses.

We find that the provision of pay-for-performance is negatively associated to mission congruence. Child-care facilities economize on the provision of monetary incentives in teachers who believe on the mission of the organization. We also find that the provision of autonomy is positively associated to mission congruence. Teachers who believes in the mission of the organization has more discretion to take decisions than teachers who do no.

As by product, with a unique dataset and specification, this paper provides empirical evidence supporting a positive association between pay for performance and autonomy. The interrelated nature of these decisions seems to be a stylized fact (MacLeod and Parent 1999, Nagar 2002, Abernethy et al. 2004, Foss and Laursen 2005, Moers 2006, Wulf 2007, Ben-Ner, Kong and Lluis 2011, Devaro and Kurtulos 2010, Itoh, Kikutani and Hayashida 2008).

The rest of the paper is organized as follows. In section two we review the relevant literature and state the hypothesis to be tested. Section three presents a description of the sample data and the measures to be used in the estimations as well as the econometric approach. Section four shows the results. Section five deals with the implications of the results and section six concludes.

1. **THEORETICAL BACKGROUND**

**2.1 Mission Congruence**

Mission congruence refers to the extent at which the objective of a worker is aligned to the one of the organization. This construct captures the idea that individuals have different objectives, and thus some of them could share, at different intensities, the objectives of the organizations for which they work. In standard economic theory, utility depends only on pecuniary variables. It ignores that some workers have non-economic motives so that they have the same goals of the organization (Akerlof and Kranton 2005).

The non-economics motives of the workers have been addressed in the literature from several points of views. In one of them, it is stressed that individuals exhibit, besides self-interests, values such as altruism, honesty, reciprocity, trusting, trustworthiness, truth-telling and fairness (Ben-Ner 2010, Ting Ren 2010). Then, the congruence of objectives follows from that dispositional dimension of human behavior. In concrete, people who tend to exhibit more values tend to be more aligned to the organizational objectives. Another point of view, stresses the idea that employers and employees can be either profit-oriented or mission-oriented (Besley and Ghatak). For instance, they could be strict profit-maximizer or be oriented to the provision of collective goods. Some employers and employees of a society can be mission oriented because they perceive intrinsic benefits from doing so. The congruence of objectives is achieved when a mission-oriented agent match a mission-oriented principal. Most of the literature (Akerlof and Kranton 2005, Prendergast 2008, Bénobou and Tirole 2003, Aghion and Tirole 1997, Dessein 2002) relies on the idea that in some cases there is a coincidence of the objectives of the agents and the principal, without specifying the type of preferences of the workers or organizations. Last, the concept of mission congruence has been also been defined as differences in beliefs instead of as differences in objectives (Van den Steen 2010). The idea is that both firms and workers care about the success of the firm but may openly disagree on the best course of action. From a practical point of view both definitions are equivalent. Shared beliefs reduce the difference in objectives.

The theoretical construct of mission congruence is not concern about the motives that lead the agents to behave in agreement with the objectives of the organization. It only tries to capture the extent at which both the objectives of the worker and the objectives of the firm are aligned. The implications of the degree of mission congruence on the organizational design are analyzed in each of the particular theoretical models that we review below.

**2.2 Main hypotheses**

The traditional analysis of the organizational design relies on the assumption that workers’ preferences are in conflict with those of the organization. This is exemplified in the agency model (Holmström 1979), where there exists a tension between principals and agents regarding the optimal level of effort to be exerted. Firms would like that workers work hard, while workers would like to exert a low level of effort. The same is true in models of delegation of decision-making (see Prendergast 2002). In this case, firms would prefer that workers select the activities that maximize their benefits, while workers will prefer to select the activities or projects that maximize their own utility. Under this assumption, for example, firms must offer incentives to make workers exert productive effort or centralize decisions on the selection of the activities to be carried out. Implicit is the idea that workers do not share the objectives or the mission of the organization.

However, although standing as an important departing point for the understanding of the organizational design, this approach ignores that sometimes workers care about what they do (Prendergast 2008). Some workers may derive utility from the organizations´ mission´s success. This is likely, for instance, in the social work (Prendergast 2008), army (Akerlof and Kranton 2005), or non-profit sector (Besley and Ghatak 2005) contexts.

Different assumptions about the extent at which workers share the mission of the organization (mission congruence), or in other words about the degree of disparity between the preferences of the organization and workers regarding effort exertion and activities selection, will have important effects on the structure of the organization (Akerlof and Kranton 2005, Ben-Ner 2008). For instance, we will expect that workers who share the mission of the organization will receive lesser monetary incentives and more discretion (without need of monetary incentives) than workers who do not.

In the last few years, several theoretical works have appeared that take into consideration the effect of mission congruence on (particular variables of) the organizational design (Akerlof and Kranton 2005, Besley and Ghatak 2005, Prendergast 2008, Van den Steen 2010, Bénobou and Tirole 2003, Aghion and Tirole 1997, Dessein 2002).

**2.2.1 Incentives and Mission Congruence**

For most of this literature (Akerlof and Kranton 2005, Besley and Ghatak 2005, Prendergast 2008, Van den Steen 2010) mission congruence can operate as a substitute for monetary incentives. Workers who share the objectives of the firm require less incentive pay to motivate effort. The common underlying idea of these models is that mission congruence provides intrinsic motivation. The desire of the workers to perform an activity because of inherent enjoyment of the activity (Baron and Kreps 1999) reduces the cost of exerting effort and therefore economizes on the need to provide explicit monetary incentives. Recent economic literature provides efforts to model this assertion.

Akerlof and Kranton (2005) suggest that some employees may have identities that lead them to behave in concert with the goals of the organization. Those workers identify with the firm or, in other words, they are insiders. The norm of an insider is to act in the interest of the firm and therefore do the high effort. Workers with such identities lose utility by deviating from norms of high effort. Thus, for those workers, firms can reduce the wage differential needed to induce the worker to take the high effort action. This paper also speculates about the possibility that motivation by identity and monetary incentives will be complements rather than substitutes. Given that identity reduces the employees cost of effort, firms may find optimal to elicit yet more effort.

