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INCENTIVES' JOB SATISFACTION AND PERFORMANCE: EMPIRICAL EVIDENCE IN ITALIAN SOCIAL ENTERPRISES

Sara Depedri, Ermanno Tortia, and Maurizio Carpita[*]

Abstract

The paper offers a contribution to the understanding of the relations between incentives, satisfaction and performance of employees in social enterprises. It starts by criticizing the general hypotheses of the principal-agent theory and especially that employee satisfaction is determined exclusively by the level of salary received. These criticisms are explained both by looking to the organizational definition of job satisfaction by Locke and by taking a behavioural economics perspective. Job satisfaction is thus assumed to derive from a composed mix of incentives received on the job, equity perceived and employee motivations. It is no longer possible to assume that the wage is the sole (not even the most important) variable influencing worker performance. This claim is especially valid in social enterprises, where worker performance is difficult to monitor and evaluate, while high intrinsic motivations can better explain job satisfaction.

The empirical analysis helps to shed light on the determinants of job satisfaction and individual performance. Data was collected on 4,134 employees working in 320 Italian social cooperatives. The paper introduces the methodologies of categorical principal components analysis, factor analysis, and Rasch models to group the items of intrinsic and extrinsic satisfaction, motivations and fairness. The data was then analysed by means of linear regression where the dependent variables are not only the stated degree of job satisfaction, but also satisfaction with extrinsic and intrinsic aspects of the job. The models come to demonstrate the particular relevance of employee motivations and fairness perceived in explaining job satisfaction and its sub-dimensions. Furthermore, organizational perceptions and the work environment are found to be significant as are individual perceptions and motivations.

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Introduction

In mainstream economics, the employment relationship was mainly conceived as an exchange of wage for time and effort, since the worker is supposed to only pay attention to the contracted labour services he/she is delivering to the firm. A similar approach has been followed by institutional economists (starting with the contributions of Arrow, 1971; Alchian & Demsetz, 1972; Holmstrom, 1979; Fama & Jensen, 1983; Hart & Holmstrom, 1987), who have formalised a model of exchange between the principal and the agent. The model assumes that the principal has as her only objective the maximization of her profit, while the agent maximizes her utility. Given these aims, agency theory focuses, firstly, on the process of screening of workers, and secondly on the design of the efficient contract, that is the contract able to guide appropriate actions by the agent. In the selection process, the principal must design the wage structure able to maximize the organizational outcome under the participation and the incentive constraint of the worker. As theory suggests, workers will accept the job if, and only if, the achieved utility is at least as high as their reserve utility and, simultaneously, the possible utility achieved in outside options. The only incentive entering in the workers' utility function is the wage, while the cost of effort is negatively correlated with it.

The wage is the central focus of the incentive scheme, which aims at inducing workers to exert the optimal effort level. Most attention was devoted therefore to pay-for-performance, deferred compensation and team production (for a comprehensive review, see Prendergast, 1999). Nevertheless, the main inefficiencies in these contractual schemes are linked to the costs of contracting (starting from Coase, 1937; Williamson, 1985, 1996) and incompleteness (starting from Grossman and Hart, 1986; Hart and Moore, 1982). The main obstacles to the achievement of first-best contracts emerge especially in multi-tasking activities, where employee performance consists of both quantitative and qualitative activities.

Since economic incentives can fail to gain the maximum possible degree of worker commitment, the emergence of a new economic approach to workers' preferences has progressively developed. It demonstrates that worker involvement can be increased also through non-monetary incentives. Behavioural economists have reflected on the multifaceted nature of employment relationships and on the importance of incentives other than wage to increase workers' satisfaction and effort. Job satisfaction is therefore today conceived as a complex mental process, in which employees evaluate different aspects of their jobs and in which they have preferences expressed by individual motivations and needs. Furthermore, job satisfaction is no more conceived as a constraint to the organizational management, but it becomes a specific objective of human resource management policies, especially in jobs where employee commitment is crucial to organizational outcomes, for example when labour contracts are highly incomplete due to asymmetric information and to the relational content of the delivered services.

Simultaneously, the contribution of the worker can be measured not only in terms of working time, technical abilities and productivity, but depends also on cognitive and psychological involvement, since workers consume both physical and psychological energy. Higher effort levels are therefore not always sufficiently compensated with monetary incentives, but they can be enhanced also thanks to altruistic motivations and non-monetary incentives.

More attention must be given to this multifaceted nature of the determinants of employee satisfaction and performance. In particular, the paper briefly reviews the theoretical approaches that have considered the main components of job satisfaction and of workers' behaviour, and it proposes a survey of some of the main results found in the literature. By combining theory and empirical results, section one depicts a comprehensive mental process of construction of job satisfaction and summarises the main determinants of job satisfaction. A simple model is proposed that is tested in section two.

The paper then turns its attention to social enterprises: private nonprofit organizations with a productive aim. Nonprofit organizations in general, and social enterprises in particular, are understood as organizations in which workers' motivations and satisfaction include intrinsic and non-self regarding nature components (Rose-Ackerman, 1996; Young, 1983). Furthermore, social enterprises seem to provide their workers a specific mix of incentives, conceived as extrinsic non-wage incentives (e.g., training, a positive work environment, career, etc.) and intrinsic resources (e.g., involvement, self-esteem, social recognition, social usefulness, etc.) (Borzaga and Depedri, 2008). The paper tests the determinants of job satisfaction using data collected in a recent investigation concerning 4,134 workers in 320 Italian social enterprises and reflects on them and draws conclusions. The data was analysed by means of linear regression where the dependent variable is the stated degree of job satisfaction, which in the survey was decomposed into 25 different aspects of the job and of the working environment. Three synthetic representations of job satisfaction are produced, total job satisfaction and satisfaction with extrinsic and intrinsic aspects of the job. Continuous variables employed in linear estimation have been obtained from demand items by means of the Rasch model. The original items concerning job satisfaction, workers' motivations, procedural and distributive fairness have been grouped by employing categorical principal components analysis and factor analysis. The linearised model encloses also intrinsic and extrinsic rewards, which have been added to complete the picture of the features of the incentive mix both in monetary and non-monetary terms. The model is intended to give a comprehensive picture of the determinants of job satisfaction also because it allows the comparison of the impact of different determinants. We also added the OLS estimates concerning overall job satisfaction and wage satisfaction as a term of comparison for the estimates that concern the variables obtained with the Rasch model.

Section 1 deals with the theoretical model of job satisfaction, worker motivations, and the organizational context that rests in the background of our empirical analysis. Section 2 presents the descriptive analysis of the data. The main statistics of workers' socio-demographic features, motivational drives, satisfaction, contextual variables, and fairness are displayed and discussed. Section 3 introduces the econometric analysis of the factors influencing worker on-the-job well-being. Section 4 concludes with some discussion about the relations between the econometric findings and the theoretical premises in Section 1.

1. The mental process of construction of job satisfaction

The estimation of job satisfaction is a compound mental process, which starts from the evaluation of one's own expectations on the ideal job and ends with the general well-being of the employee. It includes both physical and psychological factors; it

requires the employee to consider all the characteristics of the job and therefore it can be determined by many factors. These possible determinants of job satisfaction have therefore been included by scholars in both theoretical and empirical analyses. The contribution of the empirical literature is crucial, but puzzling in many respects. Researchers have in fact generally dedicated their attention to only some determinants at a time, given the difficulty both in designing appropriate questionnaires including the most relevant explanatory factors of job satisfaction and in carrying out models including proxies for many aspects of the job and characteristics of the worker.

The various determinants of job satisfaction can be however summarised by exploiting the study by Locke (1969, 1976) and by integrating his approach with notions of behavioural theory and results of empirical analyses.

1.1. The determinants

In order to sort out the main determinants of job satisfaction, it is essential to describe employees' understanding of their job and of their well-being. As Locke asserts (1976, p.1301) "[a] job is […] a complex interrelationship of tasks, role, responsibilities, interactions, incentives, rewards". Therefore, job satisfaction depends on the estimation of many dimensions, which are classified in three groups: the work, the context, and the rewards. The empirical literature investigated all these dimensions, although more recent approaches have integrated Locke's taxonomy with new and more precise terminologies, which lead to a comprehensive description of the determinants of job satisfaction.

The first set of determinants of job satisfaction goes therefore under the unifying label of work. Work describes all the main features of the job. It approximates the manner in which the job is carried out and thus it includes variables such as task activities, professional training, control, achievement, variety, and intrinsic interest for the job. This job dimension has been greatly considered in empirical analyses, which have mainly concentrated on its intrinsic components. Empirical investigations have generally concluded that intrinsic aspects of work positively influence job satisfaction. For example, an interesting job is considered by workers to be the greatest positive determinant of job satisfaction (Sousa-Poza and Sousa-Poza 2000; Skalli et al. 2007), or one of the most important job characteristics (Clark, 2005; Helliwell and Huang, 2005). Similarly "good job contents" (described as having an interesting job, useful for helping other people and society, which is thought to enhance worker independence) influence job satisfaction significantly and positively (Clark, 2005) and workers (especially managers) appear frequently committed more to their jobs than to their organizations (Stroh et al. 1994). Also autonomy and self-determination positively impact on job satisfaction (Hechanova et al. 2006) and the same is true for workers' participation in managerial review processes (e.g. Dipboye, 1985; Nathan et al., 1991; Soonhee, 2002).

The second group of determinants of job satisfaction considered by Locke is the context, which refers to physical and social working conditions. This group of variables has not been studied in depth by researchers, although some authors have evidenced the significance of some features of the context such as, in particular, the working hours and the physical work environment (Clark, 1997; Sousa-Poza and Sousa-Poza, 2000; Gazioglu and Tansel, 2006; Skalli et al., 2007). Among other proxies of the

working environment, employee satisfaction appears to be negatively influenced by firm size, as in Clark (1997), and it varies by sector of activity and organizational form (as shown by Diaz-Serrano and Cabral Vieira 2005; Ghinetti 2007). However, some analyses demonstrate that satisfaction is only indirectly determined by the size of organizations, since size determines a different atmosphere and different processes of workplace learning (e.g. Rowden, 2002). Similarly, the sector and the legal form are non significant when the characteristics of the working environment and of workers are taken into account (as in Borzaga and Depedri, 2005; Tortia, 2008; Lanfranchi and Narcy, 2008).

The notion of context can however be extended also over elements of physical working conditions and specifically to social conditions. The context refers also to the interaction among employees and therefore relationships must be included as a relevant proxy of the context. Empirical analysis have in this case amply demonstrated that employees' relatedness with supervisors, colleagues and customers increases job satisfaction (Clark 1997; Borzaga and Depedri 2005; Borzaga and Depedri 2009). More specifically, the relationship with management seems even more important than relationships with colleagues (Sousa-Poza and Sousa-Poza 2000; Helliwell and Huang, 2005), and in general relationships may be conceived as a good that firms can in some cases exchange for monetary compensation (as demonstrated by Antonioli et al. 2008, Borzaga and Depedri 2005, when comparing non-profit with for-profit firms).

The last important group of variables explaining job satisfaction includes rewards. Rewards consist of all the economic benefits supplied by the organization, as pay, promotion, and other benefits, but also verbal recognition and responsibilities. The most studied reward is wage, although results of the empirical literature are quite puzzling. On the one hand, workers' compensation and job satisfaction seem positively related in country cross-section analysis (Skalli et al. 2007; Sousa-Poza and Sousa-Poza 2000; Blanchflower and Oswald, 1999) and this result is confirmed by some studies on the correlation between wage and job satisfaction (Siebern-Thomas's 2005; Brown and McIntosh 1998; Diaz-Serrano and Cabral Vieira 2005). Other studies have however revealed that the relationship between the wage level and job satisfaction can also be negative (Leontaridi and Sloane, 2001) or it is frequently weak or undetermined (Cappelli and Sherer 1988). Furthermore, in sectors of activity where the relevance of other characteristics of the work and of the context is more important (as in the social services sector) and when controlling for the contextual variables (on-the-job relationships in Borzaga and Depedri 2005; procedural and distributive fairness in Tortia 2008) the wage does not influence job satisfaction.

A stronger correlation emerges instead between job satisfaction and some sub-dimensions of the wage (as defined by Locke). Empirical analyses have demonstrated that not only, or even mainly, does the absolute level of pay, but also the presence of bonuses and of overtime policies, pay equity and pay security have important consequence on job satisfaction. First, the effect of economic rewards on job satisfaction is positive and significant when organizations implement policies of budgetary participation and budgetary emphasis (Lau and Tan 2003). Second, when the effective wage is under the expected level workers are less satisfied with their job (Cappelli and Sherer, 1988). Similarly, the differences in wages among co-workers,

which is an index of distributive fairness,[1] negatively affect job satisfaction (Benz 2005).

As regards other possible economic rewards, empirical analysis demonstrated that both changes in workers' pay over time (Clark, 1999) and promotion opportunities (Clark, 1997) positively influence job satisfaction. The importance of non-monetary rewards has been instead investigated mainly by introducing psychological factors as in the contribution of behavioural theory. Both the theory and empirical analyses show that people are moved by incentives other than the wage, as for example social approval (Gaechter and Falk, 2000), fairness, and other non-monetary aspects of the job.

1.2. The process

Understanding the characteristics of the job that impact on employee satisfaction is not sufficient to predict the level of job satisfaction. As asserted by Locke in another passage of his contribution (p. 1307) "[j]ob satisfaction results from the perception that one's job fulfils or allows the fulfilment of one's important values, providing to the degree that those values are congruent with one's needs". The work, the context and the rewards are therefore only proxies for the essence of the job, while job satisfaction emerges from the comparison between the job and employees' expectations and needs. Moreover, each job characteristic is not equally assigned the same value by all people, since different employees can have different preferences.

As regards expectancies concerning the job, employees evaluate ex-ante what the working environment can offer them considering their personal traits and abilities. Empirical studies on job satisfaction have only rarely estimated workers' expectations. Mainly, expectations have been approximated by the natural traits and professional characteristics of workers. It is thus assumed that individual expectations mainly depend on the characteristics of employees and on the tendency of homogeneous classes of people to adopt homogeneous preferences and expectations. For example, women and men differ in their expectations and this is why job satisfaction tends to be higher for women (Clark, 1997; Long, 2005). However, the female satisfaction premium is reported to have decreased in the last years due to the convergence of expectations between men and women. (Sousa-Poza and Sousa-Poza, 2003). Similarly, the higher satisfaction of workers with lower levels of education is explained by higher expectations of highly-educated people and in particular by educational surpluses (Tsang et.al, 1991; Hersch, 1991; Gazioglu and Tansel, 2006). Also, age is correlated with job satisfaction, but in a U-shaped way, and so employees' expectations seem to be lower when they enter the labour market and to follow a process of adaptation in the long run.

