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# A “Human Growth” Perspective on Organizational Resources and Firm Performance

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n.  
09/2012



# A “Human Growth” Perspective on Organizational Resources and Firm Performance<sup>1</sup>

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## Abstract

We define immaterial satisfaction as the degree of wellbeing that workers derive from creativity, autonomy, and personal growth, overall self-fulfillment. These are dimensions of satisfaction that we relate, from American pragmatism, to the use of creative intelligence. The paper deals with the mediating role of immaterial satisfaction between organizational processes (defined by teamwork, on-the-job autonomy and involvement) and organizational performance (defined in terms of improvements in product quality and innovation). We address this relationship in the Italian social service sector. To this end, we implement a structural equation model including both observed and latent variables using a survey dataset that concerns 4134 workers and 320 not-for-profit social cooperatives. The analysis of direct, indirect and total effects in the structural model shows that autonomous innovation positively influences performance. It also shows that impact immaterial satisfaction adds to the impact of worker involvement in making involvement bear positively on performance, while it also reduces the negative impact of task-autonomy. Common method bias is controlled for by resorting to post-hoc testing and by introducing three distal sources of subjective data from directors, managers and paid workers.

*Key words:* Dewey; satisfaction; creativity; autonomy; involvement; firm performance.

*JEL classification:* J28, J81, L15, L25, L84, M54

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<sup>1</sup> We wish to thank Sascha Becker, Carlo Borzaga, Leonardo Becchetti, Maurizio Carpita, Stefano Castriota, Sara Depedri, Jerry Hallier, Roger Sugden for comments and methodological advice. Thanks in particular to Avner Ben-Ner for discussing the paper and for his critical comments at the VII symposium “Persons, Society, Institutions” in Rome in 2010, Pontifical Lateran University. We also wish to acknowledge the 2009 ICA Conference participants in Oxford, in particular to Carlo Borzaga, Silvio Goglio, Roger Spears. We acknowledge comments by Millan Diaz Fonseca, David Kelman and from the other participants at the Session on “Motivations and Worker Satisfaction” at the Academy of Management 2011 Annual Meeting in San Antonio; and by Marco Faillo and Lorenzo Sacconi at the ASE (Association for Social Economics) world conference in Glasgow, May 2012; EURICSE (European Research Institute on Cooperative and Social Enterprises) and especially Sara Depedri for sharing the SISC/ICSI survey and data on which our empirics are based. Usual disclaimers apply.



# **A “Human Growth” Perspective on Organizational Resources and Firm Performance**

This paper aims at disentangling the relations occurring between organizational processes, worker satisfaction and firm performance in the service sector. We consider only specific aspects for each of these dimensions basing our interpretation on Dewey’s notion of “human growth” (Dewey 1922), and its application to the study of organizations and their stakeholders. The paper addresses, particularly, the organizational potential for a Deweyan human growth for both workers and users in the social welfare sector, where the features of services are directly associable with the life quality enjoyed by users. This perspective and conceptualization allows the study of the relation between organizational features, job satisfaction and organizational performance to extend its relevance and, through a management focus, contribute towards the analysis of wider problems of human and socio-economic development (Sen, 1999; UNDP, 2010). We tackled the selection of specific organizational dimensions considering what contributes to the human growth of individual workers. The aim is to find out whether the organization can pursue the welfare of workers and users by acting on the same organizational resources.

The seminal work of Dewey suggests that the need to express creativity and critical thought is considered as a way (depending on what the person has experienced and values) of achieving self-actualization (Dewey, 1917). More broadly in economic and entrepreneurial activity, critical thinking and creativity have been regarded as drivers of change (Bianchi, 1998; Kirzner, 1989; Schumpeter, 1934; Veblen, 1918). The two go together, as they consider both cognitive and imaginative aspects of enquiry and discovery. Dewey’s pragmatic approach had synthesized the Janusian nature of critical thinking and creativity in his notion of “creative intelligence,” or the capacity of individuals to raise over impulses or contingent desires as a way to achieve “human growth”. The latter happens when individuals use creative intelligence 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). Drawing on Dewey and subsequent contributions in pragmatism and institutionalism (Ford, 1996; Joas, 1996; Sacchetti, Sacchetti, & Sugden, 2009), we regard

creative intelligence (CI) as the ability to identify and problematize a situation in a particular domain in a new and relevant way, transforming inter-subjective understanding into new action, in any field, therefore bringing something into existence using intelligence and imagination, amongst other factors. The relevance of CI, in this conceptualization, differs from notions of creativity used in management studies (Amabile, 1997) not as much for referring to novelty, or to both cognitive and imaginative elements (which are common to other contributions), but because it aims at human fulfillment (rather than innovation), and pertains an ability to critically assess action more broadly. What we argue, however, is that this wider focus can bear positive implications also for organizational performance.

In line with such broader understanding (as exemplified by CI rather than straight creativity) we look at specific elements of individual work-related fulfillment: if fulfillment is achieved through human growth, and if this is a function of the capacity of individuals to use their CI, we can then select items of fulfillment which can be reasonably associated with CI. Specifically, we have identified creativity, autonomy and personal growth as our core dimensions of satisfaction.

