



**Euricse**

European Research Institute  
on Cooperative and Social Enterprises

# WORKING PAPER SERIES

ISSN 2281-8235

Working Paper n. 66 | 14

**Silvia Sacchetti**  
**Ermanno C. Tortia**

## A “human growth” perspective on organizational resources, worker satisfaction and firm performance

---

Please cite this paper as:

Sacchetti S., Tortia E.C. (2014), “A ‘human growth’ perspective on organizational resources, worker satisfaction and firm performance”, *Euricse Working Papers*, 66 | 14.

# A “human growth” perspective on organizational resources, worker satisfaction and firm performance

Silvia Sacchetti<sup>a</sup> and Ermanno C. Tortia<sup>b</sup>

## Abstract

The paper deals with the mediating role of immaterial satisfaction between substantive organizational substantive features, defined as resources by on-the-job autonomy, involvement, teamwork and workload pressure, and organizational performance, defined in terms of improvements in product quality and innovation. We address this relationship in the Italian social service sector using a survey dataset that includes 4,134 workers and 320 not-for-profit social cooperatives. We apply a structural equation model including both observed and latent variables. Direct, indirect and total effects in the structural model show that: (i) worker autonomy in introducing innovation positively influences performance; (ii) involvement bears positively on performance when its effect is mediated by immaterial satisfaction; (iii) the negative impact of task-autonomy on performance is almost counterbalanced by its positive impact on worker satisfaction. To control for common method bias we resort to post-hoc testing and introduce three distal sources of subjective data from directors, managers and paid workers.

## Keywords

Satisfaction, creativity, autonomy, involvement, teamwork, firm performance.

## JEL classification

J28, J81, L15, L25, L84, M54.

---

<sup>a</sup> Management School, SISM (Stirling Institute for Socio-Management). Email: [silvia.sacchetti@stir.ac.uk](mailto:silvia.sacchetti@stir.ac.uk)

<sup>b</sup> University of Trento and Euricse. Email: [ermanno.tortia@unitn.it](mailto:ermanno.tortia@unitn.it)

## 1. Introduction

Research on the relationship between structural organizational resources and firm performance is wide and established. In general, organizational resources have been functional to enhancing employees' skills, commitment and effort, with a view to enhance, in turn, organizational performance (Takeuchi et al., 2007: 1069). These characteristics typically include formal strategic approaches to "recruitment and selection, pay for performance and other incentive-based compensation plans, information sharing, rigorous performance appraisal processes, and training in both generic and company-specific skills" (Messersmith et al., 2011).

Complementary, research has addressed also the impact of structural organizational resources on satisfaction (Takeuchi et al., 2009), but only seldom satisfaction has been considered as a factor influencing performance (Ostroff, 1992) and as a mediator between structural organizational resources and performance (Guest, 2002; Messersmith et al., 2011) and further research is called for concerning the triangulation between structural organizational resources, worker satisfaction, and organizational performance (Böckerman and Ilmakunnas, 2012).

Other studies have addressed substantive elements of the psychological contract and directed attention towards the empowerment of employees (Spreitzer, 1995, who builds on the theoretical framework developed by Thomas and Velthouse, 1990) by means of organizational resources centered on employees involvement (Guthrie, 2001). Involvement, in particular, has been shown to be a prerequisite for the development of high quality communication, information sharing and trust inside organizations (Ostrom, 2010; Deci and Ryan, 1990), thus contributing to empowerment (defined by the meaning, competence, self-determination and impact perceived by the worker; Messersmith et al., 2011; Spreitzer, 1995). Rather than focusing on the presence of structural organizational resources, our study focuses on the presence and intensity of some of the substantive features of organizational resources which can also be said to favor psychological empowerment. Specifically we consider workers' involvement in decision-making and in the definition of the mission and aims of the organisation (reflecting aspects of meaning and impact), task autonomy and innovation-related autonomy (reflecting aspects of self-determination and competence) and elements of trust and information sharing within teams. Complementary, we also account for workload pressure as a measure of the intensity of the "job demands" coming from the organization (Amabile et al., 1996; Bakker et al., 2008; Schaufeli et al., 2009).

We study workers in mutual benefit organizations with a not-for-profit objective whose main activity is devoted to the delivery of social services. The specificity of this application is that in the not-for-profit sector the role of workers' satisfaction can be hypothesized to be substantive (Rose-Ackerman, 1996). Furthermore, the cooperative mutualistic nature of these enterprises embeds aspects of involvement and participation in the organizational governance. Insofar as we deal with the effects of substantive organizational features on performance, as mediated by worker fulfillment, we position this contribution within literature that explores the effects of organizational psychological processes on individual and firm performance (Kehoe and Wright, 2010; Li et al., 2011; Takeuchi et al., 2009), sharing the view that satisfaction can represent an important *trait d'union* between HR policies and organizational outcomes (Messersmith et al., 2011).

As in Liao et al. (2009) and Messersmith et al. (2011), we take service quality as key to the measurement of organizational performance in the service sector. This choice is also coherent with the measurement of performance in the nonprofit sector (Drucker, 2006) and in labor intensive sectors such as social services (Wall and Wood, 2005).

We aim at contributing to the existing narrative in a number of ways. First, we aim at identifying the specific domains on which action can be taken in order to improve, at the same time, workers satisfaction and the quality of services that users receive. In practical terms, it is a matter of assessing the extent to which organizations that nourish and promote workers satisfaction receive a positive contribution from these individuals, thus justifying the renewal of commitment towards workers fulfillment and, at the same time, towards the service quality for users. The joint consideration of workers' fulfillment and service quality unveils whether the organization can pursue the welfare of workers and users by acting on the same aspects of the organizational life. Our contextualization of fulfillment and performance carries also the potential of extending the relevance of organizational resources towards the analysis of wider problems of human and socio-economic development (Sen, 1999; UNDP, 2010).

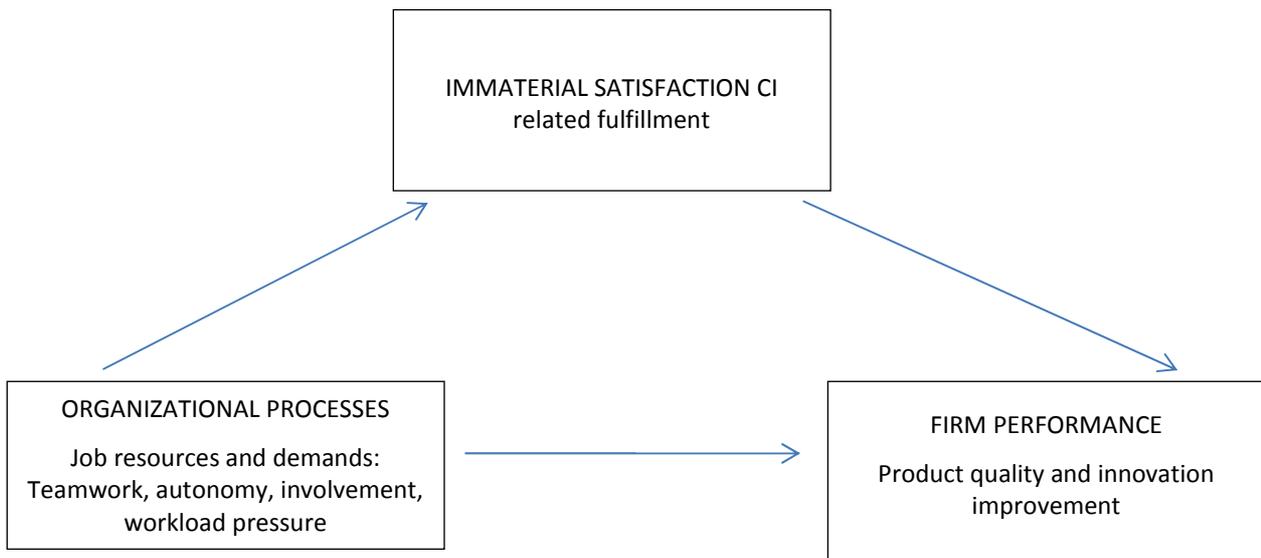
Second, we theorize that the relationship between substantive characteristics (defined by workers' involvement, quality of teamwork, task autonomy, autonomy in innovation, workload) is mediated by immaterial elements of satisfaction. Each of these substantive characteristics is argued to be linked to satisfaction and, in the aggregate, to firm performance.

Third, we show that the dimensions of individual satisfaction that are most conducive to improved service quality at the organizational level are the immaterial ones, connected with creativity, fulfillment and autonomy. We subscribe to Whitman et al. (2010) quest for a resurgence of the research initiated by Ostroff (1992), who evidenced the positive role of satisfaction in influencing performance. Contrary to these contributions, however, and coherently with Messersmith et al. (2011), we consider the role of individual more than unit level satisfaction.

Fourth, in addition but distinctively from the tradition that has searched in complementarities and synergies between characteristics the secret for obtaining improved performance (Ichniowski et al., 1997; Huselid, 1995; Macduffie, 1995), we consider different features of the relation between the worker and the organisation in order to evidence differential impacts and contrasting effects.

We use structural equation modeling to analyze the mediating role of immaterial satisfaction between HR dimensions and performance and to distinguish the impacts of Organizational resources on the welfare of workers at the individual level, and on service quality and innovation at the organizational level. Figure 1 sketches the main hypothesis of the model.

**Figure 1 - Job Resources, Job Demands, Performance and the Mediating Role of CI Related Fulfillment**



We rely on a national Survey on Italian Social Cooperatives (SISC, hereafter) undertaken in 2006. Data include information about 4,134 salaried workers in 320 Italian social cooperatives. To contrast the problems connected with common method bias (Podsakoff et al., 2003) we resort to three distal sources of data. We use three different questionnaires: to directors (on the organization as a whole), to managers (on specific organizational characteristics) and to paid workers (on several aspects of their job). The strength of the methodology lies with the dimension and national representativeness of the sample in one specific sector, with the multiple sources of data, and with the extensive coverage of organizational dimensions in a homogeneous institutional set-up. This high homogeneity limits the impact of confounding factors (Becchetti et al., 2012).

## **2. Theoretical Approach**

Our choice of variables and hypothesized relationships builds on the appreciation of a perspective developed in the context of American pragmatism which is not conventionally addressed in HRM narrative, and that nonetheless we think carries significant insights for the study of worker satisfaction and firm performance. Specifically we have considered the Deweyan notion of “human growth” (Dewey, 1922), wherefrom we decided to target specific HR dimensions in view of identifying what contributes to individual workers’ fulfillment and users’ welfare (as for the quality of the service offered). The data set addresses the social welfare sector, where the features and relational content of services are directly associable with the life quality enjoyed by users.