Looking instead at needs, they include both economic needs and other physical and psychological needs. The pyramid of needs designed by Maslow (1974) identifies five categories: physiological needs (or prime needs), needs of security (included stability, and protection), needs of identification and involvement (both in a society, and in

[1] *Distributive fairness* is the perception of correctness of the level of the wage earned in comparison to different aspects of the job (e.g. stress, role) and individual status (e.g. level of education) or a benchmark (e.g. the market wage or other colleagues' wages), while *procedural fairness* refers to the correctness of organizational procedures, the transparency in the transmission of information, and the equity in managing careers.

groups), needs of esteem (as self-esteem and other rewards), and needs of self-fulfilment (as implementation of personal and professional abilities). These categories include therefore mental health and mental pleasures beyond physiological needs and the consumption of goods. Furthermore, needs quite well identify the various aspects of a job that are evaluated by employees and that have been described in the previous paragraph. It seems therefore possible to assert that employees evaluate their needs on the different features that a job should supply and compare them with the characteristics of their own jobs.

As a last point in the definition of job satisfaction by Locke, employees judge their job through individual values. Employees know what they want and value (contents) and how much they want and value (intensity). They express individual preferences for each aspect of their job and therefore their evaluation of job satisfaction can differ even if the job has exactly the same characteristics (in terms of work, context and rewards) and employees have the same personal traits and needs.

The notion of values is the most complex to define. However, starting from the '80s, writings in behavioural theory have stressed the presence of people with heterogeneous preferences in terms of values assigned to both monetary and non-monetary rewards and preferences. A better understanding of employees' values comes from the notions of motivations, social preferences, and non self-regarding preferences.

Initially introduced by psychologists, the term motivation defines all factors influencing people's actions and in particular the level of energy that individuals devote to their choices.[2] The main distinction in (both economic and psychological) literature, is between extrinsic and intrinsic motivations (deCharms, 1968; Deci, 1975; Frey, 1997; Benabou and Tirole, 2003). Extrinsic motivations emerge when workers satisfy their needs indirectly, mainly through monetary compensation and buying goods or services. Intrinsic motivations are fulfilled when workers undertake an activity for their immediate satisfaction. Consequently, the intrinsic nature is specific to the task and directed to: the flow of activity, a goal that is self-defined, and the obligation of personal and social norms—benevolence, identity, fairness—for their own sake (Frey, 1997). Intrinsic motivations include the interest in the activity performed, good relationships with other colleagues and with superiors, and involvement and autonomy in decision-making at the operational and strategic level. These aspects are conclusively linked to work as defined by Locke. Furthermore, intrinsic motivations are more strictly related to the satisfaction of higher needs, like self-esteem and self-fulfilment in Maslow's scale, hence their fulfilment comes after the satisfaction of more basic needs, which are linked to monetary rewards. The term motivation seems therefore complementary to the theory by Locke. A job encompasses both extrinsic and intrinsic needs, workers have both extrinsic and intrinsic expectations, and people assign different intensity to their intrinsic and extrinsic values.[3]

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[2] Therefore, the term reproduces the general assumption that behaviours depend upon perceptions and thinking, which are transformed into effort to achieve goals and satisfy needs (Atkinsons, 1973; Fontana, 1989).

[3] Whether motivations refer more to the dimension of values than to workers' expectations is however a little unclear. For example, Benabou and Tirole (2000) assume that extrinsic motivations consist of contingent rewards, while intrinsic motivations are individual's desires. Extrinsic aspects seem therefore quantitatively measured and come from the direct provision of the principal. Intrinsic aspects are instead psychological factors proper of the worker and help in defining workers' values.

The intensity of values also depends on the preference of employees for aspects other than the self-sphere. Experimental studies have offered the main contribution to understand social preferences. For a clear understanding of the specificities of the various types of social preferences, the taxonomy reported in Fehr and Schmidt (2001) is useful. The authors firstly claim that social preferences in general emerge when the utility of an individual is affected by variations in the allocation of the physical resources of other people. In other words, the decision-maker takes into consideration not only her personal payoff, but also how material resources are allocated to others. Depending on the impact of the others' situation on the individual's well-being, social preferences are then subdivided in pure altruism—when the individual always values positively material resources allocated to other people—inequity aversion—when differences in the payoff or in the well-being of others decrease the well-being of the individual—and reciprocity—when an individual responds kindly to kind actions and with hostility to nasty actions. The focus of this approach is to evidence the dependence of individual well-being on aspects other than the self and in particular from the well-being of others. Applied to employees, it means that job satisfaction not only depends on the individual position in the work but also on the well-being of others in the organizations: for example colleagues, the principal and clients. The importance of social preferences has been investigated especially within nonprofit organizations or in sectors of general interest. For example, social preferences seem to explain why nonprofit organizations are able to select altruistic employees willing to donate part of their work (Preston, 1989) and inclined to develop a sense of group connected with the social dimension of the activity (Almond and Kendall, 2002). Related to this, equity has been probably the most studied among the other social preferences, by looking to the distribution of wages among co-workers, but also by considering the organizational procedures that influence the distribution of well-being. Empirical analyses on job satisfaction have come thus to evidence that individual job satisfaction depends on both distributive (Levine, 1991; Mirvis, 1992; Leete, 2000) and procedural fairness (Benz, 2005; Tortia, 2008).

This multifaceted nature of preferences has been enquired by other authors and in particular by Ben-Ner and Putterman (1998). According to their approach, individuals are simultaneously motivated by self-regarding egotistical motivations, other-regarding social preferences, and process-regarding motivations linked to how an organization manages its human resources. This taxonomy summarizes previous considerations on the origins of values by distinguishing among aspects which are supplied for the exclusive benefit of the employee; aspects which involve others, but have an indirect impact on the individual; and aspects that concern the working environment and the management of the organization and therefore influence the employees' perception of being part of the context. Here again, procedural justice is evidenced as a crucial component. While complete, the taxonomy can be further deepened by including in self-regarding preferences both intrinsic and extrinsic aspects, as respectively self-fulfilment, on the one hand, and altruism on the other. Hence, the interrelation among factors describing job satisfaction is to be added to the factors generating employee well-being.

1.3. The interactions

In the supply of rewards and in the management of incentives to increase employee satisfaction, some incentives (or job characteristics) frequently interrelate with others and therefore their final impact on job satisfaction is undetermined. The main interference between variables has been explained by the psychological perceptions of employees. This effect has been mentioned in the behavioural literature as the crowding-out of intrinsic motivations. Its functioning has been empirically proven by Frey and Jegen (2000) and Deci and Ryan (1985), explaining that, under specific conditions, extrinsic rewards can be perceived by workers as ways of controlling and disciplining.

Furthermore, as shown by Akerlof and Kranton (2004), in some contexts, wage rewards can damage workers' self-image as jobholders and their involvement in the team and organizational mission. Benabou and Tirole (2003) evidence a negative effect of pay-for-performance on agents' perceptions of their own abilities, and then on their performance. These results give important contributions for understanding job satisfaction and advise researchers on the relevance of possible interactions not only between rewards, on the one hand, and job satisfaction on the other, but also among rewards, with consequences on job satisfaction that may be negative. On the other hand, profit sharing has been generally recognised to enhance worker satisfaction and effort, hence it does not seem to crowd out intrinsic motivations (Frey and Osterloh 1999; Green and Heywood 2008), probably because it concerns the results of the organisation as a whole and not of specific work activities.

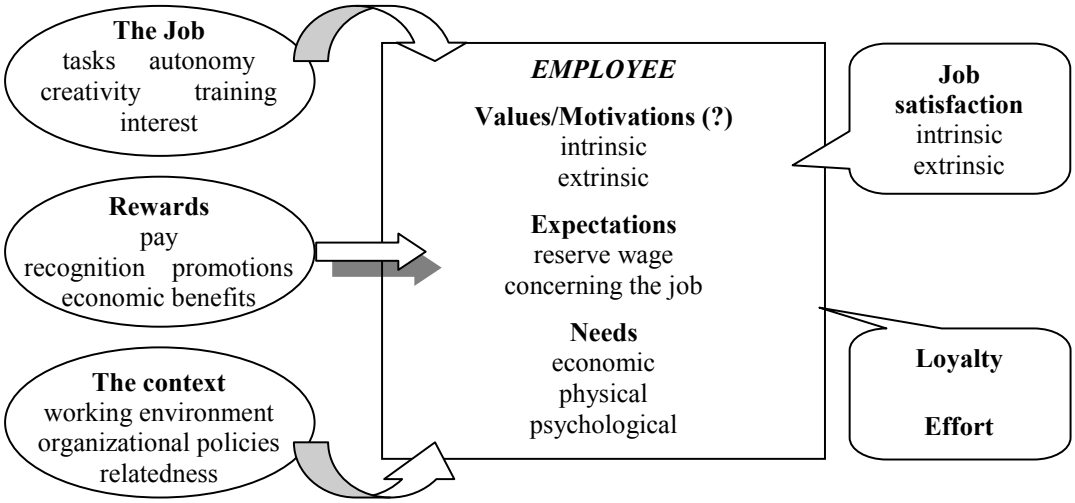
Interactions also concern behaviours of employees within an organization. As Manski (1995) observes, preferences, perceptions and behaviours of employees are influenced by the interaction with the working environment and with similar individuals. Specifically, "individuals belonging to the same group tend to behave similarly" due to three main typologies of effects (p.127). First, endogenous effects emerge when the individual behaviour is influenced by the prevalence of that behaviour in the group. Second, contextual effects are identified in the adoption of behaviours which are influenced by the distribution of background characteristics in the group. Third, correlated effects consist in the emergence of similar behaviours of employees in one organization because they face similar institutional environment or have similar individual characteristics. These statements can be applied to explain similar behaviours of employees in terms not only of effort chosen, but also of satisfaction achieved. Frequently employees within one organization tend to express similar levels of job satisfaction not only because of similar job conditions (rewards, the context, the work), but also because their motivations are similar and employees influence each other's perceptions and attitudes towards the job. The emergence of similar perceptions and attitudes of workers within organizations has been also confirmed by studies on the sorting of employees with similar characteristics in the same organization or sector (e.g. Mortensen [1984] when looking to employees' skills; Krueger and Schkade [2007] speaking about propensity for interpersonal relations). Therefore, both approaches help in claiming that the working environment simultaneously tends to select people with similar characteristics and to motivate employees towards similar behaviours and perceptions due to the prevalence of those characteristics and behaviours in the group.

An adaptation process seems to emerge, which can be also described from norms of conformism or from evolutionary preferences. Interrelations among people and with the working environment promote in fact the evolution of preferences and the adaptation of behaviours over time.

1.4. The model to test

The picture describing job satisfaction is now complete while complex (Figure 1). Job satisfaction is the result of a process that starts from the identification of the individual, whose natural traits explain her needs and expectations towards the job. Furthermore, the employee expresses values and ideals; he has both self-regarding and other-regarding preferences, and is moved by both extrinsic and intrinsic motivations. These can be ranked by following the Maslow hierarchy or the individual preferences, starting however from the most basic needs, which are fulfilled mainly by monetary and extrinsic rewards, and going up to higher-level needs, which are best supported by the intrinsic interest in the job, by involvement, and by other relational and procedural components of the working environment.

Figure 1 – The determinants of job satisfaction



After his hiring, the employee obtains rewards and non-monetary incentives and evaluates her job characteristics by looking to both extrinsic and intrinsic characteristics. Furthermore, he learns from interacting with the working environment, from common behaviours and preferences adopted by the group, and from relationships developed by colleagues and other people within the organization. Therefore, the characteristics of other people, average motivations, behaviours and attitudes can explain the emergence of similar preferences and perceptions among co-workers and the impact on job satisfaction. At the same time, organizational policies also influence employee perceptions, especially in terms of social or non-self-regarding preferences: distributive and procedural fairness are estimated by the employee and can impact on his estimation of the individual well-being.

This complex interrelation among different variables and sources of satisfaction, among preferences, expectations, values and rewards, work and job characteristics must be simplified by assuming linear relations between job satisfaction and its

determinants in order to be tested in the following empirical models through linear regressions. Specifically, the function of job satisfaction can be simplified in the following equation:

$$S = \alpha - \beta_1 NT + \beta_2 MOT + \beta_3 \mathrm{Re} + \beta_4 Ri + \beta_5 Fp + \beta_6 Fd + \beta_7 ORG + \beta_8 x + \varepsilon ; \qquad (1)$$

with S=job satisfaction; R_i =extrinsic and intrinsic rewards; F_p and F_d = procedural and distributive fairness; and where the model assumes that expectations are appropriately summarised by the natural (e.g. gender) and acquired (e.g. education) traits of the employee (variable NT), while MOT = intrinsic motivations of the worker approximates the employee's values, and ORG = organizational characteristics and working environment influence the perceptions of the employee.

We expect that all the parameters β in the function (1) are significant and satisfaction is particularly influenced by the main proxies of workers' intrinsic motivations, social preferences, and other organisational and non-monetary aspects. Specifically, the most significant parameters are expected to be β_2 expressing the weight of intrinsic motivations, β_4 referred to intrinsic rewards, β_5 and β_6 referred to distributive and procedural fairness. Also organizational and group effects can be positive and significant, although they differently summarise specific proxies of the working environment. Finally, some variables could have a nil or negative effect on job satisfaction, as expected for economic rewards (Re), extrinsic motivations and some of the natural and acquired traits which are related to workers' expectations.

2. Employees' well-being in Italian social enterprises

We use the ICSI2007 data (*Indagine sulle Cooperative Sociali in Italia,* Enquire on Social Cooperatives in Italy), which was collected by a pool of six universities[4] in 2006 through questionnaires submitted to a representative sample of 4,134 employees and 338 managers of 411 Italian cooperatives. The survey includes a large set of questions ranging from socio-demographic controls (age, gender, education, etc.) to economic variables (e.g. wage), job characteristics (tasks, working hours, overtime) and job satisfaction with respect to a number of possible domains (relationship with colleagues, wage, type of job). Worker motivations and the perception of various organisational dimensions such as fairness, autonomy and teamwork were enquired as well. The result is an extremely rich database which allows for the study of the conditions and motivations of people employed in Italian not-for-profit enterprises.[5]

The initial sample was extracted from the ISTAT[6] 2003 census on social cooperatives (ISTAT, 2003, 2007), which recorded 6,168 active cooperatives (with at least one employee) at the national level (Carpita et al., 2009, pp. 1-32). Representativeness at the national level was guaranteed by stratification on the basis of three parameters: typology of cooperative (Type A and Type B)[7], geographic representativeness by

4 Trento, Bergamo, Brescia, Milano Bicocca, Napoli Federico II and Reggio Calabria.

5 The questionnaire is omitted for reasons of space and is available from the authors upon request.

6 Italian National Agency for Statistics.

7 Italian social cooperatives are of two different typologies. Type A social cooperatives deliver social services, while Type B social cooperatives have been conceived by law for work integration of disadvantaged

province (the Italian state is made of 20 regions and 107 provinces); and size (by classifying cooperatives as small when the number of employees is lower than 15, medium when it is included from 15 to 50, and big when the cooperative has more than 50 employees). The final sample is made up of 411 organisations.