Besley and Gathak (2005) classify organizations as either mission or profit-oriented. They define mission as the attributes of a project that make some principals and agents value the success of the project over and above any monetary income they get in the process. The attributes of the project may refer to the organizations´ business approach, e.g. if it is commercial or charitable, and are exogenously associated with a particular principal. Some organizations in the economy give more importance to the mission motive than to the profit motive. Payoffs of the projects’ success for those principals include a non-pecuniary component. Moreover, some agents also care about the mission of the organization for which they work. The idea of the model is that they get a non-pecuniary benefit from project success when they are matched with similar minded principals. In the optimum, those agents receive lower incentive pay.

Prendergast (2008) studies the change in the firm’s hiring preferences upon changes in contractibility of performance measures. He predicts that in absence of perfectly contractible performance measures, organizations will hire agents disproportionately motivated to carry out a subset of activities the firm cares about. In other words, the firm will hire workers with preferences over some actions of particular interest for the firm. A firm can economize on the provision of monetary incentives by hiring such workers.

Van den Steen (2010) studies the role of differences in beliefs in the provision of monetary incentives. He suggests that when the members of an organization openly disagree on the right course of action, then at least some members will feel that the organization goes down the wrong path. This lowers their expected utility from being part of the organization and will lower their motivation because they will feel that their effort is spent on the wrong project. Implementation effort increases as beliefs of manager and employee are more similar. This result is straightforwardly translated to the case of mission congruence. Implementation effort will be higher in organizations with more homogeneous preferences or values.

Hypothesis 1: Monetary incentives are negatively related to Mission congruence.

As far as we know there is not empirical work on the relationship between monetary incentives and mission congruence.

The literature, however, has devoted a lot of effort to provide empirical evidence on the “crowing out” effect (Frey 1997). That is, if the subjects´ intrinsic motivation is destroyed when explicit monetary incentives are provided (Etzioni 1971, Kruglanski 1978, Deci and Ryan 1985, Baron and Kreps 1999; see Bénobou and Tirole 2003 for an effort to formalize this effect). This negative effect of monetary incentives on intrinsic motivation has been largely documented in the experimental literature in the students’ context (Kruglanski, Friedman and Zeevi 1971, Lepper, Greene and Nisbett 1973, Deci 1975, Wilson, Hull and Johnson 1981, Deci, Koestner and Ryan 1999). However, this evidence is not conclusive (see Gneezy and Rustichini (2000) for a discussion).

**2.2.2 Delegation of Decision-making and Mission Alignment**

Another variable of the organizational design that has captured the attention of this literature is the delegation of decision-making. Overall, this literature (Aghion and Tirole 1997, Dessein 2002, Van den Steen 2010) predicts that the congruence between the principals’ and the agents’ objectives has a positive impact on the delegation of decision-making.

Delegation of decision-making arises when the relevant information to take decisions regarding how to carry out a job (i.e., which are the projects or activities that should be implemented) is disperse along the organization (Melumad and Reichelstein 1987, Aghion and Tirole 1997, Prendergast 2002, Dessein 2002). However, the management could hesitate to delegate decision-making to workers if their objectives are not aligned to that of the organization. On the contrary, when there is less discrepancy of interests, employers are more likely to see employees as more reliable and trustworthy to pursue the interests of the organization (Ben-Ner 2008, Ting Ren 2010) by selecting the most appropriate projects and are more likely to delegate decision-making.

Aghion and Tirole (1997) shows that managers delegate more when the objectives of the workers are more aligned to those of the firms. The idea of this model is that workers have private benefits over course of actions or projects. Then, the firms will delegate more whenever their profits are positively linked to the private benefits of the agent. That is, whenever the principal can trust the agent. This is likely in those cases in which firms´ and workers´ objectives are more similar.

Dessein (2002) shows that an uninformed principal may delegate decision-making to a better informed agent to avoid the noisy communication, and hence the loss of relevant information, which stems from the objectives dissonance between them. In this model, more mission congruence enhances both delegation of decision-making and better communication. However, delegation dominates communication. Delegation of decision-making is a better instrument to use the local knowledge of the agent than communication.

Van den Steen (2010) shows that managers will delegate more if the employees´ beliefs are sufficiently similar to her own. The intuition for this result is that as the manager and employee have more different beliefs, the employee is more likely to make the wrong choice from the manager’s perspective. Belief differences thus give the manager more reason to keep control by not delegating. As in the case of effort, this result is straightforwardly translated to the case of mission congruence. More granting of autonomy will be observed in organizations with more homogeneous preferences or values.

Hypothesis 2: Delegation of Decision-makingis positively related to Mission congruence.

To the best of our knowledge, empirical evidence on the positive association between mission congruence and delegation of decision-making is restricted to Ting Ren (2010). With a sample of 91 nursing homes in Minnesota, the U.S., he finds a positive effect of firms-workers mission congruence on the “employees’ participation in any employee involvement program.” However, he fails to find a positive association when a more direct measure for delegation of decision-making is used, namely, the degree of control over how their work is done. Campbell (2010) analyses a related hypothesis using data from a credit-union in the U.S. He finds that employees aligned via selection are more likely to use their decision-making authority in the granting and structuring of consumer loans than those who are not. The emphasis of this work is on workers´ reaction. The effect on firms’ decentralization decisions of changes in hiring practices is not analyzed.