In Dewey’s pragmatic approach, human fulfillment is achieved when individuals can express creativity and critical thought (Dewey, 1917). The imaginative and cognitive aspects of human action are merged in his notion of “creative intelligence,” or the capacity of individuals to challenge existing beliefs and habits of thought by assessing and shaping action, by engaging “hearts and brains” with the activities in which they participate (Dewey, 1922, 1930). In the context of

organisations, the use of creative intelligence (CI) takes the form of a meaningful interaction between the individual and the organizational environment, as the individual strives to satisfy particular aspirations. We would argue that it is specifically with the participation in shared deliberative processes that individuals can learn and make sense of situations, thus being in a position to imagine and implement novel ways forward. This foundational line of thinking is consistent with the more recent claims in HRM literature about participatory organizational climate being conducive to psychological empowerment, where meaning, competence, self-determination and impact can be related to the use of creative intelligence (Lawler, 1986; Thomas and Velthouse, 1990; Spreitzer, 1995).

The exercise of CI, moreover, is not dependent only on the individual's history, attitudes and abilities, but also on the context with which agents interact to make sense of situations. It is therefore a potential that, as argued by Dewey and consistently with the later work by Amabile (1983), needs in the great majority of cases to be built, learned and encouraged. Our choice of HRM features considers domains where workers can apply CI, thus impacting on fulfillment and firm performance. This approach is coherent with HRM studies that evidence the need to integrate organizational resources with other spheres of the firm's strategic choice, as expressed for example in the definition of organizational governance, decision-making processes, firm's objectives and overall aims.

#### *Measures and Hypotheses: Satisfaction as Mediating Organizational Dimension*

The descriptive statistics of our measures of satisfaction and organizational dimensions are given in Table 1.

We hypothesize immaterial satisfaction to be higher: (a) when organizational context favors inclusion as a way to promote sense-making, critical enquiry, learning and compatibility between individual and organizational objectives; (b) when individuals have or can develop the skills to meaningfully engage in both autonomous and collaborative work. Therefore:

*Hypothesis 1a: Organizational resources that support collaborative work, worker involvement and autonomy positively influence immaterial satisfaction.*

We then test whether these same items positively impact on overall organizational performance. We measure firm performance on the basis of directors' self-reports concerning whether the organization has improved service quality and introduced technological and organizational innovations over a three year period. Table 2 illustrates the measures and descriptive statistics for organizational performance.

**Table 1 - Items of Satisfaction and Substantive Organizational Characteristics**

SCALE	Nr. of items	Items Scale 1 to 7 (unless differently specified)	No. of Obs.	N.A.	Aver age	St. Dev.
<i>Satisfaction with....</i>	Factor	Variety and creativity of work	3971	0	5.20	1.67
	4 items	Personal fulfilment	3986	0	4.92	1.49
		Personal growth	3861	0	4.64	1.59
		On-the-job autonomy	3991	0	5.07	1.48
<i>The job as a whole</i>	1 item		3989	0	5.46	1.33
<i>Collaborative teamwork:</i>	Factor	Cooperation	3907	828	5.49	1.56
What are the most relevant aspects in your team?	5 items (1 to 5 scale)	Support by the management	3861	828	5.72	1.48
		The quality of results	3873	828	5.85	1.46
		Widespread feelings of trust and respect	3873	828	5.55	1.43
		Sharing of knowledge and experience	3870	828	5.61	1.40
<i>Task autonomy:</i>	Factor	In organizing job tasks	4017	0	4.70	1.96
To what extent are you autonomous...	3 items	In relations with clients and users	3875	0	4.68	1.88
		In problem-solving	3949	0	4.25	1.95
<i>Innovation autonomy:</i>	Dummy	Yes/No	4106	0	0.42	0.48
Are you autonomous in the development of work and service-related innovation?						
<i>Involvement:</i>	Factor	Development of interpersonal relations	3785	0	3.27	1.09
To what extent does the Cooperative use the following tools to recognize and improve your work?	3 items (1 to 5 scale)	Involvement in the mission	3835	0	3.13	1.24
		Involvement in decision making	3846	0	2.88	1.26
<i>Workload pressure:</i> Your job usually requires...	5 items	Sustained involvement	3978	0	5.98	1.26
		Involvement in different activities	3925	0	4.92	1.90
		High responsibilities	4066	0	5.17	2.04
		Reaching difficult objectives	3926	0	4.32	1.85
		Working at a fast pace	3913	0	4.62	1.80

Source: Authors' calculations on SISC 2007 (Survey on Italian Social Cooperatives, 2006)

**Table 2 - Measures of Firm Performance**

SCALE	Nr. of items	Items Scale 1 to 5	No of obs. (out of 320)	Average	Standard Deviation
<i>Performance:</i>	4 Likert	Service quality	254	4.31	0.75
<i>Improvement over a</i>	items	Service innovation	253	4.23	0.73
<i>three year period</i>		Technological Innovation	243	3.98	0.80
<i>in...</i>		Organizational innovation	223	3.78	0.80

*Source: Authors' calculations on SISC 2007 (Survey on Italian Social Cooperatives, 2006)*

*Hypothesis 1b: Satisfaction positively impacts on firm performance.*

HRM Substantive Dimensions and Performance. The study of the nexus between Organizational resources and performance has tested different mediating effects (Combs et al., 2006). However, findings are not always univocal (Wood and Wall, 2007), leaving a question mark on what conditions make specific organizational features (un)effective. As mentioned, the mediating role of worker fulfillment has not received sufficient attention until recently (Messersmith et al., 2011). In what follows we work out hypotheses concerning the total impact of substantive Organizational resources. Total impacts are then disentangled into direct impacts and impacts mediated by our CI-related items of satisfaction.

Autonomy. In conventional HR approaches, autonomy implies that the individual can enjoy substantial freedom, independence, and discretion in scheduling the work and in determining the procedures to be used in carrying it out (Hackman and Oldham, 1976). However, we could say that autonomy implies more than the degree of discretionality exerted in the implementation of day-to-day activities. More fundamentally, autonomy directs to the use of CI to problematize situations, find appropriate ways of acting and set objectives that reflect desired outcomes. This means that the worker not only can select routines which are relevant to the solution of particular problems, or appropriate to habitual circumstances: individuals able to discover new situations are also more likely to act creatively, intelligently and morally when the organizational context allows them to do so (Amabile, 1983; Dewey, 1927; Fesmire, 2003; Gioia and Poole, 1984).

We use subjective measures of the degree of autonomy perceived by individual workers when carrying out their job. In particular, items refer to task-autonomy, and in particular to the three dimensions of autonomy enjoyed in day-to-day job tasks, in handling relations with customers and users, and in problem solving. We then separately consider a dummy variable related to a more radical form of autonomy, i.e. the existence of autonomy in the introduction of innovative ideas (in the organization of work and delivery of services).

Existing results point at the positive impact of autonomy on satisfaction, which also involves aspects of commitment (Biron and Bamberger, 2010; Deci and Ryan, 2000; Sprigg et al., 2000). The negative impact of autonomy on burnout has also been evidenced (Castanheira and Chambel, 2010).

On the relation between autonomy and performance the picture is more blurred. Amabile et al. (1996) evidence a positive impact of task autonomy on the creative performance of teams and individuals. Still, results do not always point to the same conclusions (Hodson, 2002; Mukherjee and Malhotra, 2006). For example, Mukherjee and Malhotra (2006) find no connection between task autonomy and role clarity, which is found to be a relevant and significant determinant of service quality. Also within self-governing teams of MBA students, Langfred (2004) shows that high trust is associated with lower team performance when individual autonomy is high.

We hypothesize the existence of contrasting forces in the relation between autonomy and performance. Autonomy increases the worker's sphere of control and set of behavioral options, and, connectedly, his or her wellbeing (Deci and Ryan, 1990). However, again building on Dewey (1922), understanding is as much a matter of the individual experience as well as of his or her context: it is a social and inter-subjective phenomenon, since it is nourished by the specific knowledge and experience of others. It follows that autonomy can also engender lack of coordination and monitoring failures, or lead to the pursuit of incompatible objectives, which can create obstacles to an adequate circulation of information and exacerbate diverging interests, the more so when the involved actors express heterogeneous preferences. Coordination failures can then negatively impact on overall firm performance, as evidenced also by new institutionalist theories of the firm (Hansmann, 1996).

To the extent to which the positive and negative impacts of autonomy on fulfillment and performance coexist, they need testing. We will tentatively hypothesize that the positive impacts overcome the negative ones. The dummy concerning autonomous innovation is also expected to positively impact on performance, since in this case the activity of workers is explicitly directed to improve quality and innovation. In this case, problems concerning lack of coordination and diverging objectives are likely to be less severe.

*Hypothesis 2a: Task autonomy positively impacts on firm performance*

*Hypothesis 2b: Autonomous innovation has a positive impact on firm performance*

Teamwork. Collaborative teamwork can substantially enlarge the amount and quality of resources available to workers, mainly in terms of supporting relations, reciprocal trust, and knowledge sharing. Through these resources, the team defines a domain where commitment and participation favor the transposition of CI into new action in general, therefore possibly impacting on satisfaction. This supports the possibility of a positive relation between teamwork and fulfillment.

As for performance, teamwork has been mainly studied with respect to team innovation. Janssen et al. (2004) present a review of the elements which contribute to team innovation, including non-conflictual interaction amongst individuals with different attitudes (e.g. the "innovator" vs. the "adaptor", Kirton, 1984) and the combination of diverse and complementary abilities (Milliken and Martins, 1996). These elements can be traced also in West's analysis of *team climate for*

*innovation*, which include a) commitment to specific objectives; b) participation in decision-making; c) purposefulness; d) support for innovation (West, 1990)<sup>1</sup>.

Fewer enquiries exist on the relation between teamwork and wider organizational performance. These evidence, in general, a positive relationship. For example, using managerial evaluations of leader support, teamwork cohesion, and organizational performance, Montes et al. (2005) find a strong positive link between teamwork cohesion, organizational learning, and technical and administrative innovation as measures of organizational performance. Lee et al. (2010) find a positive impact of Organizational resources, including teamwork, on firm performance (measured as production efficiency), but the specific effect of teamwork is not worked out. In most studies, however, the mediating role of workers satisfaction is unexplored. We hypothesize that the total effect on performance is positive.

*Hypothesis 3: Teamwork has a positive impact on firm performance*

Involvement. Starting from the seminal contributions by Lawler (1986) and Arthur (1994) worker involvement and participation in decision making have been identified in the literature as key elements among the determinants of performance (Appelbaum et al., 2000; Guest, 2011; McMahan et al., 1998; Wood and Wall, 2007) among the many contributions. Empirical tests show a positive relation between involvement and production performance, measured in a number of ways, such as productivity, profitability, innovation, retention rates, sales growth and, in the service sector, service quality, customer satisfaction and loyalty (Cottini et al., 2011; Kwon et al., 2012; Huselid, 1995; Siddique, 2004; Wang et al., 2007; Diamantidis and Chatzoglou, 2010; Batt, 2002; Liao and Chuang, 2004).