Four different questionnaires were distributed to the selected sample concerning, respectively, paid and volunteer workers, cooperatives, and managers. In this article only data from the questionnaire distributed to paid workers and to the cooperative will be used. The main source of data is represented by the questionnaire delivered to paid workers, while we take advantage also of some questions enclosed in the questionnaire delivered to cooperatives, for example concerning the sector of operation, dimension, and the typology of services provided. The rate of individual non-responses for paid workers is extremely low since 85% of involved workers answered on average 90% of the 87 questions (56 single choice questions and 31 multiple choice questions).

2.1. Socio-demographic characteristics of workers

The descriptive statistics of the socio-demographic features of workers, of job tasks and of their contractual position is reported in Table1. The average age is about 37. The workforce is predominantly female (74%). Most workers are married with children (59%). Half of the workforce achieved a secondary school education level, while 28 percent achieved either a three years or a five years university degree.[8]

Open end contracts are dominant among the contractual relations perfected by the involved firms (81 per cent of cases). Part-time work is widespread and involves 32 per cent of workers who freely chose a part-time position, and 12 per cent of workers who were confined by the firm in a part-time position. When it comes to the measurement of monetary variables, the average hourly wage was quite low even by Italian standards and equals 6.61 Euros.[9] Data from a previous study on the Italian

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workers, such as disabled and hard to employ workers. Most Type B social cooperatives work in traditional industrial sectors, but their workforce must include at least 30% of disadvantaged subjects. About 80% of the workers in the ICSI database work in Type A social cooperatives. Though the differences between type A and Type B social cooperatives are not explicitly considered in this paper, the econometric analysis in Section 3 includes detailed control for the different typologies of activities and clients/users of both Type A and Type B cooperatives. The type A cooperative industry classification includes: social assistance; health and rehabilitation; education, culture and recreation. Type A cooperative customers include: elderly people; children or adolescents; mentally or psychically disabled; victims of addiction; unemployed; homeless; immigrants. The - type B cooperative industry classification includes: agriculture; green maintenance; garbage collection and other environmental services; manufacturing (leather, paper, wood); retail; bar and restaurants; laundries; housing and housing maintenance; housemaid services; informatics, printing and call centers. Employee categories for which type B cooperative promote work integration are: physically disabled and psychically disabled; victims of addiction; ex-convicted; immigrants; young unemployed; long-term unemployed.

8 The Italian university system was reformed in 2000 and it is now based on the so called three plus two rule. After the initial three years that grant a degree equivalent to the BA, the students can choose to go on for further two years that are equivalent to the master level.

9 The wage is recorded in the database as net take-home pay. The survey recorded monthly wages. To obtain the hourly wage we use the number of weekly contractual work hours. The gross cost of labor, given by the net hourly wage plus taxation plus social contribution was not recorded. As a rule of thumb, the gross cost of labor in Italy is about double the take home pay. The exact coefficient of transformation varies on the bases of the marginal tax rate for different levels of income. The highest marginal rate in Italy, at the time of the survey, was 43%.

social service sector conducted in 1998[10] show that wages in social cooperatives were the lowest in the sector when compared to other organizational forms, i.e. the public sector and for profit firms, and also lower than in nonprofit organizations (Borzaga and Tortia, 2006). The monetary equivalent of fringe benefits was added to the hourly wage, though only 8.3 per cent of answerers reported this figure, and the difference between net hourly wage and net hourly wage plus fringe benefits is nil or negligible for all workers. The percentage of workers who stated an hourly wage lower than 5 Euros, a measure roughly similar to the Italian union base wage, is equal to 9.4 (296 workers). Six per cent of the workforce stated having received individual monetary incentives in the last accounting year, 2005). Among workers who perceived some monetary premium, both individual and/or collective, the average amount of the premium scored about 550 Euros yearly. This value is reduced to 77 Euros yearly if the whole workforce is considered. Workers employed by social cooperatives are to a great extent involved in interactions with clients and other users of the organization (56%). Much lower is the percentage of workers who are involved in coordination and managerial tasks (6 per cent) or that perform exclusively manual tasks (9 per cent). As for organizational variables, we consider only firm dimension, which equals an average of about 138 workers per firms, though variability across firms is extremely strong.

[10] The database concerned the Italian social service sector, and was financed by the foundations FIVOL (Italian **Foundation** for voluntary work) and FEO (European Foundation for Employment).

Table 1. Socio-demographic features and contractual position of the workforce

Variables	No. of observations	Average	Std deviation	Minimum	Maximum
Worker age	4134	37.40	9.01	17	73
Tenure	4134	5.70	5.47	0	36
Gender (1 = female)	4134	0.74	0.44	Dummy	
Married with children	4134	0.59	0.49	Dummy	
Education: secondary school	4134	0.52	0.50	Dummy	
Education: three years university degree	4134	0.11	0.32	Dummy	
Education: five years university degree or higher	4134	0.17	0.38	Dummy	
Open end contract	4134	0.81	0.39	Dummy	
Part-time	4134	0.32	0.47	Dummy	
Forced Part-time	4134	0.12	0.32	Dummy	
Hourly wage plus fringe benefits	3434	6.61	2.36	1.36	46.51
Individual monetary premium received last year	4105	0.06	0.23	Dummy	
Yearly amount of monetary premium	4134	77.20	285.34	0	6000
Job task: relationships with clients	4134	0.56	0.50	Dummy	
Job task: coordination	4134	0.06	0.23	Dummy	
Job task: manual worker	4134	0.09	0.29	Dummy	
Size of the firm (no. of employees)	4097	140.63	238.48	1	1702

Source: ICSI 2007 database

2.2. Motivations

In order to inquire the nature of motivational drivers in social cooperatives, workers were asked to answer the following question: "In general, how important are the following aspects of the work for you?" Descriptive statistics in Table 2 clearly show the complexity of drivers in worker behaviour and exclude the possibility of a simplistic reduction of motivations to some unique dimension, such as the monetary one. Workers are clearly motivated by social relatedness and usefulness of the job, but some other extrinsic and intrinsic aspects, such as job stability and the sharing of ideals also appear to play a crucial role. The employees surveyed rank wages and other economic incentives only sixth in importance and other extrinsic aspects even lower. Each of the 12 motivational items was evaluated on a 1 to 12 scale.[11]

[11] The number of observations concerning motivations, satisfaction and fairness in Table 2 to 4 is lower than 4134 due to missing values. We proceeded to substitute the missing values with imputed

Table 2. Job motivations items

Item	No. of observations	Average (1-12)	Standard deviation	Percent 10 or higher	Mode	Median
Extrinsic motivations						
Flexibility of working hours	3922	8.00	3.09	37.4	9	9
Wages and economic incentives	3932	8.63	3.00	49.2	12	9
Self-realization and career prospects	3911	8.38	3.12	44.8	12	9
Job stability	3950	9.52	2.79	61.9	12	11
Intrinsic motivations						
Autonomy, variety and creativity	3920	8.48	3.03	45.6	12	9
Job coherent with individual training	3915	7.06	3.69	33.0	1	8
Social visibility of the job	3905	7.20	3.51	32.5	12	8
Physical working environment	3927	7.44	3.69	38.4	12	8
Sharing common ideals and values	3944	8.77	3.25	52.5	12	10
Altruistic and relational motivations						
Helping disadvantaged people	3954	9.48	2.84	62.3	12	10
Relatedness on the job	3965	9.50	2.58	61.3	12	10
Relatedness with people outside job	3915	8.73	3.18	52.0	12	10

Source: ICSI 2007 database

Other regarding and relational motivations appear to be the most relevant ones, since most workers agree on the importance of carrying out activities useful for helping other people and on the necessity to work in an environment where relations are good. Extrinsic aspects of the job receive a high degree of attention too, especially in relation with job stability, economic remuneration and accomplishment in terms of career and self-realization. Among the items of intrinsic motivation, the search for variety and creativity and the search for common values and objectives appear dominant.[12]

values for all the variables included in this study. This procedure allows us to use imputed data in the econometric analyses in Section 3 in order to minimize the loss of usable observations.

[12] Even if these data are not displayed here and used in the analysis, the ICSI 2007 database includes also information on the features of workers' attitudes toward work before entering the organization and on the motivations for choosing a specific organization. Employees claim that before entering a social cooperative they were attracted by the opportunity to establish new relationships and by autonomy, but they were also interested in a job that met their economic needs. Working in a social cooperative, however, seem to increase their view of the job as an experience that enriched them personally, and gave them an opportunity for helping other people, improving relationships, and their professional satisfaction.

In order to assess the hypothesized three subdimensions, we quantify the ordinal categories for all the items of the involved Likert-type scale for the job motivations, and then perform an explorative factor analysis. Then we use the *Categorical Principal Component Analysis* (CatPCA; Michailidis and de Leeuw, 1998; Meulman *et. al*, 2004) for quantifying ordinal categories, with the number of the components p = 3, the number of the assumed subdimensions for the job motivations. The optimal quantifications are assigned to the categories of each item minimizing (by means of an alternating least squares algorithm) the following loss function simultaneously over **O** and the $\mathbf{Y}_j$'s:

$$L(O, Y) = \sum_{j=1}^{m} tr \| O - G_j Y_j \|^2$$

with $tr||\cdot||^2$ the trace operator of the squared norm of a matrix, $\mathbf{G}_j$ the indicator matrix of item j, **O** the $n \times p$ matrix of object scores for the n subjects, and $\mathbf{Y}_j$ the matrix containing the category quantifications of item j. As goodness of fit statistics we consider the Generalized Cronbach's Alpha (GCA) index and the Variance Accounted For (VAF) index, that are normalized (in the interval [0;100]) indices based on the total eigenvalue of the CatPCA solution. The quantified variables obtained from the CatPCA are then used for the standard *Exploratory Factor Analysis* (EFA; extraction method principal axis factoring and rotation method varimax with Kaiser normalization; Fabrigar *et al.*, 1999) to identify the hypothesized subdimensions by inspecting the factor loadings of the rotated solution. In this case, as goodness of fit statistic we consider the Rotation Explained Variance (REV) index, which is the normalized cumulative sums of squared loadings of the EFA rotated solution. The main results of this analysis are displayed in Table A.1 of the Appendix (columns EFA). The fit statistics are rather high (GCA = 94, VAF = 58 and REV = 45), and single out the three measurable subdimensions that appear to be predominantly connected to, respectively, (a) relational and other regarding motivations; (b) extrinsic motivations linked to the work environment; (c) intrinsic motivations linked to involvement, sharing of values, and achievement on the job. The factor loadings of the EFA rotated solution for some items (*Hours*, *Coherence*, *Ambient, Autonomy* and *Others*) show that these three subdimensions are not completely disjoint: each single measure for a latent subdimension cannot be interpreted as independent from the others. Moreover, the position of the item *Ambient* ("Physical working environment") is anomalous since it can appear to represent an extrinsic feature of the job (for this dimension the factor loading is equal to 0.39), while it is categorized by the EFA in the intrinsic motivational components (for this dimension the factor loading is equal to 0.61). One possible explanation is that workers perceive the surrounding environment as an inner part of their activity, while regulation, for example concerning work-hours, is perceived as imposed by external decision-makers, hence it enters the extrinsic component of motivations.

2.3. The work, wages and fairness

The average wage in 2005 was quite low if compared with the public sector and if the level of education is taken into account (Table 3). The majority of full-time workers earns less than 1200 Euros net per month, with an average of 1010 Euros, while part-time workers earn on average 688 Euros per month. All figures express net after tax

wages.[13]

Table 3. Average salaries (in Euros)

	Net wages in 2007	Per cent increase 1998-2005
Monthly salary		
Full-time	1010.40	31.5
Part-time	688.04	36.8
Hourly wage		
Full-time	6.36	23.7
Part-time	7.01	12.9

Source: ICSI 2007 database.

When analyzing the organizational environment, we first take into consideration distributive fairness. Workers were asked to evaluate their salaries as "fair" (assigning a score of 4), "unfair" (scores between 1 and 3) and "more than fair" (scores from 5 to 7). Table 4 shows that employees in social cooperatives perceive their salaries as fair (scores near 4) when they compare them with those of colleagues and superiors, and even with market averages. When workers consider the economic possibilities of their firm, results are again positive since most workers perceive their wage as at least fair. In this case modal values stress the dominance of fair outcomes in a predominant way. More problematic are the results concerning the perception of fairness relative to the individual aspects of the work activity, as when the wage is evaluated in relation to stress and tension, responsibility and the effort required on the job. In these cases, average values are close to 3 and modal values highlight a lower than fair perception of the wage. Still more problematic are the results concerning the perception of fairness relative to the cost of life in terms of purchasing power of the wage. In this case, answers stress overwhelmingly a level of wages that is too low. However, this negative perception is likely to be common to many other occupations and sectors in the Italian economy, given the low general level of wages and the increased cost of living observed over the past 10 years.

[13] However, from 1998 (the data of our previous survey) and 2007 net salaries increased in monetary terms by more than 30 per cent on average, climbing to about 1,000 Euros a month for full-time employees in 2007. This increase is partially explained by increased work-hours, since the hourly wage increased at a slower pace. The overall increase is still significant in real terms: discounting by annual inflation, the salary for full-time employees amounted to 863.88 Euros per month in 2007, compared to 768.24 in 1998, while the hourly rate rose to 5.91 Euros compared to 5.14 in 1998.