* 1. **Other Considerations**

**2.3.1 Incentives and Delegation of decision making**

The theoretical economics and management literature has devoted a lot of effort for understanding the relation between the provision of incentives and delegation of decision-making (Melumad and Reichelstein 1987, Melumad et al. 1992, Jensen and Meckling 1992, Holmström and Milgrom 1994, Prendergast 2002, Baiman and Rajan 1995, Bushman et al. 2000, Baldenious 2003). Overall, this literature predicts that both variables of the organizational design should be positively correlated.

The idea is that when organizations delegate decision-making they create a room for workers to choose the activity or project they like the most instead of the activity or project with the highest productivity. Then, the constraining of misbehaviour by the part of the workers created by the delegation of decision-making implies that firms offer incentives (Prendergast 2002). Moreover, when organizations decide to delegate decision-making, effort exertion within a task is more difficult to monitor (Ben-Ner et al. 2010). That is, delegation of decision-making also fosters the asymmetric information problem analysed in the standard agency model (Holmström 1979, Shavell 1979, Holmström and Milgrom 1987, 1991).

The prominent role of incentives is to prevent both the selection of a suboptimal project (in terms of productivity), and therefore the encouraging of delegation of decision-making, as well as a suboptimal level of effort. The idea that the possible misbehaviours created by delegation of decision-making needs to be constrained via the provision of incentives seems to be a stylised fact (MacLeod and Parent 1999, Nagar 2002, Abernethy et al. 2004, Widener et al. 2004, Foss and Laursen 2005, Moers 2006, Wulf 2007, Itoh et al. 2008, Gibbs et al. 2009, Devaro and Kurtulos 2010, Ben-Ner, Kong and Lluis 2011).

**2.3.2 Control Variables**

For testing the hypotheses above, it is necessary to control for specific characteristics of the business units or the environment where they operate that could determine the use of the variables of the organizational design analyzed in this article, incentives and delegation of decision making. In concrete, we control by the size of the business unit, the number of business units belonging to the same parent organization, the age of the organization, the degree of task complexity, the degree of skill demanded by the tasks, and the legal status of the organization.

The inclusion of a variable related to the size of the business unit is standard in the empirical literature for its effects on all organization design choices (Nagar 2002). In fact, this variable has been considered in every empirical analysis where the relationship between delegation of decision-making and incentives has been analyzed (Adams 2002, Nagar 2002, Shi 2005, Foss and Laursen 2005, Devaro and Kurtulos 2010, Ben-Ner et al. 2011). Overall, we will expect that larger units, in which supervision is more difficult, have larger asymmetry information problems than smaller firms. Then, we would observe less delegation of decision making and more incentives. However, we do not provide empirical prediction for this variable because some other arguments provided by the literature leads to ambiguous conclusions. For instance, smaller establishments could be more agile (e.g. flatter hierarchies) and more likely to adopt human resources innovations than large establishments (Osterman 1994).

We also control for the number of business units belonging to the same parent organization (Foss and Laursen 2005) because the decisions related to organizational design could be made by the headquarter instead of by the child-care facility. So, despite establishments that are part of larger organizations may receive greater resources, information and technical assistance for implementation of innovative organizational practices (Osterman 1994), we consider the expected sign of this variable as an empirical question.

In addition, we control by the years of the organization in business since establishment (Shi 2005, Ortega 2009, Ben-Ner 2011), because the number of years could be an indicator of the difficulty to develop particular organizational practices (Lafontaine 1992). Also, the epoch when the organization was founded is important in that cultural attitudes about appropriate policies get set into place. For instance, this is exemplified by the tendency of recently formed firms to provide autonomy (Osterman 1994).

Delegation of decision-making arises when relevant information to take decisions regarding how to perform optimally a task by choosing the right activity or project is in hands of the workers (Melumad and Reichelstein 1987, Aghion and Tirole 1997, Prendergast 2002, Dessein 2002)[[2]](#footnote-2). For empirical implementation, some authors (Prendergast 2002, Raith 2008, Ben-Ner et al. 2011) suggest that the amount of the agent’s local private knowledge is closely related to the degree of complexity of the tasks that workers have to perform[[3]](#footnote-3). When the production process is simple, there is not much room for differences between the workers and supervisors to identify the best course of action for a given task. But when the task is complex, the worker, who is closer to the production process, is in a better position than the supervisor to determine how a task should be done. So, job complexity can be interpreted as a measure of the agents’ informative advantage (Ortega 2009, Ben-Ner et al. 2010) and a positive relationship of this measure with delegation of decision-making is expected. Recent empirical studies provide support for the positive relationship between the delegation of decision-making and measures of job complexity (Ortega 2009, Gibbs, Levenson and Zoghy 2010, Ben-Ner, Kong and Lluis 2010) or other measures intended to capture the principal-agents’ asymmetric information (Baiman, Larker and Rajan 1995, Colombo and Delmastro 2004).

Some other authors argue that the agents´ informative advantage (Zabojnik 1996, Prendergast 2000, 2002, Adams 2002, Baker and Jorgensen 2003, Shi 2005, Raith 2008) could have positive effects on the provision of incentives. The idea is that firms can take advantage of the workers´ local private knowledge by increasing the strength of incentives. The empirical literature provides some efforts (Baiman, Larker and Rajan 1995, Ortega 2009, Ben-Nert et all. 2011) to test this prediction.

The degree of skill demanded by the tasks could also have important effects on delegation of decision making. We expect that task that are more difficult to perform will be more delegated. Also, we expect that a highly skilled task could have negative effects on the provision of incentives because it affects negatively the marginal productivity of effort and could add risk to the relationship (Holmström and Milgrom 1991).