We consider the perceived intensity of involvement in decision-making and in the definition of the aims of the organization. These characteristics can favor collaborative and inter-subjective learning, thus providing the contextual condition for individuals to deliberate intelligently. Involvement provides a behavioral framework where people are encouraged to articulate and communicate their views, share knowledge on the consequences of previous decisions and reflect on feedbacks, thus influencing each other's perspectives and preferences (Dewey, 1927). A "social" process aimed at understanding problems and situations gets activated, and engagement with decision-making becomes an act of CI which can be expected to increase individual sense of control (self-determination) and accomplishment, not least because it gives voice to intuitions and ideas which can then be verified and reflected into further action (Dewey, 1927; Habermas, 1992; Ford, 1996; Joas, 1996). Consistently, involvement has been regarded as a determinant of workers' satisfaction (Wood and Wal, 2007; Richardson et al., 2010). Research results, however, are not unequivocal on this aspect (Cox et al., 2006; Diamantidis and Chatzoglou, 2011; Holland et al., 2011; Zatzik and Iverson, 2011).

One peculiarity of our study is that involvement in decision-making is embedded in the organizational governance. About three quarters of surveyed workers are indeed members and, therefore, own individual rights of participation and control over the activities and economic

---

<sup>1</sup> Cf. also Kanter (1988); Pirola-Merlo and Mann (2004).

results of their respective organisations. It follows that membership provides the formal institutional medium for involvement and deliberation by means of which individual CI is expected to impact positively at the aggregate organizational level.

*Hypothesis 4: Worker involvement has a positive impact on firm performance.*

Workload. Workload provides an indication of the demands that organizations pose to workers (Bakker et al., 2008; Schaufeli et al., 2009). We consider specifically workload pressure (defined in terms of pace and intensity of work), meeting stringent deadlines, and responsibilities towards clients and users. Creativity and novel thinking have been argued to emerge out of compression (Dewey, 1934). In field research, however, pressure beyond a certain threshold has been argued to represent an impediment to team and firm innovation (Amabile et al., 1996). Moreover, Kaya et al. (2010) and Robinson et al. (1993) find a positive connection between workload and worker satisfaction, which is taken as an index of job performance. Overall, in terms of total effects, the relation between workload and performance is expected to be positive, but further testing is needed.

*Hypothesis 5: Workload pressure has a positive impact on firm performance.*

### **3. Survey Data and Methods**

All the observed, measured and latent variables used in this study are drawn from the 2006 SISC survey, conducted by the Universities of Brescia, Milan, Naples, Reggio Calabria, and Trento. The survey is composed by three different questionnaires addressed to paid and volunteer workers, organizations, and managers. The questionnaires are based on validated multiple-item questions, most of which are measured on 1 to 7 or 1 to 5 Likert scales, and were administered by trained staff that supported the respondents on site. Questionnaires were compiled by workers in groups or taken at home and, in both cases, handed in anonymous envelopes, while late compiled questionnaire were sent by post. The questionnaires concerning the organization were compiled by trained researchers together with one or more directors of the organization, while the questionnaires concerning managers were collected directly from the organization in anonymous envelopes (one manager for each organization).

The initial sample was extracted from the 2003 census on social cooperatives (ISTAT, 2003), which counted 6,168 active cooperatives (with at least one employee) at the national level. The Italian legislation defines two typologies of social cooperative: Type A delivers social services, while Type B is defined as an enterprise that reintegrates weak individuals such as disabled, ex-drug addicted, ex-convicted, the mentally ill, and long term unemployed into the labor market. Representativeness country-wise was guaranteed by stratification on the basis of three parameters: a) typology of cooperative (Type A and Type B), b) geographic representativeness by province (Italy counts 20 regions and 103 provinces); c) size by number of employees. The study started from an initial sample of 411 organizations, while the final sample is made of 320 organizations including 4,134 salaried workers. Eighty-five per cent of workers answered on average 90 per cent of the 87 questions (56 single choice questions and 31 multiple choice

questions). In this analysis we primarily use salaried-worker data, but we include also organizational dimensions (our performance index and standard controls). To account for common method bias, we also resort to the questionnaire addressed to managers.

From an overview of socioeconomic features we know that we are looking at workers in their 30s, mainly females (74 per cent), holding a permanent job position (80 per cent). Education is college or university in 69 per cent of cases. The hourly wage was (in 2005) Euros 6.6 on average and tenure is nearly 6 years on average. The average firm size is 33 employees, 78 per cent are Type A and 22 per cent Type B cooperatives. Sixty-two per cent are located in the North, 22 per cent in the Centre, and 16 per cent in the South of the country (Table A1 in the Appendix).

Table 3 shows the correlation coefficients between all the measurement variables, including the autonomous innovation dummy. We conducted confirmatory factor analysis (CFA) separately on all the six latent dimensions to provide evidence of convergent validity of our measures. The results of reliability analysis (Cronbach's alpha) and the goodness of fit indexes for all the CFAs are shown in Table 4. Internal consistency given by reliability analysis is good (alpha higher than 0.7 for all the dimensions) and this also points at a *prima-facie* confirmation of construct-identification validity. Instead, some dimensions (performance, teamwork, and workload pressure) show an inadequate degree of goodness of fit in the cases of the RMSEA (values significantly higher than 0.05) and P-close (values lower than 0.05) (Table 4).

**Table 3 - Correlations among Measurement Variables**

	1. Overall Job Sat	2. Sat PersDevelop	3. Sat Autonomy	4. Sat Self-Fulfillm	5. Sat Creativity	6. P. Prod Quality	7. P. Service Inno	8. P. Technologic. Inno	9. P. Org aniz. Inno	10. T. Coop	11. T. Support	12. T. Quality	13. T. Trust	14. T. Know.Sharing	15. I. Relation	16. I. Mission	17. I. Decision	18. A. Task	19. A. Users	20. A. PSolv	21. Auto Innovat	22. W. Involvement	23. W. MultTask	24. W. Responsib	25. W. DifficultTask
1. Overall J.S.	1.00																								
2. Sat PersDev	0.42	1.00																							
3. Sat Auton	0.37	0.51	1.00																						
4. Sat SelfFul	0.52	0.54	0.52	1.00																					
5. Sat Creativ	0.41	0.37	0.37	0.44	1.00																				
6. P. ProdQual	0.02	0.04	0.00	0.04	0.00	1.00																			
7. P. InnoServ	0.04	0.08	0.03	0.07	0.06	0.51	1.00																		
8. P. InnoTech	0.06	0.06	0.01	0.06	0.06	0.33	0.50	1.00																	
9. P. InnOrg	0.01	0.02	0.00	0.01	0.03	0.41	0.44	0.54	1.00																
10. T. Coop	0.25	0.24	0.22	0.25	0.25	0.00	0.04	-0.01	-0.04	1.00															
11. T. Support	0.28	0.32	0.26	0.33	0.27	0.05	0.08	0.02	0.02	0.36	1.00														
12. T. Quality	0.25	0.26	0.22	0.25	0.25	0.01	0.06	-0.03	-0.08	0.39	0.42	1.00													
13. T. Trust	0.31	0.28	0.31	0.29	0.32	0.01	0.04	0.00	-0.02	0.55	0.38	0.40	1.00												
14. T. KShar.	0.29	0.30	0.30	0.31	0.32	0.00	0.05	0.00	-0.02	0.56	0.43	0.43	0.68	1.00											
15. I. Relation	0.30	0.37	0.30	0.31	0.27	0.04	0.06	0.03	0.06	0.22	0.30	0.21	0.29	0.27	1.00										
16. I. Mission	0.27	0.37	0.28	0.29	0.25	0.01	0.07	0.02	0.03	0.12	0.21	0.19	0.19	0.19	0.45	1.00									
17. I. Decision	0.28	0.36	0.30	0.29	0.25	0.02	0.05	0.02	0.03	0.12	0.22	0.20	0.21	0.20	0.41	0.74	1.00								
18. A. Task	0.20	0.21	0.46	0.23	0.23	-0.04	-0.01	-0.04	-0.04	0.12	0.13	0.14	0.20	0.18	0.17	0.19	0.21	1.00							
19. A. Users	0.13	0.14	0.32	0.13	0.12	-0.04	-0.03	-0.03	-0.06	0.09	0.12	0.09	0.13	0.14	0.09	0.05	0.09	0.53	1.00						
20. A. P. Solv	0.07	0.12	0.31	0.13	0.11	-0.05	-0.02	0.00	-0.03	0.03	0.05	0.05	0.08	0.06	0.09	0.11	0.13	0.52	0.51	1.00					
21. Auto Inno	0.18	0.23	0.30	0.25	0.24	0.30	0.05	0.05	0.07	0.11	0.19	0.16	0.15	0.15	0.23	0.28	0.30	0.24	0.10	0.15	1.00				
22. W. Involv	0.16	0.10	0.12	0.16	0.25	0.02	0.07	0.06	0.04	0.16	0.17	0.21	0.17	0.19	0.10	0.10	0.10	0.09	0.04	0.03	0.13	1.00			
23. W. MTask	0.06	0.05	0.11	0.11	0.22	0.01	0.06	0.07	0.06	0.04	0.05	0.07	0.09	0.09	0.09	0.12	0.13	0.06	0.07	0.06	0.14	0.33	1.00		
24. W. Respon	0.07	0.08	0.04	0.11	0.18	0.06	0.07	0.06	0.05	0.08	0.09	0.11	0.07	0.14	0.06	0.09	0.08	-0.01	0.00	-0.06	0.07	0.40	0.27	1.00	
25. W. Diffic	0.02	0.03	0.01	0.06	0.16	0.00	0.03	0.07	0.07	0.01	0.05	0.06	0.01	0.02	0.07	0.10	0.11	-0.02	-0.01	-0.03	0.11	0.33	0.41	0.45	1.00
26. W. WPace	0.01	0.02	0.01	0.07	0.10	0.07	0.04	0.12	0.08	0.01	0.05	0.07	0.01	0.01	0.02	0.06	0.09	-0.02	-0.01	0.03	0.07	0.39	0.38	0.28	0.45

Source: Authors' calculations on SISC 2007 (Survey on Italian Social Cooperatives, 2006)

In the following, we show the estimates concerning this initial model since they represent the broadest representation of the initial hypotheses and convey a relevant amount of quantitative information (Pearl, 2012). We proceed then by updating our measures and introduce a second and more parsimonious model in which one item for each of the misfit dimensions is dropped (Schreiber et al., 2006). In the case of performance we drop the measurement concerning organizational innovation, in the case of teamwork we drop support by superiors, and in the case of workload we drop responsibility towards clients and users. This modification allows a substantial improvement in fit indexes, as also testified by the decreased value of the Bayesian Information Criteria (BIC). The value of the chi-square test is high and significant for most latent dimensions, even in the second model specification, but this is most likely due to the large dimension of the sample (Kline, 2011). The choice of what measurements to drop was based on both statistical and substantive criteria. In statistical terms, we perform Categorical Principal Components Analysis (CatPCA) to obtain numerical transformations of the rough items. We then apply Exploratory Factor Analysis (EFA) using principal axis factoring as extraction method. Only one factor with eigenvalue higher than one was extracted for each of the six latent dimensions. We drop the items showing the lowest level of communality since these are most likely to have heterogeneous nature relative to the other items (for the sake of brevity we do not show the numerical output of CatPCA and EFA, but all results are available from the authors upon request). At the substantive level, we evidence that organizational innovation is most likely to have different nature relative to the other measures of performance, which are more closely related to service quality and product innovation. This is confirmed also by correlation coefficients, which are lower for organizational innovation, also when it is related to satisfaction (Table 3). In the case of teamwork, we evidence that support by superiors may be perceived by workers in a different way relative to cooperative attitudes with their fellows. Finally, responsibility towards clients and users may be perceived more in terms of demanding relations than in terms of work-pace. The specification of two different models also allows checking the robustness of results.