Table 4. Distributive fairness

All variables measured on a 1 to 7 Likert scale	No. of observations	Average Score	Standard deviation	Percent score 1-3	Percent score 4	Percent score 5-7
The wage is fair in comparison with…						
Level of education	3738	3.26	1.39	46.8	37.5	15.6
Training and experience	3841	3.29	1.36	50.4	34.9	14.8
On-the-job responsibility and role	3876	3.13	1.38	56.4	31.7	11.9
Effort required	3893	3.15	1.38	56.8	31.0	12.2
Stress and tension	3850	2.99	1.44	61.8	25.6	12.6
Loyalty to the cooperative	3686	3.56	1.45	38.6	40.9	20.4
Collective aspects						
The wages of colleagues in the cooperative	3240	3.77	1.18	22.2	49.1	28.9
The wages of employees in other organizations	2928	3.40	1.44	33.7	30.4	35.9
The wages of superiors	2821	3.79	1.25	20.6	40.5	38.8
The economic possibilities of the firm	3050	3.87	1.19	27.0	55.8	17.2
Distributive fairness, overall	3666	*3.36*	*1.29*	*48.7*	*34.1*	*17.1*
The cost of life	4037	*1.97*	*1.10*	*90.1*	*8.1*	*1.8*

Source: ICSI 2007 database

Procedural fairness is instead evaluated looking to processes, more than to organizational outcomes. The main aspects of procedural fairness taken into consideration relate to information flows, and to the transparency and equitableness of procedures in decision-making processes involving workers' personal position in the firm. Procedural fairness is usually sorted in a personal component, defined quality of treatment — which refers to the perception of fair treatment in the relations with superiors — and into a component that relates instead to the general working of the organization independently of workers' relation with their superiors — labelled procedural fairness proper or quality of decision-making (Tyler and Blader, 2000, 2003). As regards quality of treatment, data on relationships with superiors shows that employees give extremely good evaluations of the behaviours of their superiors, who are understood to be kind and helpful (level of agreement 6.2 on a scale from 1 to 7), perceptive to their needs, both personal and familiar and on-the-job, and open to paying attention to workers' proposals, supply advice, and correctly evaluate the quality of their results.

Fairness of decision-making is also perceived in a very positive way, though average scores are slightly lower than in the case of relations with superiors (Table 5). Scores are especially high when the quality of advice and guidelines communicated by the organization considered, the effort to keep to the promises expressed to workers ("the social cooperative abides with what has been promised"). The overall measure

of procedural fairness (5.9 on a 1 to 7 Lickert scale) mirrors the positive evaluation given by workers. If quality of treatment and quality of decision-making are related to worker on-the-job well-being in terms of satisfaction, then it is clear that they can represent a competitive advantage related to the inclusive features of the organizational form. They can positively impact workers welfare and expectations, and possibly balance some critical aspects related to the perception of distributive fairness.

Table 5. Procedural fairness

Variables (measured on a 1 to 7 Likert scale)	No. of observations	Average	Standard deviation	Mode	Median
Quality of treatment. Your superiors...					
Are kind and helpful	3886	6.15	1.23	7	7
Are sensitive to personal and family needs	3817	5.95	1.32	7	6
Are sensitive to on-the-job needs	3785	5.70	1.35	7	6
Pay attention to workers' ideas and proposals	3799	5.56	1.50	7	6
Give advice and guidance	3799	5.57	1.50	7	6
Give adequate weight to the quality of results	3806	5.78	1.38	7	6
Quality of decision-making. The firm...					
Gives advice and guidelines	3892	5.29	1.63	7	6
Collects complete information on worker activity	3722	5.10	1.67	7	5
Treats its workers in the same manner	3581	5.10	1.90	7	6
Has clear and shared goals	3697	5.23	1.65	7	6
Abides with what has been promised	3767	5.67	1.55	7	6
Quality of decision-making, overall	3885	*5.90*	*1.39*	*7*	*6*

Source: ICSI 2007 database

CatPCA and EFA were performed also in the case of fairness like in the case of motivations (Table A.2 in the Appendix): considering the four hypothesized subdimensions (a) distributive fairness - individual and (b) distributive fairness - others, (c) procedural fairness (also defined quality of decision-making since it refers to the routine procedures of decision-making characterizing the organization), and (d) relational fairness (also defined quality of treatment or interactional fairness since it refers to the relations between workers and their superiors), the fit statistics are high (GCA = 98, VAF = 74 and REV = 65). The rotated solution show that, as expected, each sub-dimension of the distributive fairness has moderately high factor loadings on the other sub-dimension, and that for the procedural and the interactional fairness there is the same empirical evidence too.

2.5. The context, rewards, and features of the job

Finally to be considered among factors potentially affecting worker well-being is the

context of operation and the features of job tasks. As a representation of the context we selected some variables that appeared most likely to be connected to worker well-being. They are interpreted in terms of the incentive mix offered by the organization, which encloses both monetary and non-monetary components. For example, the ability of the firm to grant to workers stability of employment, on-the-job autonomy, and participation in decision-making can result in higher worker well-being, even if the wage is kept constant. Hence, in our analysis, these are instances on non-monetary incentives (Borzaga and Tortia, 2006). The considered set of contextual variables is not exhaustive. However, the objective of our analysis was to put together a set of relevant dimensions, both individual and organizational, that necessarily depend on the context of operation on the one hand, and that, on the other hand, can impact at the individual level in terms of well-being. Descriptive statistics are reported in Table 6.

Table 6. Context, rewards, and working environment

	No. of observations	Average	Standard deviation	Mode	Median	Range
Professional growth	3999	4.29	1.67	7	4	1-7
Autonomy in the organization of job tasks	4017	4.70	1.96	7	7	1-7
Autonomy in problem solving	3949	4.25	1.95	7	4	1-7
Job stability	3863	3.82	1.08	5	4	1-5
Monetary incentives	3829	1.97	1.11	5	1	1-5
Participation in the mission of the organization	3841	3.13	1.24	5	3	1-5
Participation in decision-making	3852	2.88	1.26	5	3	1-5

Source: ICSI 2007 database

The organizations involved in the ICSI survey appear able to guarantee a good level of professional growth, and on-the job autonomy. Social cooperatives seem to take as one of their main aims the protection of employment also in periods of economic crisis. Less convincing results are obtained in the case of participation in decision-making and in the mission of the organization, which score around 3 on a 1 to 5 Lickert scale. Workers seem to give a "fair" evaluation concerning involvement processes, which, however, appear to require improvement. As expected, workers' judgment concerning the ability of the organization to use intensively and effectively monetary incentives is substantially lower than for any other typology of incentives. This is coherent with the idea that cooperatives are accustomed to pay low wages and to be evaluated critically on this dimension, but, at the same time, they are able to get very good evaluations of non-monetary organisational dimension.

2.4. Job satisfaction

The best possible proxy of workers' on-the-job well-being is represented by the stated degree of satisfaction with the activity performed. Stated satisfaction expresses a synthetic evaluation of the ability of the organization to fulfil workers' needs and expectations concerning different job dimensions. The survey questionnaire includes a list of 26 items of satisfaction concerning different aspects of the job, including the monetary remuneration and other outcomes, relational and procedural aspects, and

other aspects of the working environment.[14] Not all items will be used in this study. A selection was carried out by the authors on the basis of the expected relevance for a comprehensive and synthetic evaluation of worker satisfaction. The selection of satisfaction items stressed the relevance of the intrinsic and extrinsic components of satisfaction, since these are most likely to be related to worker motivations, to the inclusive governance of the organization in terms of fairness and transparency of procedures, and to the incentive mix implemented by the organization and directed to valorise both monetary and non-monetary aspects of the job. Average values of the 12 selected items are displayed in Table 7. Beyond the selected items, we add the individual items concerning overall job satisfaction and wage satisfaction. This way we aim at checking the coherence of the results concerning the selected aspects of the working environment, with the synthetic evaluation of the job as a whole and of the monetary aspects.

Average satisfaction is relatively high for all the considered items apart from the wage. However, satisfaction in general appears lower than in the case of procedural fairness and interactional fairness (Table 7). The items of extrinsic satisfaction show a strong homogeneity of results and high values, as also testified by their modal and median values. Stronger variability is shown by the average values of the items of intrinsic satisfaction. Social cooperatives appear particularly strong in satisfying their workforce in terms of autonomy and overall sense of self-realization. A good performance is also shown in terms of transparency of procedures, recognition of workers' contributions, and the ability to guarantee professional development. More problematic are the results concerning involvement in decision-making, which does not appear to be a characterizing feature of social cooperatives. Finally, weak results matching the relatively low score of wage satisfaction are achieved in the case of achieved and expected career prospects. Though the degree of wage satisfaction is low, the overall degree of job satisfaction is fairly high and this shows the ability of these firms to fulfil workers' expectations and needs on most dimensions of their activity.

[14] The English version of the questionnaire is available from the authors upon request.

Table 7. Satisfaction with different aspects of the job

Satisfaction with …	No of observations	Average (1-7)	Standard deviation	Mode	Median
Extrinsic aspects					
Work hours	4035	5.35	1.58	7	6
Flexibility of work hours	3966	5.41	1.55	7	6
Job security	3984	5.34	1.69	7	6
Work environment	3985	5.32	1.59	7	6
Social security	3946	5.49	1.61	7	6
Intrinsic aspects					
Involvement in the decision-making process	3999	4.29	1.67	4	4
Transparency of procedures	4027	4.90	1.69	4	5
Recognition of his/her work by the cooperative	4019	4.81	1.70	4	5
Professional development	3971	4.64	1.59	4	5
Autonomy in decision-making	3986	5.07	1.48	6	5
Achieved and expected career prospects	3861	3.83	1.71	4	4
Self-realization	3947	4.92	1.63	6	5
Variety and creativity of the job	3991	5.20	1.49	6	5
Wage satisfaction	4072	3.80	1.70	6	6
The job as a whole	3989	5.46	1.32	4	4

Source: ICSI 2007 database

CatPCA and EFA were performed on the whole set of satisfaction items like in the case of the motivational and fairness items (Table A.3 in the Appendix). Fit statistics are rather high (GCA = 93, VAF = 57 and REV = 49). It is important to note that for the construction of the extrinsic job satisfaction we do not include the item of the wage satisfaction. The first reason for this choice is statistical and refers to the fact that wage satisfaction does not fit with the two components singled out by factor analysis (intrinsic and extrinsic satisfaction). It appears to be positioned in between the two components, thus creating interpretation problems. The second reason is substantive: in our interpretation, wage satisfaction represents satisfaction with outcomes measured in monetary terms. Hence, its determinants are to be evaluated separately from the other items, which instead represent aspects of the job and of the working environment.[15] The factor loadings of the EFA rotated solution show that the two subdimensions are not completely disjoint: each single measure for a latent sub-dimension cannot be interpreted as independent from the other. Extrinsic satisfaction relates most of all to the work environment, to the flexibility of work-hours and to job security. The intrinsic components, as they emerge from the considered items, are similar to the idea of satisfaction with self-fulfilment and achievement in terms of professional growth, autonomy, and career. We add the satisfaction with the job as a whole and wage satisfaction.

Some empirical studies and theories based on morale models assert that job

[15] As shown in Table 2, the motivational items enclose instead the wage and monetary incentives. The different choice relative to the case of wage satisfaction can be explained again in two ways: from a statistical point of view, motivations driven by monetary incentives fit correctly in the extrinsic component of motivations. In substantive terms, it appears correct to study the interaction between monetary motivations and the different components of satisfaction, both intrinsic and extrinsic. As shown in Table 10, monetary motivations seem to dampen satisfaction, more than to enhance it.

satisfaction influences worker behaviour in terms of productivity (effort exerted) and loyalty to the organization. Nevertheless, nonprofit organizations and social enterprises have been criticized and considered sources of employment for workers without or with few other job opportunities. Our data shed some light on these contrasting interpretations by revealing patterns of workers' loyalty in terms of willingness to stay with the organization (Table 8).[16] Loyalty appears high and seems to have increased over time: 74.1 per cent of the interviewees want to stay in the organization as long as possible because they are satisfied with their jobs, while 13.5 per cent want to stay at least for some years. Only 6.5 per cent of workers intend to stay because they have no job alternatives. This is true the low level of wages and the weak perception of distributive fairness notwithstanding. Hence, weak monetary incentives do not appear to discourage workers from desiring the continuation of their activity in the firm also when a long temporal horizon is considered. When employees are differentiated by tenure, it appears that less than 10 per cent of workers that have been joining the firm for more than 10 years intend to search for another job. On the other hand, 20 per cent of individuals employed since less than two years look at the experience in their firm as a short term job. Improved training is their main aim.[17]

Table 8. Loyalty to the organization

Intend to…	**%**
Stay as long as possible	74.1
Stay only some years	13.5
Leave as soon as possible	1.9
Stay because of no alternatives	6.5

Source: ICSI 2007 database

3. The impact of motivational and organizational variables on worker well-being

In this section we first describe the statistical techniques that we used to reduce the number of dimensions in the data and obtain synthetic measurements of worker satisfaction and motivations. We then proceed to describe the results of econometric estimates concerning the impact of motivational and organizational variables on worker well-being in Italian social cooperatives.

As explained in section 2.1, in order to make sense of the complexity of the variables discussed in the descriptive part of the work, the items concerning worker satisfaction and motivations at the individual level and fairness and incentives at the organizational level, were first transformed into numerical variables by means of

[16] Unluckily, the ICSI 2007 database does not include interviews with workers who have resigned from organizations. However, turnover is low and this gives testimony to the stability of employment and adds to the idea that workers do indeed desire to keep on with their activity in the firm as long as possible.

[17] Though the ICSI 2007 database encloses also data on the stated degree of effort exerted on the job, the analysis of effort and productivity is likely to imply additional difficulties that cannot be dealt with in this paper. For example, the relation between effort and satisfaction is affected by severe problems of reverse causality and identification. Hence this analysis is postponed to future work.

CatPCA and then grouped into a limited number of dimensions by means of EFA. We then obtain subjective measures of quality of work for each sub-dimension of these constructs using the *Rasch Analysis* with the *Rating Scale Model* (Andrich, 1978; Wright and Masters, 1982; Brentari et al., 2007, Brentari and Golia, 2008). According with this model, the probability that worker *i* answers *x* on item *j* with (*c* + 1) ordered response categories is given by:

$$\pi_{ijx} = P(X_{ij} = x) = \frac{\exp \sum_{h=0}^{x} [\gamma_i - (\delta_j + \tau_h)]}{\sum_{k=0}^{m} \exp \sum_{h=0}^{k} [\gamma_i - (\delta_j + \tau_h)]} \qquad x = 0, 1, \ldots, c$$

where $\tau_0 \equiv 0$, so that $\exp \sum_{h=0}^{0} [\gamma_i - (\delta_j + \tau_h)] = 1$.

The probability π_{ijx} depends on worker attitude and item difficulty; in this context, the latter indicates how difficult the item is to endorse. The parameter γ_i identifies the "level of attitude" (for example the "level of job satisfaction") of worker i, δ_j the mean difficulty to endorse item j and τ_h - called threshold - is the point of equal probability of categories $(h-1)$ and h. Note that this model assumes unidimensionality and that the thresholds for all the items are the same, i.e. the items share the same rating scale structure. As goodness of fit statistic we consider the Rasch's Alpha (RA[18]) index, the raw Score to Measure correlation (SM) index, and the Explained Variance (EV) index, that are both normalized indexes (in the interval [0;100]) of the obtained solution.