Last, the legal status of the organization, namely, if it is a for-profit, non-profit, or local government organization, could have effects on the severity of the agency problems of the organization (Clarkson 1972, Brody 1996, Steinberg 2008, Ben-Ner and Ting Ren 2010). In for-profit organizations principals are equity owners who maximize returns on their investment, in non-profit organizations principals are members of boards of directors who have fiduciary duties towards the organization but are not required to pursue specific goals, and in government organizations principals are the constituents who exercise their rights through elected officials, i.e., citizens with no enforceable property rights, (Ben-Ner and Ting Ren 2010). For-profit organizations are more likely to take advantage of the residual asymmetric information to their clients and to be more efficient in the use of resources than other forms of corporate government. Thus, we expect this type of organizations will be more motivated to direct their agents to act in profit-maximizing ways. We should observe a larger use of incentive mechanisms such as performance pay. This assertion is supported by the empirical literature (Ballou and Weisbrod 2002, Bertrand, Hallock and Arnould 2003).

1. **METHODS**
   1. **Data description**

The data for testing the hypotheses is drawn from the structure and performance in the human services industry in Minnesota survey applied to child-care institutions. We believe this is a suitable setup to carry out the analysis. Children-liking must be an important motivational element of teachers in child care facilities. Also, the use of subjective assessments by the interviewee on various scales to get information on the theoretical concepts above examined is a common practice in the related empirical literature (Adams 2002, Foss and Laursen 2005, Wulf 2005, Nagar 2005, Shi 2005, Ortega 2009, Devaro and Kurtulos 2010, Ting Ren 2010, Ben-Ner, Kong and Lluis 2011). This approach allows the possibility of getting information on some concepts even if more objective information is not available.

The survey was administered in summer 2006 to all child-care facilities existing at that time. So, we expect no sampling selection bias problems. The survey was addressed to child-care facilities’ directors and requested detailed information on human resources and work organization practices for teachers as well as information on general characteristics of the facilities and/or parent organizations. We got 504 responses. Because some questionnaires were incomplete, we ended up with 206 observations.

A similar database has been used previously for the study of the impact of mission alignment on delegation of decision-making and supervision by Ting Ren (2010). This study uses a sample of 91 nursing home administrators in Minnesota, also drawn from the structure and performance in the human services industry in Minnesota survey.

* 1. **Measures**

**Dependent variables**

*Pay-for-performance* (*p*)

The question related to the provision of incentives asks the interviewer if the teachers receive any form of incentive pay or bonus. The answer is presented in a dichotomized way. Based on this question we create the variable *Pay-for-performance*, which take the value of zero if incentives are not provided and 1, otherwise. The distribution of child-care facilities for teachers for the two categories is 74.76 and 25.24 percent, respectively.

*Autonomy* (*a*)

The question that explores our measure of delegation of decision-making asks the interviewee to evaluate the degree of control that teachers have over how their work is done. The answer ranks in a five-point scale, where 1 means “not at all,” 2 means “small,” 3 means “moderate,” 4 means “large” and 5 means “extreme.” The distribution of the child-care facilities for teachers for the five categories is 0, 0.49, 10.68, 51.46, and 37.38 percent, respectively. Based on this information we create the 4-categories ordinal variable *Autonomy*.

**Independent variables**

*Mission congruence* (*m*)

The concept of mission congruence is measured through a question that asks the interviewer if teachers believe in the mission of the organization. The answer ranks in a Likert scale from 1 to 5, where 1 means that the interviewee strongly disagree with the statement, 2 that she disagrees, 3 that she neither agrees nor disagrees, 4 that she agrees and 5 that she strongly agrees. The distribution of plants for the five categories for teachers is 2.91, 0, 2.43, 26.21 and 68.45 percent, respectively.

Like in this case, many of the independent variables used in the empirical part have been measured by Likert scales from 1 to 5. These values are ordinal, so these variables are not cardinal, consequently the proper use of the information available for each variable implies including four dummies in the regression. Some of the categories, in most of the variables, have very few observations, causing collinearity in the estimations. In order to avoid such problems, and for the sake of expositional simplicity, we will opt to use only one dummy variable for each independent variable. This implies the selection of a category cut off. Some studies (e.g. Foss and Laursen 2005) opt to use the original middle category (value 3 in our case) as the category cut off. This procedure assumes that the meaning of the categories of the Likert scales is the same for all the variables. The application of this procedure in our data provides highly skewed distributions of some variables. This fact casts some doubts on the assumption that all the variables follow the same distribution. Then, we follow an alternative procedure used in the literature (e.g. Devaro and Kurtulus 2010), which is some kind of standardization. The cut off is the category closest to represent the median of the variable. So in all the cases we proceeded to group the adjacent original categories to finally obtain two categories with the most egalitarian distribution possible of observations. A challenge appears when the original middle category (value 3) concentrated more than 50 percent of the observations. In these cases we consider three categories (two dummy variables) but only if each resulting category had at least the 10 percent of the observations. Applying this general procedure to this distribution, we gather together categories 1 to 4 and create the dummy variable *Mission congruence*, whose value of zero (former categories 1 to 4) is interpreted as the existence of weak mission congruence and one (former category 5) as the existence of strong mission congruence.

In this case, we gather together categories 1 to 4 and create the dummy variable *Mission congruence*, whose value of zero (former categories 1 to 4) is interpreted as the existence of weak mission congruence and one (former category 5) as the existence of strong mission congruence.

*Other variables* (*x*)

Following the theoretical discussion above, as well as the related empirical literature, we control for by the size of the business unit, the number of business units belonging to the same parent organization, the age of the organization, the degree of task complexity, the degree of skill demanded by the tasks, and the legal status of the organization.

The size of the child-care facility, *Size*, is measured as the number of full time employees. With regard to the number of child-care facilities, the survey provides a question that ask the interviewee approximately how many child-care facilities does your organization have. Based on this question, we created the variable *Number of facilities*. The variable *Age* is taken from a question that asks the interviewee in which year the organization that owns a particular facility was established.