**Table 4 - Reliability and Goodness of Fit of Individual Latent Dimensions**

FIT STATISTICS	Reliability:	chi2	90% CI,		P-	BIC	TLI	SRMR	CD		
	Cronbach's alpha	model vs saturated	p > chi2	RMSEA						lower bound	upper bound
Performance (Model 1)	0.77	205.7	0.000	0.18	0.16	0.20	0.00	26354.8	0.80	♦	0.76
Performance (Model 2)	0.70	0.0	.	0.00	0.00	0.00	1.00	20509.5	1.00	♦	0.79
Satisfaction	0.77	11.9	0.003	0.04	0.02	0.06	0.89	57023.1	0.99	0.01	0.79
Autonomy	0.77	0.0	.	0.00	0.00	0.00	1.00	48889.1	1.00	0.00	0.77
Teamwork (Model 1)	0.80	138.4	0.000	0.09	0.08	0.10	0.00	53962.5	0.95	0.03	0.85
Teamwork (Model 2)	0.80	8.8	0.012	0.03	0.01	0.06	0.89	42765.5	1.00	0.01	0.85
Involvement	0.77	0.0	.	0.00	0.00	0.00	1.00	35561.2	1.00	0.00	0.86
Workload (Model 1)	0.74	233.1	0.000	0.11	0.09	0.12	0.00	77734.6	0.89	0.03	0.76
Workload (Model 2)	0.71	31.3	0.000	0.06	0.04	0.08	0.17	61248.0	0.97	0.01	0.73

Source: Authors' calculations on SISC 2007 (Survey on Italian Social Cooperatives, 2006)

Note: ♦ SRMR is not reported because of missing values

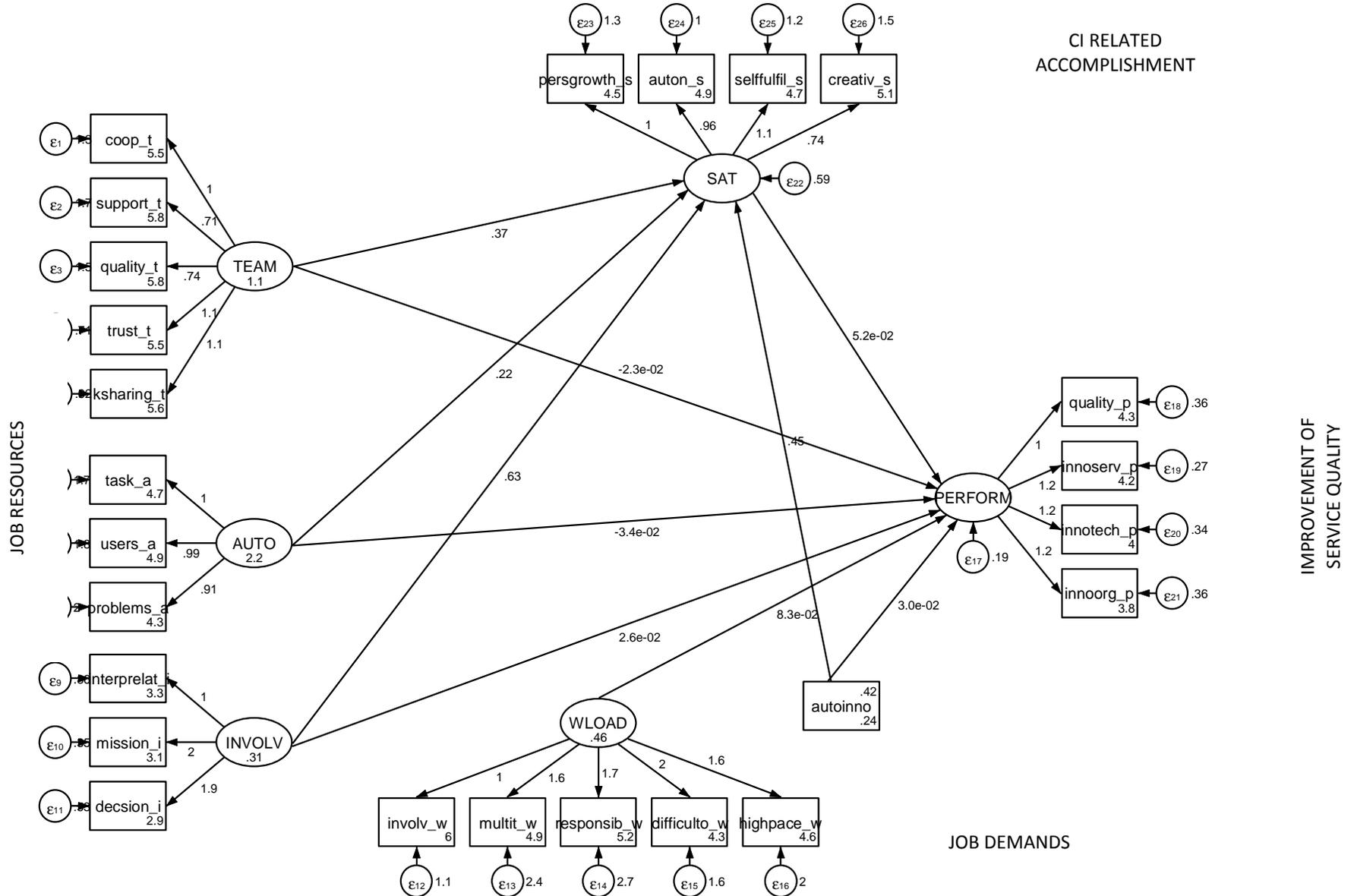
#### 4. Results

Our model considers the mediating role of satisfaction by following the standard treatment in the literature, which sorts out direct, indirect and total effects (MacKinnon, 2008; MacKinnon et al., 2007). Direct effects ( $\beta'$  coefficients, Appendix B) directly flow from Organizational resources (exogenous latent) to performance (endogenous latent), net of the indirect effects flowing from Organizational resources to performance through the medium of immaterial satisfaction (endogenous latent). Indirect effects can be thought as the product of the impacts of Organizational resources on satisfaction ( $\gamma$  coefficients in Appendix B) and of satisfaction on performance ( $\eta$  coefficient in Appendix B). Total effects ( $\beta$  coefficients in Appendix B) are the sum of direct and indirect effects.

In Figure 2 we show the diagrammatic representation of the model with the related path coefficients. We estimate standardized coefficients and cluster standard errors at the organization level. For simplicity and clarity, we do not enclose here any control variable; though this heightens the risk omitted confounding effects. The coefficients represent the direct effects flowing from Organizational resources to satisfaction and to performance, and from satisfaction to performance (corresponding to the numerical output in Table 6). The path diagram displays also the averages of individual items on which confirmatory factor analysis is performed.

In Table 5 we show only the standardized coefficient and standard errors in the initial, non-mediated model. We present the results for the above mentioned two specifications of the model: MODEL1 which includes all the initial items; and MODEL 2, which include only the items that are robust to the goodness of fit tests. Since we are dealing with a linear model, path coefficients are equivalent to controlled direct effects (Pearl, 2011). Since survey questions on organizational resources and immaterial satisfaction come from the same source (paid-workers survey) they may be affected by common method bias. We comment on this issue in a later section. Here we anticipate that the large dimension of the impacts signals the existence of relevant underlying relations between organizational resources and satisfaction.

Figure 2 - Organizational Processes and Performance, with the Mediating Role of Immaterial Satisfaction



Notes: Standardized coefficients and values. Estimation method: maximum likelihood with replacement of missing values. Cluster-robust standard errors estimated at the organization level.

Table 5 - Model Estimates

	MODEL 1			MODEL 2		
	Organizational Innovation included			Organizational innovation excluded		
	Standardized Coef.	Robust Std. Err.	z	Standardized Coef.	Robust Std. Err.	z
INNOVATION						
SATISFACTION	0.12*	0.05	2.21	0.13*	0.05	2.46
Log size	0.18^	0.11	1.65	0.11	0.11	0.96
Member mean	0.15^	0.09	1.69	0.19*	0.09	2.04
Firm type (A vs B)	0.01	0.06	0.10	-0.03	0.07	-0.47
North West	0.15	0.15	1.00	0.17	0.16	1.09
North East	0.14	0.14	1.05	0.14	0.14	1.01
Centre	0.22	0.15	1.50	0.17	0.15	1.10
TEAM	-0.03	0.05	-0.54	0.00	0.05	-0.06
AUTO. INNOVATION	0.06*	0.03	2.00	0.04	0.03	1.30
AUTONOMY	-0.10**	0.04	-2.67	-0.09*	0.04	-2.35
INVOLVEMENT	0.06	0.05	1.34	0.05	0.05	1.08
WORKLOAD	0.08^	0.04	1.81	0.06	0.04	1.27
SATISFACTION						
Age	-0.03^	0.02	-1.90	-0.03^	0.02	-1.76
Gender	0.02	0.02	1.28	0.02	0.02	1.48
Permanent	-0.01	0.02	-0.48	-0.01	0.02	-0.51
Tenure	0.00	0.02	0.04	0.00	0.02	-0.09
Partime	-0.04*	0.02	-2.14	-0.04*	0.02	-2.15
Hourly wage	0.03^	0.01	1.70	0.02	0.02	1.61
Member	-0.03	0.02	-1.41	-0.03	0.02	-1.58
Edu. Secondary	0.01	0.02	0.62	0.01	0.02	0.62
Edu. University	-0.06**	0.02	-3.00	-0.06**	0.02	-3.03
AUTO. INNOVATION	0.15***	0.02	8.54	0.16***	0.02	8.79
AUTONOMY	0.29***	0.03	10.67	0.29***	0.03	10.70
TEAM	0.35***	0.02	14.27	0.33***	0.02	13.80
INVOLVEMENT	0.29***	0.03	11.14	0.30***	0.03	11.63

Notes: Standardized coefficients significant at level: ^  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Maximum likelihood estimation method (missing at random replacement).