Finally, the interpretation and evaluation of the results for each item is based on three standard statistics used in the Rasch Analysis: *Difficulty* (the estimate of how difficult it is, on average, for the workers to endorse each item), *Infit* (the weighted mean-square of the standardized residuals of the model, with expectation 1), and *Ptmea* (the point-measure correlation between the observations on the item and the corresponding person measures).

In the case of job satisfaction, three Rasch measures were extracted and named intrinsic, extrinsic and total satisfaction.

The main results of the Rasch analysis are shown in the right side (columns RSM) of the tables in the Appendix. Measurements were produced for the three different components of worker motivations evidenced in Table 2, and the same was done in the case of distributive fairness, procedural fairness (quality of decision-making), relations with superiors (quality of treatment), intrinsic and extrinsic job satisfaction.

Using Rasch Analysis, preliminary results for the motivation measures revealed that the order of the 12 categories of the scale is not respected, so the responses were merged together, obtaining the same 5-level response scale for each item: C1-C3, C4-C6, C7-C8, C9-C10 and C11-12. Probably because of the few categories and items, the diagnostic statistics for the RSM show that the reliability of these three measures are rather low (RA between 48 for relational motivations and 66 for intrinsic motivation), but they have high correlations with the raw scores (SM between 94 for

[18] We use the person reliability index of the model (Linacre, 1997). As in the standard item analysis, in this study the threshold roughly distinguish between low and high reliability of a measure with the value of the RA index set at 70%.

extrinsic motivations and 96 for relational motivations) and good enough explained variances (EV about 66). The item diagnostic statistics *Infit* (between 0.79 and 1.11) and *Ptmea* (between 0.58 and 0.80) show quite good overall results. Among the items of extrinsic motivations we find that *Stability* is easier (i.e. generally these workers consider this aspect of the work as one of the most important), while *Hours* is more difficult (i.e. generally these workers consider this aspect of the work as one of the less important). Among the items of intrinsic motivations, *Ideals* is more likely to be important while *Coherence* and *Utility* are more likely to be unimportant. Among the items of relational motivations, *Others* and *Colleagues* are more likely to be important, while *Users* are more likely to be less important.

For the three different response scales of the fairness dimension, the preliminary Rasch Analysis suggests the merging of categories C5-C6 for distributive fairness, obtaining a 6-level response scale, and of categories C1-C3 for interactional fairness, obtaining a 5-level response scale; diagnostic statistics (RA, SM and EV) for each of these four measures show in particular rather high reliability for the "individual" distributive fairness (RA = 89) and relatively low reliability for the "others" distributive fairness (RA = 63). The item diagnostic statistics *Infit* and *Ptmea* show good discrete overall results for the items: *Effort* and *Loyalty* (*Infit* 0.68 and 1.31 respectively) are exceptions for the "individual" distributive fairness. Among the items of this sub-dimension, *Loyalty* is easier to endorse (i.e. generally the workers think that their overall pay is quite fair for this aspect), while *Stress* is more difficult to endorse (i.e. generally the workers think that their overall pay is not so fair for this aspect). For the "others" distributive fairness, the item *Coop Resources* is perceived as fairer and *Wage Others* is more difficult to be perceived as fair; the items related to the wage of colleagues and superiors have roughly the same intermediate level of perceived fairness. As for procedural fairness (quality of decision-making), the item *Respect* is easily perceived as fair while *Information* and *Equality* are unlikely to be perceived as fair. Finally, among the items of interactional fairness (relations with superiors), *Availability* is easily perceived as fair, while *Listening* and *Advice* are more difficult to be perceived as fair.

For the two job satisfaction measures, the preliminary Rasch Analysis suggests to use for all these items a 5-level response scale (ordered categories C1, C2-C3, C4, C5-C6, C7). The obtained measures show fairly good reliability (RA index equal to 74 and 87 respectively), high score to measure correlation (SM index equal to 94 and 97 respectively) and high explained variance (EV index equal to 54 and 66 respectively); furthermore, items do not misfit (*Infit* index between 0.88 and 1.12) and have high correlation with the related measures (*Ptmea* index between 0.67 and 0.77). Considering the *Difficulty* index for extrinsic job satisfaction, we can see that *Security* is the aspect more easily satisfied, *Ambient* is the aspect more difficult to satisfy, and that *Hours* and *Flexibility* have roughly the same mean level of difficulty to be satisfied. However, the full range of the difficulty of these items is not very large (from -0.14 to 0.10). In the case of intrinsic job satisfaction, *Autonomy* is the aspect more easily satisfied and *Career* is the aspect more difficult to satisfy. For this measure, the range of the item difficulties is wider than the previous one (from -0.55 to 0.98).

The descriptive statistics of the Rasch measurements obtained from the foregoing analysis are reported in Table 9.

Table 9. Rasch measurements

	No. of obs.	Average	Standard deviation	Min	Max
Satisfaction					
Intrinsic satisfaction	4134	0.70	1.73	-5.39	6.13
Extrinsic satisfaction	4134	1.43	1.67	-4.37	5.02
Total satisfaction	4134	0.82	1.21	-5.18	5.77
Motivations					
Extrinsic motivations	4134	0.85	1.33	-3.67	3.65
Intrinsic motivations	4134	0.41	1.16	-3.40	3.40
Altruistic motivations	4134	1.28	1.46	-3.67	3.44
Fairness					
Distributive fairness (individual component)	4134	-0.96	2.33	-6.32	7.23
Distributive fairness (comparative component)	4134	-0.30	2.04	-5.67	7.67
Procedural fairness (decision-making)	4134	1.52	2.05	-4.33	5.20
Relations with superiors (quality of treatment)	4134	1.60	2.14	-4.88	4.96

Source: Our elaboration on the ICSI 2007 database

We endeavour to single out the individual and the organizational components in the interaction between motivations, fairness on the one hand, and worker well-being on the other. We do this by matching each individual worker with the 320 organizations that participated in the study. This way we can define two new centred variables, calculated as individual deviations from organizational averages and organizational deviations from overall averages:

$$RS_j = (RS_{ik} - \overline{RS}_k); \quad RM_i^C = (RM_i - \overline{RM}_{ik}), \quad RF_i^C = (RF_i - \overline{RF}_{ik}); \qquad (1)$$

where RS_i represent the three Rasch measurements for satisfaction, RM_i represent the three Rasch measurements for motivations, and RF_i represent the four Rasch measurements for fairness; i=1,2,…4134 represents individual worker cases, and k=1,2,…320 represent the organizations involved in the ICSI survey. In the following regression models we use the centred variables (1) and the organizational averages that are orthogonal: this specification, known as the Cronbach model, allows to obtain the decomposition of total effect on the dependent variable in within and between effects (Kreft and De Leeuw, 1988). In our study this means that with the models we can evaluate the impact on satisfaction of various individual and organizational dimensions both at the worker's level and at the cooperative's level: in this second case, motivations are connected to the recruitment choices of the organizations and fairness is connected with the climate in the organizations.

3.1. OLS estimation of the determinants of worker well-being

The econometric analysis is implemented in a cross section environment by means of standard OLS estimates which allow for robust standard errors to check for

heteroskedasticity of the error term.[19] In the analysis we use the three groups of Rasch variables just described. We add the socio-demographic and organizational variables in Table 1 in order to control for the different characteristics of workers and for firm dimension. Finally, we also use the group of variables in Table 6, which represent the individual perception of the instruments or incentives used by the organization to boost worker motivations and productivity.[20]

We produce four different models in which we add one at a time the four groups of regressors just described. Satisfaction is used as output variable representing the subjective, self-reported degree of worker on-the-job well-being. Beyond the three Rasch measures for satisfaction we also produce OLS estimates where the dependent variable is overall job satisfaction and wage satisfaction. Though this is not the best methodological solution, given the ordered nature of these last two variables, we chose the OLS solutions and not non-linear models such as the ordered probit in order to retain methodological homogeneity and to allow for a rough comparison with the results obtained using the Rasch measurements of satisfaction as output variables. Following Gelman (2008), for overcome the problem to compare the estimated coefficients of regressors with different scaling (dummies 0-1 and quantitative), they were rescaled by subtracting the mean and dividing by 2sd (two standard deviations), so that a 1-unit change in the rescaled predictor can be interpret as a change from 1sd below the mean to 1sd above; instead, the dependent variables are standardized using the usual transformation. Therefore, for the model with dependent variable a standardized measure of job satisfaction, the estimated regression coefficient for the rescaled measure of fairness corresponds to the impact on the job satisfaction - measured in its sd unit and at the mean levels of the other regressors - of fairness switching from a worker with low fairness perception (1 s.d. below the mean) to a worker with high fairness perception (1 s.d. above the mean). Note that this linear transformation of the variables does not affect the fit of the regression model (R^2 and *t*-statistic).

The first model (Table 10) considers only the socio-demographic variables.[21] The results of this exercise represent an important benchmark for the understanding of how the model is modified by adding new variables to our analysis, i.e. motivations, fairness and incentives. The first model can be algebraically represented as follows:

$$S_i = \alpha_i + \beta_i C_i + \varepsilon_i \qquad (2)$$

Where S_i is the level of satisfaction for each individual worker i, and it depends on a vector os socio-demographic variable C_i; while ε_i is a random error term. Results concerning socio-demographic variables broadly confirm what is already found in the literature. Satisfaction increases with age, but this is true most of all for the extrinsic component of satisfaction, while wage satisfaction is unaffected.

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19 Discussion of endogeneity issues is postponed to the end of this section.

20 We did not calculate the Rasch measurement of this fifth group of variables, because their substantive heterogeneity, which impede their fit into one unique Rasch variable.

21 We also included in all estimates the controls for the typology of services produced and for the typology of clients served which are listed in footnote 10. These coefficients will not be displayed for reasons of space and because virtually all of them are not statistically significant.

Women are generally more satisfied than men, but only for the extrinsic and monetary components of satisfaction. Educated workers, above all, university graduates, are less satisfied and the effect is strongest in the case of the monetary aspects and, in turn, these results are likely to be connected with the more precarious position of women on the labour market. Open-end contracts appear to exert a negative impact on satisfaction. However, this is true only in the case of the intrinsic and monetary components, because of a likely phenomenon of burn out of intrinsic motivations. On the other hand, extrinsic satisfaction is enhanced by long term contractual relations, probably because of the possibility to enjoy a quieter working environment, which, however, does not lead to improved career prospects and higher wages. Part-time work generates a general negative impact on satisfaction, though monetary outcomes seem to be enhanced. The negative effect becomes all the more strong for all the specifications of satisfaction when part-time is a solution imposed by the firm. A feeling of exclusion and reduced professional growth and career prospects is likely to determine this result. The hourly wage shows a strong positive linkage with intrinsic satisfaction and, as expected, with wage satisfaction. However, as observed in various other contributions (Borzaga and Tortia, 2006, for example) it is unrelated with overall job satisfaction. The wage is perceived as an intrinsic aspect of the work relation, as it is considered to be the outcome of professional growth and part of the self-realization of workers. The presence of individual monetary incentives shows a general positive relation with satisfaction in both its intrinsic and extrinsic components, though, interestingly enough, the linkage with wage satisfaction is not significant. The monetary amount of the monetary incentives received annually is positively related only to intrinsic satisfaction. When the typology of tasks performed by workers is considered, the interaction with clients induces a general reduction in the level of satisfaction, both intrinsic and extrinsic, and also in wage satisfaction, though this last effect is not statistically significant. This evidence is likely to be related to the intrinsic difficulties linked to the delivery of non-standardized and relational services such as social services, which are likely to engender a high degree of stress in the operators. Manual workers are instead more satisfied than the others about their pay.

Table 10. The impact of socio-demographic variables on worker well-being

Variables	Intrinsic satisfaction Coeff. (t)	Extrinsic satisfaction Coeff. (t)	Total satisfaction Coeff. (t)	Job Satisfaction Coeff. (t)	Wage satisfaction Coeff. (t)
Age	0,060	**0,192**	**0,120**	**0,146**	0,050
	(1.78)	**(5.49)**	**(3.57)**	**(4.27)**	(1.47)
Tenure	0,022	-0,004	0,004	-0,054	-0,034
	(0.55)	(-0.12)	(0.11)	(-1.51)	(-0.96)
Gender	0,040	**0,084**	0,058	**0,116**	**0,072**
	(1.25)	**(2.59)**	(1.75)	**(3.49)**	**(2.23)**
Married with children	-0,036	-0,026	-0,034	0,032	0,044
	(-1.16)	(-0.86)	(-1.13)	(1.04)	(1.44)
Secondary school	0,034	0,034	0,038	0,010	0,000
	(0.99)	(0.93)	(1.10)	(0.27)	(0.02)
University degree and higher	0,004	-0,048	-0,016	**-0,084**	**-0,138**
	(0.09)	(-1.36)	(-0.44)	**(-2.24)**	**(-3.85)**
Open end contract	**-0,070**	**0,120**	0,004	-0,034	**-0,136**
	(-2.10)	**(3.67)**	(0.11)	(-0.97)	**(-4.17)**
Part-time	**-0,08**	0,040	-0,044	-0,054	**0,074**
	(-2.44)	(1.17)	(-1.32)	(-1.65)	**(2.21)**
Forced part-time	**-0,258**	**-0,178**	**-0,260**	**-0,220**	**-0,244**
	(-8.03)	**(-5.59)**	**(-8.52)**	**(-5.97)**	**(-7.48)**
Hourly wage	**0,204**	0,052	**0,160**	0,036	**0,220**
	(5.55)	(1.43)	**(4.38)**	(1.02)	**(4.51)**
Presence of monetary incentives	**0,098**	**0,092**	**0,108**	0,014	0,046
	(2.50)	**(2.47)**	**(2.62)**	(0.48)	(1.35)
Amount of monetary incentives	**0,074**	0,016	0,068	0,008	0,050
	(2.00)	(0.43)	(1.81)	(0.24)	(1.41)
Relations with clients	**-0,102**	**-0,122**	**-0,120**	-0,002	-0,054
	(-2.79)	**(-3.31)**	**(-3.32)**	(-0.04)	(-1.53)
Coordination	**0,080**	-0,008	0,058	0,052	0,058
	(2.34)	(-0.28)	(1.68)	(1.68)	(1.81)
Manual worker	-0,018	0,042	0,010	0,022	**0,102**
	(-0.50)	(1.14)	(0.29)	(0.57)	**(2.89)**
Log Dimension (no. of Employees)	**-0,100**	-0,024	**-0,078**	0,000	**-0,134**
	(-2.59)	(-0.64)	**(-2.07)**	(-0.01)	**(-3.69)**
Central Italy	-0,040	-0,130	-0,084	-0,070	-0,056
	(-1.15)	**(-3.71)**	**(-2.39)**	(-1.90)	(-1.61)
Southern Italy	**0,234**	0,060	**0,190**	**0,122**	**0,240**
	(6.25)	(1.61)	**(4.96)**	**(3.45)**	**(6.75)**
Constant	-0,002	-0,002	-0,002	0,000	-0,004
	(-0.12)	(-0.18)	(-0.14)	(0.00)	(-0.23)