The question that brings the measure for task complexity asks the interviewee to evaluate if the tasks performed by the teachers are complex. The answer is presented on a 5-point Likert scale, where 1 means “not at all,” 2 means “small,” 3 means “moderate,” 4 means “large” and 5 means “extreme.” The distribution of the plants for teachers for the five categories is 2.91, 3.88, 35.44, 40.78, and 16.99 percent, respectively. In this case, we gather together categories 1, 2 and 3, and 4 and 5, and create the dichotomous variable *Task Complexity*. The value of zero (former categories 1 to 3) is interpreted as the existence of no task complexity and the value of one (former categories 4 and 5) as the existence of task complexity.

For the degree of skilled of the task we rely on a question that asks the interviewee if the task performed by the teachers is highly skilled. The answer is presented on a 5-point Likert scale. As in the former case, 1 means “not at all,” 2 means “small,” 3 means “moderate,” 4 means “large” and 5 means “extreme.” The distribution of the plants for teachers for the five categories is 1.94, 4.85, 19.90, 45.63, and 27.67 percent, respectively. In this case, we gather together categories 1, 2 and 3, and 4 and 5, and create the dichotomous variable *Task skill*. The value of zero (former categories 1 to 3) is interpreted as the existence of a low task complexity and the value of one (former categories 4 and 5) as the existence of a high task complexity.

Ultimately, the questionnaire requires the interviewee to respond if the child-care facility belongs to a “for-profit,” “non-profit” or “government” form of corporate governance. The distribution of the childcare facilities for the three categories is 51.94, 45.15 and 2.91 percent, respectively. Based on this information we created the dummy variables *For-profit*, *Non-profit* and *Government*. The omitted variables will be *Non-profit* and *Government.* Table 1 shows the frequency distributions and the means and standard distributions of the variables defined in this section.

-Insert Table 1-

* 1. **Econometric approach**

In concordance with the theoretical section and the nature of the data, we propose the following econometric approach.

 [1]

** [2]

where and are latent variables. For the childcare facility *i,* the value of the variable *Pay-for-performance * will be equal to one  when the childcare facility *i* has an associated positive value and will be equal to zero , otherwise. Also, for the childcare facility *i,* the value of the variable *Autonomy* () will depend on the value of the latent variablein the following way:= 4 if  ≥ , = 3 if  > ≥ ,  = 2 if  >  ≥  and = 1 if  > . The independent variables are *Mission alignment* (*m*) and a set of *J* control variables (), where *j* = 1…*J*. The error terms, are distributed as bivariate normal with mean zero, unit variance and correlation coefficient. The parameters to be estimated areand. Hypotheses 1 and 2 predictand, respectively. From the theoretical section we also expect. With regard to the control variables we expect a positive relationship of *Pay-for-performance* with *Task skill* and *for-profit*. Also*,* we expect that Autonomy will be positively correlated to *Task complexity* and *Task skill*. For the rest of the control variables, we provide no prediction.

The general model proposed is logically consistent (for further discussion see Maddala, 1983 section 5.7) and the parameters are identified (Wilde 2000) and can be estimated by the bivariate ordered probit probability model.

1. **RESULTS**
   1. **Parameters’ estimation and hypotheses tests**

The results are shown in Table 2. The likelihood ratio test rejects at the 1 percent level the null hypothesis that all the explanatory variables are zero. The first column of Table 2 presents the results of the estimation of the incentives equation. These results provide support for Hypothesis 1. The coefficient of the variable *Mission congruence* is negative and statistically significantly different from zero at the 5.6 percent level (). With regard to the other variables, *Autonomy* and *Size* are also important to explain the decision on incentive provision. The three dummy variables associate to the variable *Autonomy* are positive and statistically significant at conventional levels of significance while *Size* is positive and statistically different from zero at the 1 percent level.

The second column of Table 2 presents the results of the estimation of the *Autonomy* equation, which is relevant for Hypothesis 2. The results also provide support for this Hypothesis. The coefficient of variable *Mission congruence* is positive and statistically significant at the 6.9 percent level (). None of the other independent variables in this specification resulted statistically significant to explain the decision on the provision of autonomy. Note however that the fact that the coefficient of the variable task complexity is very close to being significant  provides some insight of its importance.

-Insert Table 2-

* 1. **Results´ implications**

The results found in this article have important implications for firms’ management. Such as it has been suggested by the theoretical literature (Akerlof and Kranton 2005, Besley and Gathak 2005, Prendergast 2008, Van den Steen 2010), the child-care facilities of Minnesota, the U.S., seems to economize on the provision of monetary incentives for teachers whose objectives are aligned to the mission of the organization. We believe that this is the first test of this hypothesis using survey data in the working context. Precedents refer to the negative effect of explicit incentives on intrinsic motivation (the “crowding out” effect) much emphasized by the psychological and sociological literatures and provides empirical evidence under controlled conditions usually involving (different categories of) students.

The theoretical literature has also suggested that workers who share the mission of the organization can be trusted by the organization and receive more discretion to take decisions than workers who do not. Our analysis for teachers in the child-care facilities of Minnesota context seems to confirm this suggestion. This type of organizations seems to take advantage of the local knowledge (Hayek 1945) of the teachers when the later shares the mission of the organization. Antecedents of empirical work on this prediction are scant. Ting Ren (2010) works with an identical survey to ours but applied to nursing homes in Minnesota, the U.S. This paper provides evidence on the positive association between mission congruence and workers participation in any employee involvement program. But, unlike us, he does not find the same result when a more straightforward measure for delegation of decision-making (i.e., degree of control over how their work is done) is used. Campbell (2010) exploits a change in decentralization of authority and employment selection policies in a credit-union organization. He finds that the use of decision-making authority is significantly higher for employees selected via channels that are likely to sort on the alignment of their preferences with organizational objectives. But note that this paper does not test the effect on firms’ decentralization decisions of changes in hiring practices. As far as all workers are granted full authority, it measures the effect of hiring practices on workers predisposition to make use of this authority.