Organization level cluster-robust standard errors.

A relevant impact of immaterial satisfaction on performance is evidenced, since one standard deviation (St.Dv.) increase in satisfaction induces a 12-13 per cent St.Dv. improvement in performance. Autonomous innovation shows a positive impact on performance, though the impact is not robust to model specification. This indicates the importance of workers' spontaneous participation in product development, particularly in the context of social services, which are characterized by high relational intensity and low standardization (Borzaga and Tortia, 2010). The significance of both the impacts of immaterial satisfaction and autonomous innovation points to the idea that the use of CI goes hand in hand with improved service quality and innovation. Task autonomy shows instead a strong negative impact on performance. This result points at a possible

detrimental role of autonomy with respect to knowledge exchange and learning from peers, diffusion of information, diverging objectives and coordination of activities. This result may be also connected with the specific governance structure of social cooperatives, where most workers are members and may enjoy a high degree of discretion in task accomplishment (see also additional results in Appendix C). The overall relation between task autonomy and performance, however, needs further assessment since the non-mediated model does not account for the positive relation between satisfaction and autonomy and its influence on performance.

Collaborative teamwork shows a negative, but negligible and insignificant impact on performance, while the impact of involvement is positive, but not statistically significant. Workload pressure shows a positive and relatively large (6 to 8 per cent of one standard deviation), but weakly significant impact. This does not contradict the importance of job demands coming from the organization in determining performance. The direct impact of workload on performance, however, is outperformed by the one of satisfaction. Amongst control variables, organizations with a higher percentage of members over the total workforce appear to perform better, and this indirectly signals the importance of involvement processes in fostering performance.

All the Organizational resources included in the model show a strong positive impact on satisfaction. If compared with autonomy, job features that show a high degree of relationality such as teamwork and involvement have the golden share in influencing satisfaction. This supports the idea that the dimensions of fulfillment attached to understanding and use of creative intelligence have a clear inter-subjective component.

Among control variables, workers with a university degree are less satisfied than the others (the effect is equal to a 6 per cent St.Dv. decrease in satisfaction) and this can signal the existence of frustrated expectations concerning personal growth. The same is true in the case of part-time contracts. Monetary outcomes (the hourly wage) show a positive, but quite marginal and hardly significant impact on satisfaction.

#### *Direct, indirect and total effects*

When the above mentioned effects are disentangled into direct, indirect, and total effects new results emerge. Direct and indirect effects are shown in Table 6. We include, among control variables, only those that show statistical significance. Direct effects show the patterns directly running from Organizational resources to performance, and the patterns running from Organizational resources to satisfaction (respectively coefficients  $\beta'$  in equation 2 and coefficients  $\gamma$  in equation 3, Appendix B). Immaterial satisfaction is confirmed as a significant determinant of performance. Its role, however, is diminished relatively to the non-mediated model (from 12 to 5 per cent St.Dv). In the mediation model, in fact, the indirect effects of Organizational resources flowing through satisfaction are subtracted from the impact of satisfaction itself. Direct effects running from organizational resources to performance evidence similar patterns to what was observed in the non-mediated model (Table 5). Looking at direct effects on satisfaction, involvement emerges as the organizational dimension that delivers the strongest impact (more than 55 per cent of a St.Dv) signaling that involvement represents a substantial precondition of the impact of satisfaction on performance.

Indirect effects ( $\gamma$  times  $\eta$  product in equations (2) and (3), Appendix B) of Organizational resources on performance are all positive, and show similar dimension and significance (1 to 3 percent St.Dv. variation in performance). We emphasize that also teamwork and task autonomy, which showed a negative direct association with performance, exert an indirect positive influence through the medium of immaterial fulfillment.

**Table 6 - Direct and Indirect Effects**

	MODEL 1			MODEL 2		
	Organizational Innovation included			Organizational innovation excluded		
	Standardized Coef.	Robust Std. Err.	z	Standardized Coef.	Robust Std. Err.	z
<b>DIRECT EFFECTS</b>						
PERFORMANCE						
SATISFACTION	0.05*	0.02	2.00	0.05*	0.02	2.25
Log. size	0.06^	0.03	1.73	0.04	0.04	0.98
Member mean	0.28	0.18	1.56	0.37^	0.19	1.89
AUTO. INNOVATION	0.05*	0.03	1.97	0.04	0.03	1.29
AUTONOMY	-0.03*	0.01	-2.29	-0.03*	0.01	-2.11
TEAM	-0.01	0.02	-0.55	0.00	0.02	-0.06
INVOLVEMENT	0.05	0.04	1.32	0.04	0.04	1.09
WORKLOAD	0.05^	0.03	1.88	0.04	0.03	1.28
SATISFACTION						
Age	0.00^	0.00	-1.9	0.00^	0.00	-1.77
Part-time	-0.09*	0.04	-2.14	-0.09*	0.04	-2.14
University degree	-0.16**	0.05	-2.97	-0.17**	0.06	-3.00
AUTO. INNOVATION	0.35***	0.04	8.67	0.36***	0.04	8.92
AUTONOMY	0.21***	0.02	11.47	0.21***	0.02	11.53
TEAM	0.37***	0.03	11.91	0.35***	0.03	11.55
INVOLVEMENT	0.56***	0.05	10.77	0.59***	0.05	11.17
<b>INDIRECT EFFECTS</b>						
INNOVATION						
University degree	-0.01	0.00	-1.56	-0.01^	0.01	-1.70
AUTO. INNOVATION	0.02*	0.01	1.99	0.02*	0.01	2.24
AUTONOMY	0.01*	0.00	2.02	0.01*	0.00	2.29
TEAM	0.02*	0.01	1.96	0.02*	0.01	2.18
INVOLVEMENT	0.03*	0.01	1.98	0.03*	0.01	2.23
WORKLOAD <sup>a</sup>	0 (no path)			0 (no path)		

Notes: Standardized coefficients significant at level: ^ p < .10. \* p < .05. \*\* p < .01. \*\*\* p < .001.

Maximum likelihood estimation method (missing at random replacement).

Organization level cluster-robust standard errors.

<sup>a</sup> No path from workload to satisfaction is included since these two dimension are not correlated.

Table 7 - Total Effects

	MODEL 1			MODEL 2		
	Organizational Innovation included			Organizational innovation excluded		
	Standardized Coef.	Robust Std. Err.	z	Standardize d Coef.	Robust Std. Err.	z
<b>INNOVATION</b>						
SATISFACTION	0.05*	0.02	2.00	0.05*	0.02	2.27
Log size	0.06^	0.03	1.73	0.04	0.04	0.98
Member mean	0.28	0.18	1.56	0.37^	0.19	1.89
Firm type	0.01	0.07	0.10	-0.04	0.08	-0.47
North west	0.13	0.14	0.94	0.16	0.15	1.03
North east	0.15	0.16	0.98	0.16	0.16	0.96
Centre	0.24	0.16	1.45	0.18	0.17	1.05
Age	0.00	0.00	-1.36	0.00	0.00	-1.38
Gender	0.00	0.00	1.06	0.00	0.00	1.19
Permanent	0.00	0.00	-0.46	0.00	0.00	-0.49
Tenure	0.00	0.00	0.04	0.00	0.00	-0.09
Partime	0.00	0.00	-1.47	0.00	0.00	-1.58
Hourly wage	0.00	0.00	1.13	0.00	0.00	1.14
Member	0.00	0.00	-1.23	0.00	0.00	-1.34
Edu. Secondary	0.00	0.00	0.59	0.00	0.00	0.59
Edu. University	-0.01	0.00	-1.56	-0.01^	0.01	-1.7
AUTO. INNOVATION	0.07**	0.03	2.62	0.05*	0.03	2.04
AUTONOMY	-0.02^	0.01	-1.76	-0.01	0.01	-1.38
TEAM	0.01	0.02	0.37	0.02	0.02	0.91
INVOLVEMENT	0.07*	0.04	2.02	0.07*	0.03	2.06
WORKLOAD	0.05^	0.03	1.88	0.04	0.03	1.28
<b>SATISFACTION</b>						
Age	0.00^	0.00	-1.9	0.00^	0	-1.77
Gender	0.05	0.04	1.27	0.06	0.04	1.47
Permanent	-0.02	0.05	-0.48	-0.02	0.05	-0.51
Tenure	0.00	0.00	0.04	0.00	0.00	-0.09
Partime	-0.09*	0.04	-2.14	-0.09*	0.04	-2.14
Hourly wage	0.01	0.01	1.58	0.01	0.01	1.49
Member	-0.07	0.05	-1.41	-0.08	0.05	-1.57
Edu. Secondary	0.02	0.04	0.62	0.02	0.04	0.62
Edu. University	-0.16**	0.05	-2.97	-0.17**	0.06	-3.00
AUTO. INNOVATION	0.35***	0.04	8.67	0.36***	0.04	8.92
AUTONOMY	0.21***	0.02	11.47	0.21***	0.02	11.53
TEAM	0.37***	0.03	11.91	0.35***	0.03	11.55
INVOLVEMENT	0.56***	0.05	10.77	0.59***	0.05	11.17

Notes: Standardized coefficients significant at level: ^ p < .10. \* p < .05. \*\* p < .01. \*\*\* p < .001.

Maximum likelihood estimation method (missing at random replacement).

Organization level cluster-robust standard errors.

When considering total effects, immaterial satisfaction, autonomous innovation and involvement emerge as the most relevant determinants of performance. Their impact is similar and implies a 5 to 7 percent St.Dv. variation in performance. Involvement has now a significant impact implying that involvement processes significantly influence product quality and innovation only when they improve satisfaction. The positive impact of collaborative teamwork is not significant, but the negative sign of the direct effect has been reverted by the mediating role of satisfaction to a

positive one. The primary function of teamwork appears more relevant in increasing worker wellbeing and in empowering worker skills than in fostering firm performance directly. Task autonomy retains its negative impact, which, however, is now weaker and hardly significant (significant at the 10 per cent level in MODEL1 and not significant in MODEL2). The negative impact of task autonomy appears tolerable once we account for its positive effect on worker wellbeing. The positive impact of workload pressure is still relevant (about 5 per cent of one St.Dv.), but it is weakly significant only in MODEL1.

Goodness-of-fit and estimation method. The goodness of fit indexes for MODEL1 and MODEL2 are shown in Table 8. RMSEA is low (below 0.05), while all the other indexes show values that are not in contrast with a good fit of the model. Stability conditions are satisfied since the stability index equals 0. As for individual variable, all the eigenvalues lie inside the unit circle. The estimation method is maximum likelihood with replacement of missing values, which is equivalent to missing at random replacement. This estimation method can deliver biased estimates. Without replacement of missing values the number of usable cases decreases to 1,947 and involvement does not show a significant total impact on performance, while satisfaction is only significant (10 per cent level). However, when teamwork, which carries with it 828 not applicable cases, is excluded, the number of usable cases increases to 2,646, and the total effect of involvement becomes significant (10 per cent level).