*Coefficients in bold statistically significant at least at the 5% level.
Model1: Number of obs= 4105; F(52, 4052)= 7.23; Prob > F = 0.0000; R-squared= 0.0815; Root MSE= .48217
Model2: Number of obs= 4105; F(52, 4052)= 6.52; Prob > F= 0.0000; R-squared = 0.0710; Root MSE= .48521
Model3: Number of obs = 4105; F(52, 4052)= 6.99; Prob > F = 0.0000; R-squared = 0.0796; Root MSE= .48324
Model4: Number of obs = 4105; F(58, 4052)= 6.74; Prob > F= 0.0000; R-squared= 0.0832; Root MSE= .48534
Model5: Number of obs= 4105; F(58, 4052)= 7.11; Prob > F = 0.0000; R-squared= 0.0876; Root MSE .48212=

The dimension of the firms shows a general negative relation with satisfaction. Given the measurement of dimension in terms of logarithm of the numbers of workers employed, this evidence amounts to a non-linear relation in which small organizations are characterized by a higher degree of satisfaction. Finally, we consider the territorial dummies of central and southern Italy, taking as a benchmark the biggest and most populated part of the country, i.e. northern Italy. We observe that workers in Southern Italy are more satisfied than in the rest of the country, while the opposite is true in the case of central Italy. The strong positive effect in the South, as we shall see, is linked to a higher perception of procedural fairness and better relations with superiors.[22]

The second model introduces an active role for motivations in influencing worker well-being. It can be represented in the following way:

$$S_i = \alpha + \beta C_i + \delta RM_i^C + \gamma \overline{RM}_{ik} + \varepsilon_i \qquad (3)$$

Where the added terms RM_i^C and $\overline{RM}_{ik}$ represent respectively the vectors of the Rasch variables concerning motivations at the individual level (individual deviations from organizational averages) and at the organizational level (organizational deviation from overall means). The motivational drivers of worker behaviour are introduced to highlight the connections between motivations and well-being which, in past studies, have already been recorded to be strong (Borzaga and Depedri, 2005), but not necessarily with a positive sign. Our findings confirm past results. Workers that show stronger intrinsic, altruistic, and relational motivations enjoy also a higher level of well-being.[23] The impact of intrinsic motivations on the intrinsic component of satisfaction is twice as big as the impact of intrinsic motivations on the extrinsic component of satisfaction. Hence, the effect of motivations is strongest on the ability of workers to reach self-realization and professional growth. Also, overall job satisfaction is greatly enhanced by the presence of proper motivational drives, which, however, in this case are more important in terms of other regarding and relational motivations. The same effects are found when the organizational average is considered. In general, also the average strength of intrinsic motivations at the organizational level appears to enhance individual well-being, though the effect is weaker than in the case of individual motivations.

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22 In turn, the higher perception of fairness may be linked to the much higher level of unemployment that characterizes the South relative to the other part of the Italian peninsula.

23 Given the standardization of variables suggested by Gelman (2008) workers that show a degree of intrinsic motivation that is one standard deviation above the mean show also a degree of satisfaction that is 20 per cent of one standard deviation higher than workers with intrinsic motivation one standard deviation under the mean.

Table 11. The impact of motivational aspects on worker well-being

Variables	Intrinsic satisfaction Coeff. (t)	Extrinsic satisfaction Coeff. (t)	Total satisfaction Coeff. (t)	Job Satisfaction Coeff. (t)	Wage Satisfaction Coeff. (t)
Age	0,032	**0,174**	**0,092**	0,116	0,038
	(0,98)	**(4,96)**	**(2,74)**	**(3,41)**	(1,10)
Tenure	0,010	-0,014	-0,006	-0,064	-0,0420
	(0,27)	(-0,33)	(-0,17)	(-1,85)	(-1,19)
Gender	0,022	**0,064**	0,036	**0,088**	**0,074**
	(0,69)	**(1,97)**	(1,09)	**(2,67)**	**(2,31)**
Married with children	-0,040	-0,030	-0,040	0,0280	0,040
	(-1,34)	(-0,96)	(-1,31)	(0,93)	(1,36)
Secondary school	0,020	0,020	0,022	-0,012	-0,0040
	(0,58)	(0,53)	(0,64)	(-0,35)	(-0,10)
University degree	0,0060	-0,0440	-0,0120	**-0,078**	**-0,138**
	(0,19)	(-1,26)	(-0,34)	**(-2,10)**	**(-3,84)**
Open end contract	-0,0580	**0,128**	0,016	-0,028	-0,130
	(-1,76)	**(3,90)**	(0,48)	(-0,80)	**(-3,97)**
Part-time	**-0,066**	0,0520	-0,0280	-0,0380	0,072
	(-2,06)	(1,58)	(-0,86)	(-1,18)	**(2,19)**
Forced part-time	**-0,248**	**-0,172**	**-0,250**	**-0,208**	**-0,236**
	(-7,77)	**(-5,42)**	**(-8,31)**	**(-5,79)**	**(-7,25)**
Hourly wage	**0,206**	0,056	**0,164**	0,044	**0,224**
Receive bonuses	**0,08**	**0,080**	**0,090**	-0,0020	0,0400
	(2,18)	**(2,17)**	**(2,29)**	(-0,06)	(1,17)
Amount of bonuses	**0,084**	0,022	**0,078**	0,022	0,060
	(2,27)	(0,61)	**(2,07)**	(0,65)	(1,68)
Relations with clients	**-0,108**	**-0,130**	**-0,128**	-0,016	-0,0520
	(-2,97)	**(-3,51)**	**(-3,55)**	(-0,47)	(-1,47)
Coordination	**0,078**	-0,0080	0,0560	0,048	0,054
	(2,31)	(-0,30)	(1,65)	(1,61)	(1,75)
Manual worker	-0,010	0,046	0,016	0,030	**0,108**
Employees (log dim.)	**-0,088**	-0,016	-0,068	0,018	**-0,122**
	(-2,32)	(-0,43)	(-1,81)	(0,44)	**(-3,34)**
Central Italy	-0,040	**-0,134**	**-0,086**	-0,058	-0,046
	(-1,13)	**(-3,87)**	**(-2,48)**	(-1,60)	(-1,32)
Southern Italy	**0,202**	0,0300	**0,158**	**0,090**	**0,216**
	(5,45)	(0,82)	**(4,14)**	**(2,52)**	**(6,03)**
Extrinsic motivation	**-0,152**	-0,0420	**-0,130**	**-0,158**	**-0,172**
	(-4,07)	(-1,29)	**(-3,56)**	**(-4,49)**	**(-4,86)**
Intrinsic motivation	**0,202**	**0,110**	**0,206**	**0,138**	**0,090**
	(5,08)	**(2,83)**	**(5,14)**	**(3,71)**	**(2,49)**
Altruistic and relational motivation	**0,176**	**0,146**	**0,182**	**0,314**	**0,102**
	(5,32)	**(4,31)**	**(5,37)**	**(9,23)**	**(3,06)**
Extrinsic motivation (average org.)	**-0,228**	**-0,178**	**-0,222**	**-0,246**	**-0,230**
	(-5,41)	**(-3,60)**	**(-5,01)**	**(-5,20)**	**(-5,23)**
Intrinsic motivation (average org.)	**0,178**	**0,202**	**0,208**	**0,120**	**0,048**
	(3,79)	**(3,77)**	**(4,26)**	**(2,30)**	**(0,94)**
Altruistic motivation (average org.)	**0,100**	**0,074**	**0,092**	**0,258**	**0,102**
	(2,21)	**(1,54)**	**(2,02)**	**(5,33)**	**(2,28)**
Constant	-0,0020	-0,0020	-0,0020	0,0000	-0,0020
	(-0.08)	(-0.16)	(-0.11)	(0.04)	(-0.19)

*Coefficients in bold statistically significant at least at the 5% level.

Model1: Number of obs= 4105; F(58, 4046) = 8.74; Prob > F = 0.0000; R-squared= 0.1083; Root

MSE=.47544
Model2: Number of obs= 4105; F(58, 4046) = 7.34; Prob > F = 0.0000; R-squared= 0.0883; Root MSE=.48104
Model3: Number of obs= 4105; F(58, 4046) = 8.47; Prob > F = 0.0000; R-squared= 0.1083; Root MSE=.47597
Model4: Number of obs= 4105; F(58, 4046) = 8.22; Prob > F = 0.0000; R-squared= 0.0957; Root MSE=.47556
Model5: Number of obs= 4105; F(58, 4046) = 8.56; Prob > F = 0.0000; R-squared= 0.1012; Root MSE=.47919

Hence, a stimulating work environment is found to improve well-being for each individual worker.

Opposite results are found in the case of extrinsic motivations, which reduce worker well-being. Workers driven prevalently by the desire to obtain higher wages, career advancements and employment protection are likely to be frustrated by actual achievement and to report a low level of on-the-job well-being. The effect in the case is stronger for organizational averages than at the individual level. The negative impact of the organizational average of extrinsic motivations has a similar magnitude for all the components of satisfaction, though it is slightly weaker in the case of extrinsic satisfaction. At the individual level, instead, the impact on intrinsic satisfaction is three times as big as the impact on extrinsic satisfaction.[24]

The introduction of motivations in regression analysis is also a way to check for the self-selection of different kinds of workers into a specific typology of organization, such as social cooperatives producing social services. The specific conception of the work expressed by each individual worker, by making explicit his or her main motivational drives, helps to eliminate the impact of specific motivations, and especially of socially oriented motivations, in the production of social services. Though we are unable to demonstrate that the results concerning satisfaction in the social service sector and in mutual benefit organizations can be generalized and exported to other sectors of economic activity, a high degree of reliability of our results is likely to be guaranteed by the possibility to apply the coeteris paribus to individual motivations.

The third model leads us to the introduction of fairness concerns as determinants of worker well-being. Its algebraic representation introduces the vectors representing the individual deviations of the Rasch variables relative to the organizational mean (distributive fairness, quality of treatment, quality of decision-making), RF_i^c, and the deviation of the organizational averages relative to the overall mean, $\overline{RF_{ik}}$:[25]

$$S_i = \alpha + \beta C_i + \delta RM_i^C + \gamma \overline{RM_{ik}} + \varphi RF_i^C + \phi \overline{RF_{ik}} + \varepsilon_i \qquad (4)$$

[24] Organizations in which extrinsic motivations are dominant display a level of individual well-being on-the-job that is 20% of one standard deviation lower than organizations that score one standard deviation under the mean.

[25] In the estimates concerning fairness the comparative component of distributive fairness was eventually dropped because it is highly collinear with the individual component of distributive fairness and because its impact is never statistically significant.

When the variables representing fairness are introduced, we confirm the results already found in past studies (Helliwell and Huang, 2005; Tortia, 2008), which identify in the search for fair outcomes and procedures the most relevant determinant of worker well-being inside the organization.[26] Conversely, the perception of unfair distribution of outcomes, or of unfair treatment and quality of decision-making appear to undermine workers' on-the-job well-being. Among the considered variable, good relations with superiors emerge as the most important determinant of worker well-being. Their impact is strongest in the case of intrinsic satisfaction. Hence it is strictly linked with workers' achievement and self-realization. Conversely, it appears weakest in the case of wage satisfaction. The impact of the quality of treatment on the intrinsic component of satisfaction is four times as big as the impact on wage satisfaction.[27] However, this last impact is bigger than the impact of any of the motivational items on any of the specifications of satisfaction. These estimates highlight the magnitude of the impact of the quality of relations with superiors on worker well-being.

Similar results, albeit weaker, are obtained for organizational averages. The effect of the quality of treatment has to be compared with the effect of the quality of decision-making, since the latter represents a more formalized and impersonal dimension of the procedural milieu than the former. Although they also show difference, the two components of fairness resemble each other because they both share a procedural nature, and because their impact on well-being is extremely strong. As expected, the impact of the organizational averages is stronger in the case of the quality of decision-making, than in the case of the quality of treatment. The two impacts are similar at the organizational level, but the quality of treatment shows a much stronger impact at the individual level (about 50% higher for all the components of satisfaction). This result testimonies that the quality of decision-making is perceived by workers as a stable feature of the organization, at least partly independently from the interaction with their superiors. Distributive fairness is important as well and its coefficient shows a positive signs and a statistically significant impact on all the dimensions of individual satisfaction. As expected, the impact is strongest in the case of wage satisfaction. This results lends coherence to the distinction of a perspective that focuses exclusively on monetary outcomes from a perspective that considers instead also processes and intrinsic aspects of well-being.

The organisational average in itself shows a positive impact on satisfaction, albeit weaker than the case of the individual perceptions. Finally, the adequacy of the wage relative to the cost of life increases worker well-being, even if this variable is never so important like procedural fairness and relations with superiors. Its impact is crucial in the case of wage satisfaction, while it is weaker in the case of overall job satisfaction. Having a look at the way in which the coefficients of socio-demographic variables are changed by the introduction of fairness concerns, we notice, for example, that the coefficient of Southern Italy turns from highly significant and positive to highly significant and negative. On the one hand, this result confirms the strong positive bias in the perception of fairness in the Southern Italy. On the other hand, it is clear that the impact of fairness on worker well-being is so strong that it can change the

[26] In Table 12 we report only the variable concerning motivations, fairness and incentives, while the coefficients of the socio-demographic variables, for reasons of space, are relegated in appendix C.

[27] Workers perceiving a quality of treatment that is one standard deviation above the mean are characterized by a degree of intrinsic satisfaction that is 64% of one standard deviation higher than workers characterised by a perception of quality of treatment under the mean.

direction of the impact of the other variables. Interestingly enough, the dummy for Central Italy retains its positive sign also when fairness is introduced. Hence, fairness interacts strongly only with the Southern Italy dummy. A second example of the strength of the effect of fairness perception is represented by part-time contract imposed by the firm (Appendix B).[28] The negative impact of this variable is reduced by the introduction of fairness and this is clearly due to the feeling of unfair procedures which accompany the imposition of part-time work. As we shall see shortly, part-time work imposed by the organization shows a strong negative correlation with the utilization of various kinds of incentives, not only in monetary terms, but also in terms of involvement and participation. This is why the explicit introduction of the variables representing the incentive structure dampens the significance of imposed part-time work. Intuitively, it is clear that part-time workers undergo the effects of less inclusive governance and incentives.