As in previous empirical studies, we find that workers’ autonomy and pay-for-performance decisions are positively associated. This hypothesis has receive support in the banking (Nagar (2002)) and industrial (Foss and Laursen 2005, Devaro and Kurtulos 2010 and Ben-Ner et al. 2011) contexts. We confirm this result with a different dataset and in different working context. The idea that any misbehavior by the part of the worker resulting from their discretion needs to be constrained via the provision of incentives (Prendergast 2002) seems to be a stylized fact.

Another relevant prediction of the literature is the positive association between delegation of decision-making and the degree of complexity of the job (Ortega 2009, Gibbs, Levenson and Zoghy 2010, Ben-Ner, Kong and Lluis 2011). The idea is that complex environments create asymmetric information regarding how a task should be done. In those setups, the worker, who is typically closer to the production process, is in a better position than the supervisor to determine how a task should be done (Prendergast 2002, Raith 2008, Ben-Ner et al. 2011). Then, employers should delegate decision-making. With our dataset and specification we did not find a strong correlation between these two variables. However, the fact that the degree of significance of task complexity is pretty close to being significant provides some insights of its importance.

1. **CONCLUSIONS**

This article provides evidence on the role of mission congruence, i.e., the extent at which the objectives of the workers are aligned to that of the firm, on pay-for-performance and autonomy decisions for Minnesota child-care facility´s teachers.

**REFERENCES**

Abernethy, Margaret A., Jan Bouwens, and Laurence van Lent (2004). “Determinants of Control System Design in Divisionalized Firms.” The Accounting Review, Jul2004, Vol. 79, Issue 3, pp. 545-570.

Adams, Christopher P. (2002). “Agent Discretion, Adverse Selection and the Risk-Incentive Trade-off.” FTC Bureau of Economics, Working Paper No. 255. December 2002.

Aghion, Philippe and Jean Tirole (1997). “Formal and Real Authority in Organizations.” Journal of Political Economy, 1997, vol. 105, no. 1.

Akerlof, George A. and Rachel E. Kranton (2005). “Identity and the Economics of Organizations,” Journal of Economic Perspectives, Vol. 19, No. 1, winter 2005, pp. 9-32.

Baiman, Stanley; Larker, David F. and Rajan, Madhav V. (1995). “Organizational Design for Business Units.” Journal of Accounting Research, Autumn95, Vol. 33, Issue 2, pp. 205-229.

Baiman, Stanley and Rajan, Madhav V. (1995). “Centralization, Delegation, and Shared Responsibility in the Assignment of Capital Investment Decision Rights.” Journal of Accounting Research, Vol. 33 (Supplement), pp. 135-164.

Baldenius, Tim (2003) “Delegated Investment Decisions and Private Benefits of Control.” The Accounting Review, Oct2003, Vol. 78, Issue 4, pp. 909-930.

Baron, James N. and David M. Kreps (1999). “Strategic Human Resources: Frameworks for General Managers.” John York & Sons, INC.

Ben-Ner, Avner (2008). “Preferences and Organizational Structure: Towards Behavioral Economics Micro-Foundations of Organizational Analysis, unpublished working paper, CHRLS, Carlson School of Management, University of Minnesota.

Ben-Ner, Avner and Ting Ren (2010). “Ownership and Performance in Markets with Asymmetric Information: Evidence form Nursing Homes.” Working paper, University of Minnesota.

Ben-Ner, Avner, Fanmin Kong and Stephanie Lluis (2010). “Uncertainty, Task Environment and Organization Design.” Unpublished Working Paper, University of Minnesota. March 2010.

Benabou, R and J. Tirole (2003). “[Intrinsic and extrinsic motivation](http://search.proquest.com/docview/204348141/130D17BE1533CD335E/4?accountid=15292).” The Review of Economic Studies70, 244 (Jul 2003): 489.



Besley, Timothy, and Maitreesh Gathak (2005). “Competition and Incentives with Motivated Agents.” American Economic Review, 95 (3): 616-36.

Brody, Evelyn (1996). “Agents without Principals: The Economic Convergence of the Non-profit and For-profit Organizational forms,” New York Law School Law Review, 40 457-536.

Bushman, Robert M; Mark C. Penno and Raffi J. Indjejikian (2000). “Private Predecision Information, Performance Measure Congruity and the Value of Delegation.” Contemporary Accounting Research, winter 2000, Vol. 17, Issue 4, pp. 561-587.

Campbell, Dennis (2010). “Employee Selection as a Control System.” Harvard Business School, November 2010.

Clarkson, Kenneth W. 1972. “Some Implications of Property Rights in Hospital Management.” Journal of Law and Economics. 15 363-384.

Colombo, Massimo G. and Marco Delmastro (2004). “Delegation of Authority in Business Organizations: An Empirical Test”. Journal of Industrial Economics, Mar2004, Vol. 52, Issue 1, pp. 53-80.

Deci, E. (1975). “Intrinsic Motivation.” New York: Plenum Press.

Deci, E. and R. Ryan (1985). “Intrinsic Motivation and Self-Determination in Human Behavior.” New York: Plenum Press.

Deci, E., R. Koestner and R. Ryan (1999). “A Meta-Analytic Review of Experiments Examining the effects of Extrinsic Rewards on Intrinsic Motivation”, Psychological Bulletin, 125 (6), 627-668.

Dessein, Wouter (2002). “Authority and Communication in Organizations.” Review of Economic Studies (2002) 69, 811-838.

DeVaro, Jed and Fidan Ana Kurtulus (2010). “An Empirical Analysis of Risk, Incentives, and the Delegation of Worker Authority.” Industrial and Labor Relations Review, Vol. 63, No. 4, July 2010, pp. 641-661.

Etzioni, A. (1971). “Modern Organizations.” Englewood Cliffs, NJ: Prentice Hall.