**Table 8 - Goodness of Fit of the Complete Models**

FIT STATISTICS	chi2 model vs saturated	RMSEA	90% CI, lower bound	90% CI, upper bound	P-close	BIC	TLI	SRMR	CD Coeff. Determin
MODEL 1 (Org. innovation included)	4476.2	0.042	0.00	.	.	429065.1	0.88	Ⓜ	0.99
MODEL 2 (Org. innovation excluded)	3278.4	0.040	0.00	.	.	395803.9	0.87	Ⓜ	0.99

Notes: Ⓜ SRMR is not reported because of missing values.

Common method bias: post-hoc testing and other reports for worker involvement. The results presented heretofore are based on worker’s perceptions concerning substantive characteristics and satisfaction, and on directors’ evaluation of organizational performance. Common method bias (CMB) can significantly impact on these results, most of all when worker perceptions only are involved, hence in the relation between organizational resources and immaterial satisfaction. Insofar as this relation enters in the indirect impact of organizational resources on performance, it can bias results (Podsakoff et al., 2003). This is true even if overestimation of parameters is not to be considered a necessary result of self-rating, which instead can lead to underestimated parameters due to lack of reliability (Conway and Lance, 2010; Lance et al., 2010).

Following Bharadwaj et al. (1999) and Pdsakoff et al. (2003) we first resort post hoc testing in terms of the Harman’s one-factor test as diagnostic to assess the potential existence of CMB. We run CatPCA on the 20 Likert items representing four different organizational resources (autonomy,

teamwork, involvement, and workload) plus the items of satisfaction using spline ordinal scaling level. We then use EFA to extract the first un-rotated general factor. Applying both the principal components and principal axis extraction methods the first factor explains, respectively, 19 per cent and 16 per cent of total variance out of 53 per cent and 40 per cent of total variance explained by the two extraction methods. Since the variance explained by the first factor is less than 50 per cent of the variance explained by all factors the impact of CMB appears marginal.

We then resort to other reports concerning managerial evaluations of the degree of worker involvement (Lance et al., 2010). We focus on involvement since only for this measure we are able to perfectly match the three items evaluated by workers with the same items evaluated by managers. In all our discussion of method bias, performance is defined as in MODEL1 (organizational innovation is included). Involvement and all the control variables are unchanged in both specifications of our model.

The model using managers' responses shows a positive impact of involvement on performance (the p-value is equal to 0.088 in the initial model and 0.092 when considering total effects). We then run the same model including workers statements about involvement and excluding all the other organizational resources to perfectly replicate the result derived from managerial statements. Using workers' statements, the p-value for the impact of involvement on performance is equal to 0.062 in the initial model and to 0.003 when considering total effects. The dimension of the impacts is indeed lower in the case of worker statements than in the case of managerial statements (respectively, 0.09 St.Dv. vs. 0.19 St.Dv. in the non-mediated model, while the total effects in the mediated model are 0.10 St.Dv. vs. 0.12 St.Dv.). These results support the view that the weaker statistical significance of managerial responses is mainly due to the substantially smaller dimension of the sample.

As our last control we develop a multi-method model to check for the convergent validity of the involvement construct. We include data concerning the same practice (involvement), but coming from two different sources (workers and managers) in the same latent variable in CFA. The dimension of the parameters and the statistical significance in the CFA relating managerial statements and the unique factor representing involvement are smaller than in the case of worker statements, but this is due to the much smaller number of observations. The same statistics are also significantly smaller than in the case of the mono-method model (when only managerial data are used). However, all coefficients of the CFA concerning managerial self-reports are still positive and highly statistically significant (no p-value is higher than 0.5 per cent). In the multi-method model, where we again consider only involvement among organizational resources, the impact of involvement on performance is statistically significant, showing a p-value of 4.7 per cent in the non-mediated model and of 2.4 per cent in the mediation model in terms of total effect. All these observations taken together lead us to conclude that biasing methods effects appear marginal and support the validity of all the main results worked out using workers' and directors' statements.

## 5. Discussion of Hypotheses and Implications

Our results show that when the mediating role of workers' satisfaction is not considered, firm performance is mainly enhanced by increased job-demands coming from the organization (workload pressure) and by autonomous innovative action. The positive impact of involvement (in the mission of the organization and in decision making) on performance includes a substantial component that is related to worker satisfaction. In line with existing research (Ostroff, 1992), we also show that satisfaction with intrinsic aspects of the job is relevant in improving performance. Moreover, we have contrasted the positive impacts of involvement and autonomous innovation with the negative results of task autonomy and team-work. These factors do not contribute positively to performance, but foster worker sense of fulfillment with their work experience. Our results are highly coherent with the ones by Messersmith et al. (2011, p. 1107), who measure the mediating effects of workers' attitudes and behaviors in the Organizational resources-performance nexus by using structural equation modeling. However, our contribution differs from theirs in terms of characteristics considered, sector of the economy (nonprofit vs. public sector) and measures used (self-reported vs. administrative).

Overall, our results support the relevance of substantive features of HRM processes that were selected for their potential role in supporting the use of CI. These dimensions have shown to impact on measures of worker accomplishment and firm performance, which were built to provide an indication of the use of CI. Specifically, if we consider the initial hypotheses, designated organizational resources positively impact on satisfaction, supporting *Hypothesis 1a*. Likewise, selected items of satisfaction positively impact on performance, supporting *Hypothesis 1b* (see also additional results in Appendix C). *Hypothesis 2b* and *Hypothesis 4* are also supported by our results since involvement and autonomous innovation emerge as crucial dimensions that foster performance (see also additional results in Appendix C).

Regarding autonomy, we had differentiated between routine-related and innovation-related autonomy. This decomposition allows two different results to emerge. Whilst autonomous innovation has a *direct* significant effect on performance, which is reinforced by satisfaction through *indirect effect*, unrestrained or uncoordinated task autonomy may be detrimental to performance. In fact, even with the mediating role of satisfaction, the negative impact of task autonomy does not disappear. As social cooperatives tend to offer workers a high degree of task autonomy, we explain this result with the relational and non-standardized nature of the services provided (Borzaga and Depedri, 2005). Also, membership rights in cooperatives may contribute to intensify the degree of worker autonomy, and to engender the risk of increased organizational costs (Hansmann, 1996). However, it is the channeling of autonomous effort away from routine tasks towards innovation-seeking activities that will most likely effect organizational performance. *Hypothesis 2a*, therefore, is not supported as the negative effects of task autonomy outperform the positive ones. *Hypothesis 2b* is instead supported. When the results concerning autonomy are compared with the results of involvement, it is the possibility to be involved in decision-making and to propose new service solutions that is more likely to channel individual understanding towards improved performance. Results support our emphasis on a contextual and social

construction of meaning and to inter-subjective learning, whereby creative intelligence is stimulated by interaction with others, or by the social dimension of deliberation.

Collaborative teamwork substantially improves worker satisfaction, but not performance. The *direct* (negative) and *total* (positive) impacts are not significant. *Hypothesis 3* is not supported by the data insofar as no clear-cut impact of teamwork is detected. Results concerning teamwork, however, can have some interest of their own, even if not significant. One possible interpretation points at: the nature of team tasks which, if repetitive and tedious, may not engage the worker in developing new ideas; to lack of coordination or, possibly, rivalry, retention of information and diverging objectives within and between different teams (Hodson, 2002). These aspects of teamwork would represent constraints to the improvement of services. On the other hand, teamwork clearly boosts individual sense of fulfillment (and this may positively contribute to performance).

On the demand side, workload pressure does not exert any impacts (positive or negative) on worker satisfaction, while its effect on performance is weakly positive, thus giving weak support to *Hypothesis 5*. When accounting for satisfaction, resources, rather than job demands, emerge as more crucial dimensions in supporting performance.

### 5.1 Theoretical implications

In the light of our results, the human growth perspective can refine current understanding of Organizational resources, job demands and performance by accounting at the same time of both workers and users interests. Involvement has provided an indication of the degree of “engagement of body and mind” advocated by Dewey. Through satisfaction, involvement is the most powerful way to increase innovation and service quality, which have the unique potential of improving users’ life quality. This is possibly due the fact that engagement requires commitment. In particular, engagement with decision-making processes, by definition, must contain elements of coordination with others. Involvement entails and points at the relevance of deliberation mechanisms to support autonomous thinking (as reflected in the positive impact of autonomous innovation), alongside the complementary principles of interconnectedness and inter-subjective understanding of situations and problems. Here the Deweyan notion of relatedness, or interconnectedness, of the individual with the environment bears an important explanatory role. By means of deliberation, others’ perspectives and needs can be integrated in the assessment of situations and problems. This is specifically true when deliberation regards the values and choices of the organization (as captured by our involvement factor) rather than being confined to the specific tasks of teamwork (which does not bear significant effects on performance). We would conclude that with involvement CI is used to shape strategic choices rather than being solely attached to operational objectives defined by superiors (as in teamwork). In these respects, involvement in the definition of organizational aims and methods is pivotal for CI to contribute to worker satisfaction and to collectively beneficial outcomes. Our approach and results emphasize the desirability of considering users as stakeholders in decisions concerning organizational resources.

Future research may benefit from studying particular interactions further, such as the circumstances under which task-autonomy bears a negative effect on performance. In this

autonomy may also be hypothesized to represent a “dark side” of involvement in that excessive levels of autonomy connected with participatory decision making can engender excessive organizational costs. Moreover, we would envisage a more in-depth study of the interaction between workers’ and users’ wellbeing (or other interested publics more generally).

### *5.2 Managerial implications*

The general message coming from our results is that under particular circumstances there can be no conflict between workers fulfillment and the quality and innovativeness of services offered to users. Indeed, the two aspects are likely to reinforce each other. Organizational resources directed to improve performance have only weak effects if they prioritize workload pressure and limited job resources, unless a more comprehensive notion of Deweyian growth (as reflected by immaterial satisfaction) is taken into account. Through satisfaction, performance towards users is improved, in particular, if managerial action addresses primarily involvement processes and, at the same time, promotes employees opportunities to use CI in other fields of activity. Complementary, when supporting worker satisfaction through task autonomy or teamwork, proper coordination mechanisms needs to be developed, pointing again towards the fundamental importance of crafting involvement in a Deweyan fashion, to provide spaces for quality deliberation and communication.

### *5.3 Limitation of the study*

In developing our mediation model we have interpreted parameters as measures of causal effects based on background scientific knowledge and on our specific causal assumptions. At the substantive level, our model considers organizational resources as exogenous factors beyond workers’ control since we assume that they are defined almost exclusively by the organizational model or by managerial choices. Hence we analyze their impact on wellbeing as intermediate outcome, and on performance as the final outcome. All this said, we cannot exclude the existence of feedback loops of cumulative or reverse causation. Different outcomes in terms of wellbeing or performance can inform debate and managerial policy directed to modify specific organizational features. Performance itself can have a direct impact on employee wellbeing.