[28] The results concerning socio-demographic variables when fairness and incentives are enclosed in the estimates are found in Appendix B.

Table 12. The effects of fairness and incentives on worker well-being

Variables	Sod Int Coeff. (t)	Sod Est Coeff. (t)	Sod Tot Coeff. (t)	Job Sat Coeff. (t)	Wage Sat Coeff. (t)	Sod Int Coeff. (t)	Sod Est Coeff. (t)	Sod Tot Coeff. (t)	**Job Sat Coeff. (t)**	**Wage Sat Coeff. (t)**
Extrinsic motivation	**-0,078**	0,016	-0,054	**-0,100**	**-0,076**	**-0,054**	0,020	-0,036	**-0,094**	**-0,070**
	(-2,62)	(0,48)	(-1,85)	**(-3,19)**	**(-2,67)**	**(-2,01)**	(0,63)	(-1,33)	**(-2,94)**	**(-2,47)**
Intrinsic motivation	**0,096**	0,028	**0,102**	0,052	0,026	**0,082**	0,032	**0,092**	0,052	0,018
	(3,24)	(0,86)	**(3,38)**	(1,60)	(0,90)	**(3,01)**	(0,96)	**(3,24)**	(1,57)	(0,64)
Altruistic motivation	0,026	0,036	0,036	**0,198**	**0,058**	0,032	0,038	0,040	**0,196**	**0,062**
	(1,05)	(1,19)	(1,35)	**(6,40)**	**(2,11)**	(1,33)	(1,28)	(1,59)	**(6,40)**	**(2,29)**
Extrinsic motivation (average org.)	-0,066	-0,052	-0,056	**-0,162**	**-0,092**	-0,066	-0,066	-0,058	**-0,168**	**-0,092**
	(-1,90)	(-1,08)	(-1,47)	**(-3,57)**	**(-2,54)**	(-1,94)	(-1,37)	(-1,55)	**(-3,68)**	**(-2,49)**
Intrinsic motivation (average org.)	0,068	**0,126**	**0,102**	0,066	0,026	0,042	**0,140**	**0,088**	0,070	0,010
	(1,80)	**(2,49)**	**(2,53)**	(1,32)	(0,62)	(1,17)	**(2,77)**	**(2,20)**	(1,37)	(0,23)
Altruistic motivation (average org.)	-0,030	-0,012	-0,032	**0,188**	**0,082**	-0,016	-0,014	-0,024	**0,192**	**0,094**
	(-0,81)	(-0,26)	(-0,83)	**(4,29)**	**(2,13)**	(-0,46)	(-0,31)	(-0,66)	**(4,32)**	**(2,40)**
Distributive fairness	**0,158**	**0,182**	**0,186**	**0,182**	**0,610**	**0,132**	**0,178**	**0,166**	**0,174**	**0,600**
	(5,65)	**(5,83)**	**(6,77)**	**(5,52)**	**(21,04)**	**(4,94)**	**(5,72)**	**(6,18)**	**(5,31)**	**(20,50)**
Procedural fairness	**0,502**	**0,398**	**0,500**	**0,422**	**0,150**	**0,352**	**0,328**	**0,368**	**0,358**	**0,118**
	(16,24)	**(11,43)**	**(16,41)**	**(11,78)**	**(4,87)**	**(11,92)**	**(9,27)**	**(12,23)**	**(9,83)**	**(3,68)**
Relationships with superiors	0,642	0,438	0,622	0,444	0,188	0,506	0,360	0,496	0,368	0,168
	(23,03)	**(12,87)**	**(21,50)**	**(14,01)**	**(6,42)**	**(18,78)**	**(10,46)**	**(17,61)**	**(11,30)**	**(5,55)**
Distributive fairness (average org.)	**0,082**	**0,148**	**0,130**	**0,050**	**0,480**	**0,084**	**0,150**	**0,130**	**0,056**	**0,472**
	(2,41)	**(3,91)**	**(3,91)**	(1,31)	**(13,47)**	**(2,60)**	**(4,02)**	**(4,08)**	(1,42)	**(13,1)**
Procedural fairness (average org.)	**0,408**	**0,356**	**0,416**	**0,248**	0,056	**0,326**	**0,316**	**0,344**	**0,208**	0,042
	(9,70)	**(7,02)**	**(10,07)**	**(5,36)**	(1,28)	**(8,08)**	**(6,29)**	**(8,60)**	**(4,47)**	(0,95)
Relationships with superiors (av. org.)	**0,330**	**0,172**	**0,302**	**0,140**	**0,092**	**0,206**	**0,116**	**0,192**	**0,088**	0,074
	(9,47)	**(4,21)**	**(8,63)**	**(3,35)**	**(2,47)**	**(6,05)**	**(2,84)**	**(5,55)**	**(2,11)**	(1,95)
Cost of life	**0,228**	**0,142**	**0,246**	**0,086**	**0,506**	**0,174**	**0,128**	**0,202**	**0,072**	**0,496**
	(8,05)	**(4,30)**	**(8,14)**	**(2,91)**	**(15,89)**	**(6,43)**	**(3,82)**	**(6,90)**	**(2,44)**	**(15,48)**
Professional growth						**0,214**	0,006	**0,144**	**0,142**	-0,024
						(9,89)	(0,21)	**(6,71)**	**(4,77)**	(-0,91)
Autonomy in work organisation						**0,274**	**0,188**	**0,268**	**0,164**	**0,080**
						(10,11)	**(5,59)**	**(9,64)**	**(4,73)**	**(2,56)**
Autonomy in problem solving						**0,094**	0,008	**0,056**	-0,008	-0,012
						(3,52)	(0,25)	**(1,97)**	(-0,21)	(-0,39)
Job stability						**0,104**	**0,266**	**0,176**	**0,152**	0,004
						(4,16)	**(8,89)**	**(6,93)**	**(4,62)**	(0,17)
Use of monetary incentives						0,040	-0,032	0,026	-0,012	**0,064**
						(1,47)	(-0,90)	(0,85)	(-0,36)	**(2,19)**
Participation in the mission						**0,156**	-0,004	**0,102**	0,028	0,050

Participation in decision-making						**(5,16)** **0,288** **(8,82)**	(-0,10) 0,020 (0,45)	**(3,46)** **0,212** **(6,58)**	(0,67) 0,058 (1,37)	(1,32) 0,038 (1,02)
Constant	0,000 (-0,05)	-0,002 (-0,13)	0,000 (-0,07)	0,000 (0,07)	-0,002 (-0,16)	0,000 (-0,09)	-0,002 (-0,21)	-0,002 (-0,17)	0,002 (0,10)	-0,004 (-0,33)

Model1: Number of obs=; F(65, 4039) = 44.75; Prob > F = 0.0000; R-squared= 0.4799; Root MSE=.36341
Model2: Number of obs=; F(65, 4039) = 28.29; Prob > F = 0.0000; R-squared= 0.2995; Root MSE=.42204
Model3: Number of obs=; F(65, 4039) = 42.20; Prob > F = 0.0000; R-squared= 0.4806; Root MSE=.36358
Model4: Number of obs=; F(65, 4039) = 35.27; Prob > F = 0.0000; R-squared= 0.4118; Root MSE=.37225
Model5: Number of obs=; F(65, 4039) = 41.18; Prob > F = 0.0000; R-squared= 0.4658; Root MSE=.39154
Model6: Number of obs=; F(72, 4004) = 58.17; Prob > F = 0.0000; R-squared= 0.5605; Root MSE=.33436
Model7: Number of obs=; F(72, 4004) = 28.07; Prob > F = 0.0000; R-squared= 0.3201; Root MSE=.41559
Model8: Number of obs=; F(72, 4004) = 47.85; Prob > F = 0.0000; R-squared= 0.5353; Root MSE=.34347
Model9: Number of obs=; F(72, 4004) = 36.52; Prob > F = 0.0000; R-squared= 0.4526; Root MSE=.35816
Model10: Number of obs=; F(72, 4004) = 42.24; Prob > F = 0.0000; R-squared= 0.4722; Root MSE=.36023

The last model introduces explicitly the variables representing the incentive structure. It can be represented algebraically as follows:

$$S_i = \alpha + \beta C_i + \delta RM_i^C + \gamma \overline{RM}_{ik} + \varphi RF_i^C + \phi \overline{RF}_{ik} + \lambda I_i + \varepsilon_i$$

Where I_i is the vector of variables representing the incentives offered by the organization to boost the alignment between worker motivation and firm objectives, and improved worker performance. The coefficients and t statistics displayed in Table 12 make clear that the incentive structure of the organization has a strong impact on worker well-being mainly in its intrinsic component. Autonomy in the organization of the work and professional growth appear to exert the most relevant impact on satisfaction with achievement on the work and self-realization. The same is true, though to a lesser extent, for participation in decision-making and in the mission of the organization. The impact of the former two variables appears to be twice as big as the impact of the latter couple of variables. Participation in the mission of the organization and in decision-making exerts a strong influence on well-being as well, but only on its intrinsic component. The latter variable shows a stronger impact then the former, and its effect is similar in magnitude to the one of autonomy and professional growth. Hence, it appears the importance of worker participation advocated by many studies is not misplaced, when it is properly aligned with the pursuit of organizational objectives. Job stability, together with employment, is the feature of the job that influences in the most consistent way all the components of satisfaction, with the exception of wage satisfaction. However, contrary to autonomy and participation, job stability influences the extrinsic more than the intrinsic component of satisfaction. It appears to be a crucial feature of the contractual relation, since it reduces the risks of unemployment, empowers workers' expectations and motivations within the organization, and lengthens workers' temporal horizon in terms of professional growth.

3.2. Issues of endogeneity

We are aware of the potentially serious problems arising from endogeneity, i.e. correlation of the regressors with the error term. Endogeneity problems are likely to be related to both the presence of omitted variables, self-selection and inverse causality. For example, when the source of endogeneity is represented by inverse causality, more satisfied workers may be able to reach a higher degree of on-the-job autonomy, or to accomplish better professional growth, since they are more likely to get involved in the activity of the firm and to align their objectives with those of the firm. In this sense, incentives might be understood as final outcomes of the interaction between the worker and the structure, not as the determinants of worker well-being. The same argument applies to the relations between workers and their superiors (quality of treatment). More satisfied workers are likely to accomplish better relations with their superiors. If this is true then the bidirectional causal effects between satisfaction and individual worker position can generate inconsistent estimators in the OLS framework. It is also clear that there can be inverse causality between satisfaction and monetary outcomes. More motivated and satisfied workers are likely to obtain higher salaries and monetary incentives. Hence again, OLS estimates are likely to be inconsistent. Also the ubiquitous problem of omitted variables can engender severe problems of inverse causality. If some unobserved variable influences both the organizational dimension and satisfaction, the estimates are again likely to be inconsistent. However, the richness of the database, the long list of controls, and the unique availability of variables directly measured at the individual

level, make us confident about the substantive validity of the result. As said in the previous section, the problem of self-selection of specific typologies of workers in a specific organizational form such as the social cooperative has been addressed mainly by controlling for individual characteristics and motivational drivers.

Though an in depth analysis of endogeneity will not be carried out, we can defend our work on various grounds. First, at the substantive level it is clear that worker well-being can be taken as one of the main outcomes of the firm operation (Stiglitz, 2009) beside output, productivity and service quality. It is also clear that, in the interaction between the worker and the organizational structure, the influence of the latter on the behavioural predispositions of the former cannot be excluded (Hodgson, 2006). Indeed, it is likely to represent a conspicuous part of the observed correlations. This is testified also by the significance of the organizational averages of the Rasch measurements. If a causal relation running from the organizational structure to the individual were absent, data within the organization would be distributed randomly, and the significance of the organizational averages would be much reduced. Second, the statistical significance of most of the discussed coefficients is so strong, that it is likely to be found in conjunction with the underlying causal effects, even if, in principle, other omitted variables or reverse causality could change the picture in a relevant way. Third, some of the variables that are central in our model, such as procedural fairness, are likely to represent stable features of the organization, hence to be quite independent of the individual interaction between the worker and the organization. Indeed, workers were asked to evaluate the behaviour of the cooperative in terms of quality of decision-making independently of their personal position. Though it is still possible that the "warm glow" of the organization is better perceived by more satisfied workers, we do not expect problems of endogeneity to be severe at least in the case of procedural fairness. Fourth, even when inverse causality is not excluded like in the case of autonomy and professional growth, the OLS estimates make clear that the strongest statistical linkage is found with satisfaction in terms of self-realization and professional growth. Hence, satisfaction appears to be more the outcome than the determinant of professional growth. These are the theoretical reasons supporting the usefulness of the presented model also in the presence of conspicuous risks of endogeneity bias.

Other methodological hints are to be added. First, given the high complexity of the model, an in depth treatment of endogeneity would be extremely cumbersome and unmanageable within one single article. Hence, this analysis is postponed to future, more focalized, work. Second, we introduce a wide range of control variables, which should be able to reduce as much as possible (within the scope of the ICSI2007 database) the presence of estimation inconsistency dependent on omitted variables. Third, the introduction of instrumental variable estimation is not without drawbacks. As it is well known, two stages least squares estimation can deliver poorer results than ordinary least squares when the correlation between the endogenous variables and the instruments is weak and instruments themselves show a non-zero correlation with the residuals. Fourth, given the ad hoc nature of the ICSI 2007 database the search for instrumental variables that are relevant for the whole sample of micro-data is likely to be particularly difficult.

Because of these reasons, at the present stage of our analysis, we remain with OLS estimation and we do not derive precise policy implications from our work.

Concluding remarks

The present contribution has been devoted to the analysis of the interplay between worker well-being, worker motivations and various organizational dimensions in the Italian social service sector. We took into consideration one specific typology of organizational form, the social cooperative, which is understood as a form of social enterprise delivering social services and characterized by a mutual benefit governance structure (Borzaga and Tortia 2010). We utilized the ICSI 2007 database that was built in an ad hoc way in order to study labour relations in social enterprises. The ICSI database considers major individual and organizational dimensions, such as motivations, satisfaction, fairness, and autonomy.

Results show that worker well-being is greatly influenced by the considered individual and organizational factors. Motivational factors emerge as preconditions able to enhance or dampen individual well-being. However, the most relevant factors influencing worker well-being are identified in the interplay between the individual and the organizational dimension and are linked mainly to procedural and distributive fairness, but also to non-monetary incentives, such as autonomy and participation in decision-making. Also, monetary incentives and the wage, whose relevance was denied by some studies show a positive linkage with the intrinsic component of satisfaction, which is understood in terms of self-fulfilment and professional achievement. The richness of the ICSI database allows a comprehensive and in depth picture to be taken of the most important factors influencing well-being on-the-job and this work has represented only the first comprehensive step leading to more in depth and focused analyses.