Foss, Nicolai J. and Keld Laursen (2005). “Performance Pay, Delegation and Multitasking Under Uncertainty and Innovativeness: An Empirical Investigation.” Journal of Economic Behavior & Organization, Vol. 58 (2005), 246-276.

Garicano, Luis (2000). “Hierarchies and the Organization of Knowledge in Production.” Journal of Political Economy, Vol. 108, No. 5. Gibbs, Michael; Keneth A. Merchant; Wim A. Van der Stede and Mark E. Vargus (2009). “Performance Measure Properties and Incentives.” Industrial Relations, Vol. 48, No. 2 (April 2009).

Gibbs, Michael; Alec Levenson and Cindy Zoghy (2010). “Why are Jobs Designed the Way they are.” Research in Labor Economics, Vol. 30, 107-154.

Gneezy, U., and A. Rustichini (2000). “[Pay Enough or Don't Pay At All](http://rady.ucsd.edu/faculty/directory/gneezy/docs/pay-enough.pdf).” Quarterly Journal of Economics August 2000, 791-810.

Holmström, Bengt (1979). “Moral Hazard and Observability.” Bell Journal of Economics, Vol. 10, No. 1 (spring, 1979), pp. 74-91.

Holmström, Bengt and Paul Milgrom (1987). “Aggregation and Linearity in the Provision of Intertemporal Incetives.” Econometrica, Econometric Society, Vol. 55, No. 2 (Mar., 1987), pp. 303-28.

Holmström, Bengt and Paul Milgrom (1991). “Multi-Task Principal-Agent Problems: Incentive Contracts, Asset Ownership and Job Design.” Journal of Law, Economics and Organization, Vol. 7 (Special Issue), pp. 24-52.

Holmström, Bengt. and Paul Milgrom (1994). “The Firm as Incentive System.” American Economic Review, Vol. 84, No. 4 (September 1994), pp. 972-991.

Itoh, Hideshi, Tatsuya Kikutani and Osamu Hayashida (2008). “Complementarities among Authority, Accountability, and Monitoring: Evidence from Japanese Business Groups.” Journal of the Japanese and International Economies, Vol. 22, Issue 2, June 2008, pp. 207-228.

Jensen, M.C. and W. Meckling (1992). “Specific and General Knowledge Structure.” In contract Economics, edited by L. Werin, and H. Wijkander, 251-274, Oxford, U.K.: Basil Blackwell Press.

Kruglanski, A. (1978). “Issues in Cognitive Social Psychology,” in The Hidden Cost of Reward: New Perspectives on the Psychology of Human Motivation, New York: John Willey.

Kruglanski, A. Friedman, I. and Zeevi, G. (1971). “The Effect of Extrinsic Incentives on some Qualitative Aspects of Task Performance”, Journal of Personality, 39, 608-617.

Lafontaine, Francis (1992). “Agency theory and franchising: some empirical results.” RAND Journal of Economics, Vol. 23, No. 2, summer 1992, pp. 263-283.

Lepper, Greene and Nisbett (1973)

Maddala, GS. (1983). “Limited Dependent and Qualitative Variables in Econometrics.” Cambridge University Press: Cambridge.

MacLeod, W. Bentley and Daniel Parent (1999). “Job Characteristics and the Form of Compensation.” In Research in Labor Economics, Vol. 18, edited by Solomon Polachek. Stamford, Conn.: JAI, 1999.

Melumad, Narum D. and Stefan Reichelstein (1987). “Centralization versus Delegation and the Value of Communication.” Journal of Accounting Research, 1987 Supplement, Vol. 25 Issue 3, pp. 1-18.

Melumad, Narum D., Dilip Mookherjee and Stefan Reichelstein (1992). “A Theory of Responsibility Centers.” Journal of Accounting and Economics, Vol. 15, Issue 4, December 1992, pp. 445-484.

Moers, Frank (2006). “Performance Measure Properties and Delegation.” The Accounting Review, Jul2006, Vol. 81, Issue 4, pp. 897-924.

Nagar, Venky (2002). “Delegation and Incentive Compensation.” The Accounting Review, Vol. 77, No. 2, April 2002, pp. 379-395.

Ortega, Jaime (2009). “Employee Discretion and Performance Pay”. The Accounting Review, Vol. 84, No. 2, 2009, pp. 589-612.

Osterman, Paul (1994). “How Common is Workplace Transformation and Who Adopts It?” Industrial and Labor Relations Review, Vol. 47, No. 2 (January 1994).

Prendergast, Canice (2002) “The Tenuous Trade-off between Risk and Incentives” Journal of Political Economy, Octo2002, Vol. 110, Issue 5, p1071-1102. \_\_\_\_\_\_

---------------------------(2008). “Work Incentives, Motivation, and Identity,” American Economic Review: Papers and Proceeding 2008, 98:2, 201-205.

Raith, Michael (2003). “Competition, Risk, and Managerial Incentives.” [American Economic Review](http://ideas.repec.org/s/aea/aecrev.html), American Economic Association, vol. 93, Issue 4, pp. 1425-1436, September.

Ren, Ting (2010). “Value Congruence as a Source of Intrinsic Motivation,” Kyklos, Vol. 63, February 2010, No.1, 94-109.

Shavel, Steven (1979). “Risk Sharing and Incentives in the Principal and Agent Relationship.” Bell Journal of Economics, Vol. 10, No. 1 (Spring, 1979), pp. 55-73.

Shi, Lan (2005). “Respondable Risk and Incentives for CEOs: the Role of Information-collection and Decision-making.” Working Paper, University of Washington. October 2005. Steinberg, Richard (2008). “Principal Agent Theory and Nonprofit Accountability,” Working paper No. 2008-03. Department of Economics, Indiana University-Pardue University.

Van den Steen, E (2010). “Culture Clash: The Costs and Benefits of Homogeneity,” Management Science, Vol. 56, No. 10, October 2010, pp. 1718-1738.