Methodologically, we are not able to establish causation because we do not carry out fully controlled and randomized experiments, and the cross-section design of our study does not allow singling out unobservable fixed effects, possible endogeneity problems and time dynamics. The large dimension and stratification of the sample and the use of a wide range of control can mitigate, but not eliminate, these shortcomings. Moreover, the question concerning performance is cast in terms of improvement of quality and innovation over a three years period. In order to give a causal interpretation of results, we are forced to assume that the features of organizational resources and the degree of worker satisfaction have not significantly changed over those three years.

Furthermore, we have been dealing with one sector only (social services), and one organizational form (the not-for-profit social cooperative). Since the study is restricted to the national context of Italy, caution should be taken in the generalization of results since most workers in the sample are members of their cooperative. The formal right to participate in general assemblies and elect

representatives in the board of directors can give peculiar weight to involvement processes in influencing firm performance, differently from what is observed in most other organizational forms. At any rate, even if more general results are pending, the implications of our findings can be considered and further explored also in other organizational contexts.

## References

- Amabile, T.M. (1983), "The social psychology of creativity: A componential conceptualization", *Journal of Personality and Social Psychology*, 45: 357-376.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996), "Assessing the work environment for creativity", *The Academy of Management Journal*, 39: 1154-1184.
- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A.L. (2000), *Manufacturing advantage. Why high performance work systems pay-off*. Ithaca, MA: Cornell University Press.
- Arthur, J.B. (1994), "Effects of human resource systems on manufacturing performance and turnover", *The Academy of Management Journal*, 37: 670-687.
- Bakker, A.B., Schaufeli, W.B., Leiter, M.P., & Taris, T.W. (2008), "Work engagement: An emerging concept in occupational health psychology", *Work & Stress*, 22: 187-200.
- Batt, R. (2002), "Managing customer services: Human resource practices, quit rates, and sales growth", *The Academy of Management Journal*, 45: 587-597.
- Baum, C.F., Nichols, A. & Schaffer, M.E. (2010), "Evaluating one-way and two-way cluster-robust covariance matrix estimates". Boston 2010 Stata Conference. Available at: [http://www.stata.com/meeting/boston10/boston10\\_baum.pdf](http://www.stata.com/meeting/boston10/boston10_baum.pdf) [Accessed: 31 May 2013].
- Becchetti, L., Castriota, S. & Tortia, E.C. (2012), "Productivity, wages and intrinsic motivation in social enterprises", *Small Business Economics*.
- Bharadwaj, A., Bharadwaj, S., & Konsynski, B. (1999), "Information technology effects on firm performance as measured by Tobin's q", *Management Science*, 45: 1008-1024.
- Biron, M., & Bamberger, P. (2010), "The impact of structural empowerment on individual well-being and performance: Taking agent preferences, self-efficacy and operational constraints into account", *Human Relations*, 63: 163-191.
- Böckerman, P., & Ilmakunnas, P. (2012), "The job-satisfaction-productivity nexus: A study using matched survey and register data", *Industrial & Labor Relations Review*, 65: 244-262.
- Borzaga, C., & Depedri, S. (2005), "Interpersonal relations and job satisfaction: some empirical results in social and community care services". In B. Gui and R. Sugden (eds.), *Economics and Social Interaction: accounting for interpersonal relations*, (pp. 132-53). Cambridge: Cambridge University Press.
- Borzaga, C., & Tortia, E.C. (2010), "The Economics of Social Enterprises. An Interpretive Framework". In L. Becchetti and C. Borzaga (eds.), *The Economics of Social Responsibility: The World of Social Enterprises*, (pp. 15-33). London, U.K.: Routledge.
- Castanheira, F. & Chambel, M.J. (2010), "Reducing burnout in call-centers through HR practices", *Human Resource Management*, 49: 1047-1065.

- Combs, J., Yongmei, L., Hall, A., & Ketchen, D. (2006), "How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance", *Personnel Psychology*, 59: 501-528.
- Conway, J.M., & Lance, C.E. (2010), "What Reviewers Should Expect from Authors Regarding Common Method Bias in Organizational Research", *Journal of Business Psychology*, 25: 325–334.
- Cottini, E., Kato, T., & Westergaard-Nielsen, N. (2011), "Adverse workplace conditions, high-involvement work practices and labor turnover: Evidence from Danish linked employer-employee data", *Labour Economics*, 18: 872-880.
- Cox, A., Zagelmeyer, S., & Marchington, M. (2006), "Embedding employee involvement and participation at work", *Human Resource Management Journal*, 16: 250–267.
- Deci, E.L., & Ryan, R.M. (1990), *Intrinsic motivation and self-determination in human behavior*. New York, N.Y.: Plenum Press.
- Deci, E.L., & Ryan, R.M. (2000), "The 'what' and 'why' of goal pursuits: human needs and the self-determination of behavior", *Psychological Inquiry*, 11: 227-268.
- Dewey, J. (1917), *Creative intelligence: essays in the pragmatic attitude*. Reproduced in D. Sidorsky, (ed.) (1977). John Dewey. New York, N.Y.: Harper.
- Dewey, J. (1922), "Human nature and conduct", in J.A. Boydston (ed.) *The Middle Works, 1899-1924*, Vol. 14, 1984. Carbondale, IL: Southern Illinois University.
- Dewey, J. (1927), "The Public and its problems", in L.A. Hickman and T.M. Alexander (ed.) (1998), *The Essential Dewey*, Vol. 1: 293-307. Bloomington and Indianapolis: Indiana University Press.
- Dewey, J. (1930), "Individualism old and new", in J.A. Boydston (ed.) *The Later Works, 1925-1953*, Vol. 5, 1984. Carbondale, IL: Southern Illinois University.
- Dewey, J. (1934), *Art as experience*. New York: Minton, Balch & Company.
- Diamantidis, A.D., & Chatzoglou, P.D. (2011), "Human resource involvement, job-related factors, and their relation with firm performance: experiences from Greece", *International Journal of Human Resource management*, 22: 1531-1553.
- Drucker, P.F. (2006), *Managing the Non-Profit Organization: Practices and Principles*. New York, N.Y.: Harper.
- Fesmire, S. (2003), *John Dewey and moral imagination: Pragmatism in ethics*. Bloomington (IN): Indiana University Press.
- Ford, C.M. (1996), "A theory of individual creative action in multiple social domains", *Academy of Management Review*, 21: 1112-1142.
- Gioia, D.A., & Poole, P.P. (1984), "Scripts in organizational behavior", *Academy of Management Review*, 9: 449-459.
- Guest, D.E. (2002), "Human resource management, corporate performance and employee wellbeing: Building the worker into HRM", *The Journal of Industrial Relations*, 44: 335-358.
- Guest, D.E. (2011), "Human resource management and performance: Still searching for some answers", *Human Resource Management Journal*, 21: 3-13.
- Habermas, J. (1992), *Autonomy and solidarity* (Dews, P., ed.). London, UK: Verso.
- Hansmann, H. (1996), *The ownership of enterprise*. Cambridge, MA: Belknap Press of Harvard University Press.
- Hodson, R. (2002), "Worker participation and teams: New evidence from analyzing organizational ethnographies", *Economic & Industrial Democracy*, 23: 491-528.
- Holland, P., Pyman, A., Cooper, B.K., & Teicher, J. (2011), "Employee voice and job satisfaction in Australia: The centrality of direct voice", *Human Resource Management*, 50: 95-111.

- Huselid, M.A. (1995), "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Performance", *The Academy of Management Journal*, 38: 635–672.
- Ichniowski, C., Shaw, K., & Pennushi, G. (1997), "The effects of human resource management practices on productivity: A study of steel finishing lines", *The American Economic Review*, 87: 291-313.
- ISTAT (2003), *Rapporto sulle cooperative sociali*. Roma: Istituto Nazionale di Statistica.
- Janssen, O., Van De Vliert, E., & West, M. (2004), "The bright and dark sides of individual and group innovation: a Special Issue introduction", *Journal of Organizational Behavior*, 25: 129-145.
- Joas, H. (1996), *The creativity of action*. Chicago, IL: University of Chicago Press.
- Kanter, R.M. (1988), "When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organization", *Research in Organizational Behavior*, 10: 169-211.
- Kaya, N., Koc, E., & Topcu, D. (2010), "An exploratory analysis of the influence of human resource management activities and organizational climate on job satisfaction in Turkish banks", *International Journal of Human Resource Management*, 21: 2031-2051.
- Kehoe, R.R., & Wright, P.M. (2010), "The impact of high performance human resource practices on employees' attitudes and behaviors", *Journal of Management*, 39: 366-391.
- Kirton, M.J. (1984), "Adaptors and innovators. Why new initiatives are blocked", *Long Range Planning*, 17: 137-143.
- Kline, R.B. (2011), *Principles and practice of structural equation modeling*. New York: Guilford.
- Kwon, K., Chung, K., Roh, H., Chadwick, C., & Lawler, J.J. (2012), "The moderating effects of organizational context on the relationship between voluntary turnover and organizational performance: Evidence from Korea", *Human Resource Management*, 51: 47-70.
- Lance, C.E., Dawson, B., Birklebach, D., & Hoffman, B.J. (2010), "Method effects, measurement error, and substantive conclusions", *Organizational Research Methods*, 13: 435-455.
- Langfred C.W. (2004), "Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams", *The Academy of Management Journal*, 47( 3): 385–399.
- Lawler, E.E. (1986), *High involvement management*. San Francisco, CA: Jossey Bass.
- Lee, F.H., Lee, T.Z., & Wu, W.Y. (2010), "The relationship between human resource management practices, business strategy and firm performance: evidence from steel industry in Taiwan", *International Journal of Human Resource Management*, 21: 1351–1372.
- Li, X., Frenkel, S., & Sanders, K. (2011), "How do perceptions of the HRM system affect employee attitudes? A multi-level study of Chinese employees", *International Journal of Human Resource Management*, 22: 1823-1840.
- Liao, H., Toya, K., Lepak, D.P., & Hong, Y. (2009), "Do they see eye to eye? Management and employee perspectives of high-performance work systems and influence processes on service quality", *Journal of Applied Psychology*, 94: 371-391.
- Liao, H. & Chuang, A. (2004), "A multilevel investigation of factors influencing employee service performance and customer outcomes", *The Academy of Management Journal*, 47: 41-58.
- Macduffie, J.P. (1995), "Human resource bundles and manufacturing performance: Organizational logic and flexible production systems", *Industrial and Labor Relation Review*, 48: 197-221.
- MacKinnon, D.P., Fairchild, A.J., & Fritz, M.S. (2007), "Mediation Analysis", *Annual Review of Psychology*, 58: 593-614.
- MacKinnon, D.P. (2008), *Statistical mediation analysis*. New York, NJ: Psychology Press, Taylor and Francis.
- McMahan, G.C., Bell, M.P., & Virick, M. (1998), "Strategic human resource management: Employee involvement, diversity and international issues", *Human Resource Management Review*, 8: 193-214.