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Appendix A

In this appendix we present a synthesis of the results for the construction of the measures of the quality of work used in the models of paragraph 4.

Table A.1. *Summary of the two step procedure for the* 3 *measures of the Motivations of work*
(12 items for 3 subdimensions; GCA = 94; VAF = 58; REV = 45)
Question: **In general, how important are the following aspects of the work for you?**
Response scale: rating from 1 = "*Less important*" to 12 = "*Most important*".

Measures and Items	***Descriptions***	**EFA** ***Factor loadings***			**RSM** ***Difficulty***	***Infit***	***Ptmea***
EXTRINSIC MOTIVATIONS RA = 62; SM = 94; EV = 63							
Hours	Flexibility of working hours	0.50	0.28	0.23	0.34	1.11	0.68
Career	Self-realization and career prospects	0.56	0.22	0.02	0.15	1.07	0.68
Wage and incentives	Wage and economic incentives	0.83	0.01	0.08	0.01	0.79	0.74
Stability	Job stability	0.56	0.26	0.09	-0.50	1.10	0.63
INTRINSIC MOTIVATIONS RA = 66; SM = 95; EV = 62							
Coherence	Coherence with education and professional background	0.35	0.51	0.12	0.27	1.08	0.65
Utility	Social visibility and utility of the job	0.21	0.69	0.24	0.23	0.84	0.70
Ambient	Physical working environment	0.39	0.61	0.18	0.12	0.97	0.67
Autonomy	Autonomy, variety and creativity	0.38	0.50	0.13	-0.24	0.97	0.61
Ideals	Sharing of values and ideals	0.01	0.55	0.20	-0.37	1.10	0.58
RELATIONAL MOTIVATIONS RA = 48; SM = 96; EV = 62							
Users	Relations outside the job (clients and users)	0.05	0.12	0.73	0.33	0.82	0.80
Others	Support disadvantaged people	0.04	0.25	0.51	-0.16	1.09	0.71
Colleagues	Relations on-the-job	0.20	0.15	0.61	-0.17	0.95	0.73

Quantification method: Categorical Principal Component Analysis (CatPCA)
Extraction method: Exploratory Factor Analysis (EFA; principal axis factoring of the CatPCA quantifications)
Rotation method: Varimax with Kaiser normalization
Measurement method: Rasch Analysis with the Rating Scale Model (RSM)

Table A.2. *Summary of the two step procedure for the 4 measures of the Fairness of work*
(20 items for 4 subdimensions; GCA = 98; VAF = 74; REV = 65)
Question for the *Distributive Fairness*: **Do you think that your overall pay is fair compared with...**
Response scale: 1 = "*Much less than fair*", 2,..., 4 = "*Fair*",..., 6, 7 = "*Much more than fair*".
Question for the *Procedural Fairness*: **How much do you agree with the following statements?**
Response scale: 1 = "*Strongly disagree*", 2,..., 6, 7 = "*Strongly agree*".
Question for the *Interactional Fairness*: **Your supervisor or your superiors...**
Response scale: 1 = "*Definitely not*", 2,..., 4 = "*Neither yes nor no*",..., 6, 7 = "*Definitely yes*".

Measures and Items	***Descriptions***	**EFA** ***Factor loadings***				**RSM** ***Difficulty***	***Infit***	***Ptmea***
DISTRIBUTIVE FAIRNESS - INDIVIDUAL								
RA = 89; SM = 96; EV = 74								
Stress	Stress and tension	0,76	0,23	0,13	0,08	0.45	1.09	0.83
Responsibility	Responsibility and role	0,83	0,21	0,14	0,08	0.18	0.80	0.86
Effort	Effort required	0,86	0,22	0,12	0,06	0.14	0.68	0.88
Training	Training and experience	0,70	0,27	0,16	0,07	-0.15	1.09	0.82
Loyalty	Loyalty to the cooperative	0,65	0,36	0,12	0,08	-0.62	1.31	0.79
DISTRIBUTIVE FAIRNESS - OTHERS								
RA = 74; SM = 62; EV = 63								
Wage Others	The wages of employees in other organizations	0,29	0,59	0,05	0,01	0.56	1.19	0.78
Wage Colleagues	The wages of colleagues in the cooperative	0,26	0,70	0,05	0,03	-0.14	0.93	0.75
Wage Superiors	The wages of superiors	0,22	0,79	0,08	0,09	-0.15	0.90	0.77
Coop Resources	The economic resources of the cooperative	0,25	0,69	0,12	0,10	-0.28	0.87	0.77
PROCEDURAL FAIRNESS								
RA = 80; SM = 83; EV = 77								
Information	Collects complete information on worker activity	0,14	0,07	0,78	0,26	0.23	0.91	0.82
Equality	Treats its workers in the same manner	0,14	0,11	0,75	0,27	0.23	1.17	0.80
Targets	Has clear and shared goals	0,16	0,09	0,78	0,30	0.06	0.81	0.82
Guidelines	Gives advice and guidelines	0,15	0,05	0,76	0,28	0.00	0.94	0.80
Respect	Respect what has been promised	0,11	0,09	0,68	0,35	-0.52	1.16	0.74
INTERACTIONAL FAIRNESS								
RA = 79; SM = 95; EV = 73								
Listening	Pay attention to workers' ideas and proposals	0,01	0,08	0,22	0,79	0.43	1.02	0.81
Advices	Give advices and guidance	0,10	0,05	0,30	0,73	0.40	1.07	0.80
Working needs	Are sensitive to on-the-job needs	0,11	0,07	0,22	0,84	0.20	0.77	0.83
Attention	Give adequate weight to the quality of results	0,09	0,05	0,32	0,71	0.02	1.11	0.78
Personal needs	Are sensitive to personal and family needs	0,07	0,04	0,19	0,80	-0.31	1.02	0.77
Availability	Are kind and helpful	0,02	0,05	0,22	0,76	-0.74	1.06	0.73

Quantification method: Categorical Principal Component Analysis (CatPCA)
Extraction method: Exploratory Factor Analysis (EFA; principal axis factoring of the CatPCA quantifications)
Rotation method: Varimax with Kaiser normalization
Measurement method: Rasch Analysis with the Rating Scale Model (RSM)

Table A.3. *Summary of the two step procedure for the 2 measures of the Job Satisfaction* (12 items for 2 subdimensions; GCA = 93; VAF = 57; REV = 49)

Question: **How satisfied are you with...**

Response scale: 1 = "*Strongly unsatisfied*", 2,…, 4 = "*Neither satisfied nor dissatisfied*",…, 6, 7 = "*Strongly satisfied*".

Measures and Items*	***Descriptions***	**EFA** ***Factor loadings***		**RSM** ***Difficulty***	***Infit***	***Ptmea***
EXTRINSIC JOB SATISFACTION RA = 74; SM = 94; EV = 54						
Ambient	Physical work environment	0.59	0.24	0.10	0.99	0.69
Stability	Job stability	0.59	0.20	0.05	1.12	0.68
Hours	Working hours	0.70	0.19	0.04	0.89	0.71
Flexibility	Flexibility of work hours	0.68	0.23	-0.05	0.95	0.69
Security	Job and social security	0.60	0.24	-0.14	1.03	0.68
INTRINSIC JOB SATISFACTION RA = 87; SM = 97; EV = 66						
Career	Achieved and expected career prospects	0.20	0.63	0.98	1.09	0.72
Involvement	Involvement in the decision-making process	0.21	0.72	0.44	0.88	0.76
Development	Professional development	0.24	0.67	0.01	0.95	0.73
Recognition	Recognition of his/her work by the cooperative	0.26	0.76	-0.20	0.90	0.77
Transparency	Transparency of procedures	0.25	0.74	-0.31	0.99	0.75
Realization	Self-realization	0.24	0.63	-0.37	1.11	0.70
Autonomy	Autonomy in decision-making	0.26	0.58	-0.55	1.09	0.67

Quantification method: Categorical Principal Component Analysis (CatPCA)

Extraction method: Exploratory Factor Analysis (EFA; principal axis factoring of the CatPCA quantifications)

Rotation method: Varimax with Kaiser normalization

Measurement method: Rasch Analysis with the Rating Scale Model (RSM)

The measurement of total satisfaction simply includes all the items in both the intrinsic and the extrinsic component of satisfaction

Appendix B. Control variables. Effects of fairness and incentives on worker well-being

Variables	Sod Int Coeff. t	Sod Est Coeff. t	Sod Tot Coeff. t	Job Sat Coeff. t	Wage Sat Coeff. t	Sod Int Coeff. t	Sod Est Coeff. t	Sod Tot Coeff. t	Job Sat Coeff. t	Wage Sat Coeff. t
Age	**-0,102**	**0,064**	-0,044	0,014	-0,036	**-0,088**	0,054	-0,038	0,018	-0,036
	(-3,72)	**(2,09)**	(-1,63)	(0,48)	(-1,33)	**(-3,40)**	(1,74)	(-1,50)	(0,59)	(-1,26)
Tenure	**0,130**	**0,084**	**0,116**	0,018	0,054	0,044	**0,070**	0,052	-0,016	0,040
	(4,22)	**(2,28)**	**(3,68)**	(0,54)	(1,88)	(1,57)	**(1,92)**	(1,75)	(-0,51)	(1,38)
Gender	-0,040	0,020	-0,020	0,040	**0,096**	**-0,040**	0,000	-0,040	0,040	**0,096**
	(-1,46)	(0,90)	(-0,74)	(1,69)	**(3,81)**	**(-2,17)**	(0,07)	(-1,51)	(1,22)	**(3,83)**
Married with children	-0,040	-0,020	-0,040	0,020	0,018	-0,020	-0,020	-0,020	0,040	0,016
	(-1,54)	(-1,09)	(-1,61)	(1,00)	(0,71)	(-1,01)	(-0,87)	(-1,10)	(1,21)	(0,69)
Secondary school	0,024	0,024	0,026	-0,008	0,002	0,014	0,018	0,016	-0,008	0,002
	(0,89)	(0,75)	(1,00)	(-0,25)	(0,08)	(0,57)	(0,55)	(0,68)	(-0,25)	(0,05)
University degree and higher	0,044	-0,002	0,032	-0,048	-0,050	0,000	-0,014	-0,002	-0,062	**-0,060**
	(1,62)	(-0,04)	(1,17)	(-1,46)	(-1,80)	(0,03)	(-0,49)	(-0,10)	(-1,86)	**(-2,14)**
Open end contract	0,032	**0,198**	**0,110**	0,032	-0,026	-0,024	**0,150**	**0,054**	-0,016	-0,024
	(1,27)	**(6,88)**	**(4,24)**	(1,05)	(-0,94)	(-1,02)	**(5,07)**	**(2,13)**	(-0,53)	(-0,88)
Part-time	**-0,100**	0,022	**-0,064**	-0,062	0,000	-0,066	0,014	-0,044	-0,052	0,002
	(-4,01)	(0,79)	**(-2,56)**	(-2,12)	(-0,02)	(-2,82)	(0,49)	(-1,82)	(-1,79)	(0,04)
Forced part-time	**-0,110**	**-0,068**	**-0,110**	**-0,122**	**-0,132**	-0,044	-0,048	**-0,054**	**-0,100**	**-0,118**
	(-4,59)	**(-2,40)**	**(-4,82)**	**(-3,83)**	**(-5,01)**	(-1,92)	(-1,64)	**(-2,49)**	**(-3,16)**	**(-4,48)**
Hourly wage	0,138	0,000	**0,090**	0,000	**0,114**	**0,106**	-0,008	**0,066**	-0,012	**0,106**
	(5,22)	(0,01)	**(3,07)**	(-0,01)	**(2,95)**	**(4,07)**	(-0,20)	**(2,27)**	(-0,36)	**(2,79)**
Presence of monetary incentives	**0,086**	**0,082**	**0,096**	-0,004	0,046	**0,078**	**0,086**	**0,092**	-0,004	0,042
	(3,17)	**(2,67)**	**(3,34)**	(-0,17)	(1,84)	**(3,15)**	**(2,82)**	**(3,42)**	(-0,12)	(1,66)
Amount of monetary incentives	**0,056**	-0,002	0,048	0,010	0,020	-0,006	-0,012	-0,002	-0,006	-0,004
	(1,98)	(-0,07)	(1,63)	(0,32)	(0,72)	(-0,22)	(-0,35)	(-0,04)	(-0,18)	(-0,13)
Relations with clients	**-0,090**	**-0,118**	**-0,112**	-0,006	-0,032	-0,046	**-0,092**	**-0,070**	0,008	-0,020
	(-3,28)	**(-3,64)**	**(-4,02)**	(-0,19)	(-1,12)	(-1,82)	**(-2,90)**	**(-2,71)**	(0,28)	(-0,69)
Coordination	**0,066**	-0,018	0,042	0,042	0,024	0,036	-0,026	0,020	0,032	0,018
	(2,53)	(-0,72)	(1,67)	(1,53)	(0,97)	(1,51)	(-1,03)	(0,83)	(1,23)	(0,71)
Manual worker	-0,066	-0,002	-0,042	-0,010	0,040	-0,030	-0,002	-0,016	-0,002	0,042
	(-2,35)	(-0,09)	(-1,56)	(-0,29)	(1,41)	(-1,16)	(-0,04)	(-0,63)	(-0,07)	(1,48)
Log Dimension (number of Employees	-0,024	0,054	0,008	0,054	-0,024	0,026	0,060	0,046	0,056	-0,012
	(-0,88)	(1,60)	(0,27)	(1,51)	(-0,79)	(1,02)	(1,80)	(1,74)	(1,55)	(-0,42)
Central Italy	**-0,088**	**-0,180**	**-0,136**	**-0,092**	-0,040	**-0,060**	**-0,166**	**-0,110**	**-0,078**	-0,038
	(-3,26)	**(-5,84)**	**(-5,16)**	**(-2,82)**	(-1,44)	**(-2,38)**	**(-5,47)**	**(-4,43)**	**(-2,46)**	(-1,31)
Southern Italy	**-0,064**	**-0,200**	**-0,122**	-0,060	0,006	**-0,076**	**-0,186**	**-0,128**	-0,048	-0,004
	(-2,12)	**(-5,60)**	**(-3,89)**	(-1,71)	(0,18)	**(-2,68)**	**(-5,28)**	**(-4,25)**	(-1,35)	(-0,15)

*Coefficients in bold statistically significant at least at the 5% level.