Widener Sally K., Margaret B. Shackell and Elizabeth A. Demers. “The Juxtaposition of Social Surveillance Controls with Traditional Organizational Design Components.” Contemporary Accounting Research Vol. 25 No. 2 (Summer 2008) pp. 605-38.

Wilde (2000).

Wilson, T., Hull, J. and Johnson, J. (1981). “Awareness and Self-Perception: Verbal Reports on Internal States”, Journal of Personality and Social Psychology, 40, 53-71.

Wulf, Julie (2007). “Authority, Risk and Performance Incentives: Evidence from Division Manager Positions Inside Firms.” Journal of Industrial Economics, Volume 55, Issue 1, pp. 169-196.

**Appendix 1**

**Definition of variables from the questionnaire**

**Pay-for-Performance**

Please check the forms of compensation and fringe benefits received by most employees in each group

|  |  |
| --- | --- |
|  | Teachers |
| Any form of incentive or pay bonus  Please specify type: |  |

**Autonomy**

To what extend do these employees

1. Not at all, 2. Small, 3. Moderate, 4. Large, 5. Extreme

|  |  |
| --- | --- |
|  | Teachers |
| Have control over how their work is done? | 1 2 3 4 5 |

**Mission Congruence**

Please evaluate the following statements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
| Most of our Teachers believe in the mission of our organization | 1 | 2 | 3 | 4 | 5 |

**Task Complexity**

To what extend

1. Not at all, 2. Small, 3. Moderate, 4. Large, 5. Extreme

|  |  |
| --- | --- |
|  | Teachers |
| Are the tasks performed by these employees complex? | 1 2 3 4 5 |

**Task Skills**

To what extend

1. Not at all, 2. Small, 3. Moderate, 4. Large, 5. Extreme

|  |  |
| --- | --- |
|  | Teachers |
| Are the tasks performed by these employees highly skilled? | 1 2 3 4 5 |

**Size**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Teachers | Assistant Teachers | Aides | Supervisors |
| Number of full-time employees |  |  |  |  |

**Age**

In what year was the organization that owns your particular facility established?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Number of child facilities**

Approximately how many child care facilities does your organization have?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Legal Status**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Tables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table 1  Frequency distribution and descriptive statistics | | | | |
| Variable | Categories | Percentage | Mean | S.d. |
| *Pay-for-performance* | Low pay-for-performance | 74.76 |  |  |
|  | High pay-for-performance | 25.24 |  |  |
| *Autonomy* | Likert scale |  | 4.26 | .66 |
| *Mission congruence* | Likert scale |  | 4.57 | .80 |
|  | Low Mission congruence | 31.55 |  |  |
|  | High Mission congruence | 68.45 |  |  |
| *Task complexity* | Likert scale |  | 3.65 | .91 |
|  | Low Task complexity | 42.23 |  |  |
|  | High Task complexity | 57.77 |  |  |
| *Size* | Continuous |  | 7.21 | 8.03 |
| *Number of facilities* | Continuous |  | 32.05 | 209.14 |
| *Age* | Continuous |  | 40.49 | 34.71 |
| *Task skill* | Likert scale |  | 3.92 | .92 |
|  | Low Task skill | 26.70 |  |  |
|  | High Task skill | 73.30 |  |  |
| *For-profit* |  | 51.94 |  |  |
| *Non-profit* |  | 45.15 |  |  |
| *Government* |  | 2.91 |  |  |
| Number of observations: 206 | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table 2  Results of the Bivariate Probit Probability Models Estimations | | | | |
|  | Equation [1]  Dependent variable: *p* | | Equation [2]  Dependent variable: *a* | |
| Independent Variables | Estimates | p-values | Estimates | p-values |
| *Autonomy1* | -.70\*\* | 0.035 |  |  |
| *Autonomy2* |  |  |  |  |
| *Autonomy3* | 1.19\*\*\* | 0.000 |  |  |
| *Autonomy4* | 2.60\*\*\* | 0.000 |  |  |
| *Mission congruence* | -.33\* | 0.056 | .32\* | 0.069 |
| *Task complexity* | -.25 | 0.131 | .27 | 0.108 |
| *Task skill* | .005 | 0.979 | .02 | 0.933 |
| *Size* | .03\*\*\* | 0.004 | -.02 | 0.125 |
| *Number of facilities* | -.0003 | 0.475 | .0001 | 0.751 |
| *Age* | -.0007 | 0.790 | -.002 | 0.522 |
| *For-Profit* | .048 | 0.773 | -.06 | 0.729 |
| *Cons* |  |  |  |  |
| *Cut1*  *Cut2*  *Cut3*  *Cut4* | 1.79  -2.39  -1.08  .53 |  |  |  |
| *Wald Chi2*  *N*  *Log likelihood*  *Rho* | 234.88  206  -304.49  -1 | .000  0.103 |  |  |
| \*Statistically significant at the 10% level, \*\* at the 5% level, \*\*\* at the 1% level | | | | |

1. Ω The authors received financial support from the Spanish Minister of Education, ECO 2010-21393-C04-01. We are grateful for helpful comments to several participants at the Seventh International Conference of the Iberoamerican Academy of Management in Lima, Peru.

   # 

   [↑](#footnote-ref-1)
2. The literature suggests alternative explanations to delegating the decision to the workers. For instance, delegation of decision-making could encourage incentives to collects information (Aghion and Tirole 1997), incentives to implement or execute the project (Van den Steen 2006) or because it takes time and effort (Van den Steen 2010). [↑](#footnote-ref-2)
3. For some other authors (Garicano 2000), the association between task complexity and delegation of decision-making is exactly the opposite one. More task complexity should result in less delegation of decision-making and vice versa. The sign of the relationship is after all an empirical issue. [↑](#footnote-ref-3)