- Messersmith, J.K., Lepak, D.P., Patel, P.C., & Gould-Williams, J.S. (2011), "Unlocking the black box: Exploring the link between high-performance work systems and performance", *Journal of Applied Psychology*, 96: 1105-1118.
- Milliken, F., & Martins, L. (1996), "Searching for common threads: understanding the multiple effects of diversity in organizational groups", *Academy of Management Review*, 21: 402-433.
- Montes, F.J.L., Moreno, A.R., & Morales, V.G. (2005), "Influence of support leadership and teamwork cohesion on organizational learning, innovation and performance: an empirical examination", *Technovation*, 25: 1159-1172.
- Mukherjee, A., & Malhotra, N. (2006), "Does role clarity explain employee-perceived service quality? A study of antecedents and consequences in call centres", *International Journal of Service Industry Management*, 17: 444- 473.
- Ostroff, C. (1992), "The relationship between satisfaction, attitudes, and performance: An organizational level analysis", *Journal of Applied Psychology*, 77: 963-974.
- Ostrom, E. (2010), "Beyond markets and states: Polycentric governance of complex economic systems", *American Economic Review*, 100: 641-72.
- Pearl, J. (2011), "The mediation formula: A guide to the assessment of causal pathways in nonlinear models", University of California, Los Angeles Computer Science Department, Technical report R-363, October. Available at: [http://ftp.cs.ucla.edu/pub/stat\\_ser/r363.pdf](http://ftp.cs.ucla.edu/pub/stat_ser/r363.pdf) [Accessed: 15 May 2013].
- Pearl, J. (2012), "The causal foundations of Structural Equation Modeling", University of California, Los Angeles Computer Science Department, Technical report R-370, October. Available at: [http://ftp.cs.ucla.edu/pub/stat\\_ser/r370.pdf](http://ftp.cs.ucla.edu/pub/stat_ser/r370.pdf) [Accessed: 31 May 2013].
- Pirola-Merlo, A. & Mann, L. (2004), "The relationship between individual creativity and team creativity: aggregating across people and time", *Journal of Organizational Behavior*, 25: 235-257.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J., & Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, 88: 879-903.
- Richardson, M., Danford, A., Stewart, P., & Pulignano, V. (2010), "Employee participation and involvement: Experiences of aerospace and automobile workers in the UK and Italy", *European Journal of Industrial Relations*, 16: 21-37.
- Robinson, S.E., Roth, S.L., & Brown, L.L. (1993), "Morale and job satisfaction among nurses: What can hospitals do?" *Journal of Applied Social Psychology*, 23: 244-251.
- Rose-Ackerman, S. (1996), "Altruism, nonprofits, and economic theory", *Journal of Economic Literature*, 34: 701-728.
- Schaufeli, W.B., Bakker, A.B., & Van Rhenen, W. (2009), "How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism", *Journal of Organizational Behavior*, 30: 893-917.
- Schreiber, J.B., Stage, F.K., King, J., Nora, A., & Barlow, E.A. (2006), "Reporting structural equation modeling and confirmatory factor analysis results: A review", *The Journal of Educational Research*, 99: 323-337.
- Sen, A. (1999), *Development as freedom*. Oxford, UK: Oxford University Press.
- Siddique, C.M. (2004), "Job Analysis: A Strategic Human Resource Management Practice", *International Journal of Human Resource Management*, 15: 219-244.
- Spreitzer, G.M. (1995), "Psychological empowerment in the workplace: Dimensions, Measurement, and Validation", *The Academy of Management Journal*, 38: 1442-1465.

- Sprigg, C.A., Jackson, P.R., & Parker, S.K. (2000), "Production teamworking: The importance of interdependence and autonomy for employee strain and satisfaction", *Human Relations*, 53: 1519-1543.
- Takeuchi, R., Chen, G., & Lepak, D.P. (2009), "Through the looking glass of a social system. Cross-level effects of high performance work systems on employees' attitudes", *Personnel Psychology*, 62: 1-29.
- Takeuchi, R., Lepak, D.P., Wang, H., & Takeuchi, K. (2007), "An empirical examination of the mechanisms mediating between high performance work systems and the performance of Japanese organizations", *Journal of Applied Psychology*, 92: 1069-1083.
- Thomas, K.W., & Velthouse, B.A. (1990), "Cognitive elements of empowerment: An 'interpretive' model of intrinsic task motivation", *Academy of Management Review*, 15: 666-681.
- UNDP (2010), *Human development report 2010. The real wealth of nations: Pathways to human development*. New York, US: Palgrave Macmillan.
- Wall, T.D. & Wood, S.J. (2005), "The romance of human resource management and business performance, and the case for big science", *Human Relations*, 58: 429-462.
- Wang, Y., Liu, X., & Zhu, Y. (2007), "Study on the relationship among organization climate, employee attitude and firm performance". In: Kaminishi, K., & Duysters, G. (eds.), *Proceedings of the 4<sup>th</sup> International Conference on Innovation & Management*, Vol. I and II: 601-606.
- West, M.A. (1990), "The social psychology of innovation in groups". In M.A. West & J.L. Farr (eds.), *Innovation and creativity at work: psychological and organizational strategies*, (pp. 101-122). Chichester: Wiley.
- Whitman, D.S., Van Rooy, D.L., & Viswesvaran, C. (2010), "Satisfaction, citizenship behaviors, and performance in work units: A meta-analysis of collective construct relations", *Personnel Psychology*, 63: 41-81.
- Wood, S.J. & Wall, T.D. (2007), "Work enrichment and employee voice in human resource management-performance studies", *International Journal of Human Resource Management*, 18: 1335-1372.
- Zatzick, C.D., & Iverson, R.D. (2011), "Putting employee involvement in context: a cross-level model examining job satisfaction and absenteeism in high-involvement work systems", *International Journal of Human Resource Management* 22: 3462-3476.

## Appendix A

**Table A1 - Socio-demographic Features of the Workforce**

	No. of observations	Min	Max	Average or Frequency ***	Standard deviation	Coefficient of variation
<i>Socio-demographic features</i>						
Age	4134	17	73	37.41	9.01	0.24
Gender (female)*	4134			74.2	0.44	0.25
Secondary education*	4134			51.6	0.50	0.97
University degree*	4134			17.5	0.38	2.17
<i>Contractual features</i>						
Hourly wage	4134	1.357	60.930	6.57	2.44	0.37
Monetary incentives*	4134			5.5	0.23	4.14
Tenure (years)	4134	0	35	5.7	5.47	0.96
Part-time position*	4134			31.95	0.47	1.46
Permanent*	4134			80.7	0.39	0.22
<i>Job tasks</i>						
Relationship with clients*	4134			55.9	0.50	0.89
Coordination*	4134			5.7	0.23	4.07
Manual worker*	4134			9.2	0.29	3.15
Multiple tasks*	4134			16.6	0.37	2.24
<i>Inclusion</i>						
Worker-members	4134	0%	100%	75.6	0.23	0.31
Intensity of member's participation**	3124	1	5	3.96	1.23	0.21

*Source: Authors' calculations on SISC 2007 (Survey on Italian Social Cooperatives 2006).*

\*Dummy variable.

\*\*Likert scale.

\*\*\* Average data for continuous numeric variables; frequency for dummy variables.

## Appendix B

### The Mediation Model

The mediation model can be represented by the following three equations, which follow the frame defined in MacKinnon (2008), and in MacKinnon et al. (2007):

$$P = \alpha_1 + \beta_1 * T_{ig} + \beta_2 * A_{ig} + \beta_3 * I_{ig} + \beta_4 * W_{ig} + \beta_4 * AI_{ig} + \beta_m * X_g + \epsilon_{1ig} \quad (1)$$

$$P = \alpha_2 + \beta_1' * T_{ig} + \beta_2' * A_{ig} + \beta_3' * I_{ig} + \beta_4' * W_{ig} + \beta_4' * AI_{ig} + \beta_m' * X_g + \eta * S + \epsilon_{2ig} \quad (2)$$

$$S = \alpha_3 + \gamma_1 * T_{ig} + \gamma_2 * A_{ig} + \gamma_3 * I_{ig} + \gamma_4 * W_{ig} + \gamma_4 * AI_{ig} + \gamma_n * Z_{ig} + \epsilon_{3ig} \quad (3)$$

Where  $i$  represents the number of observations ( $i = 1, \dots, 4,134$ ),  $g$  represent the number of clusters, that is organizations ( $g = 1, \dots, 320$ ). The error components  $\epsilon_{1ig}$ ,  $\epsilon_{2ig}$ , and  $\epsilon_{3ig}$  in the three equations are clustered at the organization level, since the within cluster observations are likely not to be independently and identically distributed (i.i.d.). On the other hand, errors are assumed to be independent between clusters. The within-cluster correlation of errors can arise if the errors are not i.i.d., but rather contain a common shock component as well as an idiosyncratic component:  $\epsilon_{ig} = v_g + \zeta_{ig}$ , where  $v_g$  is a shock common to individual clusters, or cluster-specific error, itself i.i.d, and  $\zeta_{ig}$  is an i.i.d. idiosyncratic individual error (Baum et al., 2010).

$\alpha_1$ ,  $\alpha_2$  and  $\alpha_3$  are intercepts,  $P$  is the latent criterion variable (performance),  $T$  (teamwork),  $A$  (autonomy),  $I$  (innovation),  $W$  (workload pressure), and  $AI$  (autonomous innovation) are the predictor variables.  $X$  is a vector of organizational controls ( $m = 1, \dots, 6$ ) including log-size of the organization (number of employees), share of worker-members out of the total workforce, firm typology (social cooperatives Type A and B), and territorial dummies (Northwest, Northeast, and Central Italy as compared to Southern Italy).  $S$  is the mediator latent variable (immaterial) satisfaction. We control for individual variables included in vector  $Z$  is the vector including individual controls ( $n = 1, \dots, 7$ ). These are age, gender, permanent position in the organization, tenure (number of years in the organization), part-time contract, if member of the organization, and hourly wage.  $\beta_1$  to  $\beta_5$  are the coefficients relating the independent variable and the dependent variable;  $\beta_1'$  to  $\beta_5'$  are the coefficients relating the independent variable to the dependent variable adjusted for the mediator  $S$ ;  $\eta$  is the coefficient relating the mediator  $S$  to the dependent variable adjusted for the independent variable;  $\gamma_1$  to  $\gamma_5$  are the coefficients relating the independent variable to the mediator, and  $\epsilon_1$ ,  $\epsilon_2$ , and  $\epsilon_3$  are residuals.