In general, the use of CI takes the form of a meaningful interaction between the individual and the organizational environment, as the individual strives to satisfy particular aims and desires. Taking an inter-subjectivist perspective, the exercise of one's CI is dependent not only on the individual's history, attitudes and abilities, but also on the context. 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. In the first instance, however, rather than asking, as in previous studies addressing creativity, what the individual can do for the organization, we take the Deweyan human growth perspective and ask what the organization can do for the individual worker, in terms of promoting those specific aspects of fulfillment that we have associated with the opportunity to exert one's CI.

Consistently with this initial question, we have selected our organizational dimensions. We have in general regarded a number of determinants that the literature collects under the umbrella of "job resources" (Amabile, Conti, Coon, Lazenby & Herron, 1996; Bakker, Schaufeli, Leiter & Taris, 2008; Schaufeli, Bakker & Van Rhenen, 2009), and focused in particular on those related to domains that can have a relevance in explaining our immaterial measures of satisfaction (i.e. routine and innovation-related autonomy, involvement and team

relations). We also consider workload pressure as a measure of the intensity of demands coming from the organization (as in Amabile, et al., 1996).

We assess whether and how the selected aspects of satisfaction mediate the effects of our organizational dimensions on organizational performance, where all these dimensions have been decomposed to reflect a concern with human growth (exemplified by aspects of on-the-job fulfillment) as well as by the quality of the services delivered to users by organizations. 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 CI 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 service quality for users. Methodologically, we use structural equation modeling to analyze the impact of organizational processes on performance and the mediating effect of satisfaction, which can reinforce or weaken the impact of organizational resources and demands on service quality and innovativeness. In Figure 1 we sketch the main hypothesis of the model, which concerns the impact of organizational resources and demands on firm performance, both directly and through the mediation of CI related satisfaction.

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To the best of our knowledge, the impact of organizational resources has been studied starting from different interpretative frameworks, specifically focused on health and satisfaction elements without associating them to a more comprehensive idea of “human growth” (Jones & Fletcher, 1996; Robinson, Roth, & Brown, 1993) and mostly in relation to individual or team-related outcomes, rather than with respect to organizational performance overall (Cf. Laschinger, Grau, Finegan, & Wilk, 2012; Trautmann, Voelcker-Rehage, Godde, 2011). Similarly, studies on creativity have related organizational resources with team or organizational innovation without an explicit focus on the mediating role of satisfaction.

We rely on a national Survey on Italian Social Cooperatives (SISC, hereafter) undertaken in 2006. Data include information about 4134 salaried workers in 320 Italian social cooperatives. These are mutual benefit organizations with a not-for-profit objective whose main activity is devoted to social areas of concern. The original dataset provides a specific application of the study of our measures in the not-for-profit sector, where the role of workers’

attitudes and satisfaction is hypothesized to be substantive (Rose-Ackerman, 1996). To contrast the problems connected with common method bias (Podsakoff, Podsakoff, & MacKenzie, 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 practices) and to paid workers (on several aspects of their job). The strength of the methodology lies with the extensive coverage of organizational dimensions in a homogeneous institutional set-up, sector of activity, and national context. This high homogeneity limits the impact of confounding factors (Becchetti, Castriota, & Tortia, 2012). It also offers extensive coverage in terms of different sources of data, dimension of the sample, national representativeness, and range of controls.

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

Earlier studies have assessed the relation between job-related organizational features and individual reactions mainly in terms of objective welfare measures, such as illness, absenteeism or voluntary turnover (Schaufeli et al., 2009). These contributions have the merit of having emphasized the positive aspects of organizational processes on individual workers' welfare. Differently the focus of this work is on organizational resources and items of individual satisfaction that are hypothesized to be associated with the use of CI. The descriptives of our measures of satisfaction and organizational dimensions are in Table 1.

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Our work shares organizational measures with contributions that have assessed the creative performance of employees within teams (Amabile et al. 1996). To assess CI, however, we do not use objective measures of team outputs and productivity, or yet again a measure of individual cognitive styles, as used in Kirton (1976). By using a composite measure of subjective assessments of satisfaction, rather, the nature of the job is evaluated on the employee's terms rather than on a particular action or project evaluated by managers, experts, or by the researcher.

At a substantive level, we hypothesize immaterial satisfaction related to creative action and critical thinking 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. This choice depends on the proved interconnectedness between service quality and innovation with organizational mechanisms and managerial policies based inclusion and creativity (Amabile et al., 1996; Bharadway and Menon, 2000). Table 2 illustrates the measures and descriptive statistics for organizational performance.

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

## **Organizational Processes and Performance**

The study of organizational features encompassing job resources/demands and their contribution to organizational performance (Combs, Yongmei, Hall, & Ketchen, 2006) has tested different mediating effects. However, findings are not always univocal (Wood & Wall, 2005), leaving a question mark on what conditions make specific organizational features (un)effective. For example, the mediating role of worker fulfillment has not received sufficient attention to date, and this calls for refining the findings concerning job resources and demands alone. Insofar as we deal with the effects of organizational features on performance, as mediated by worker fulfillment, we position this contribution within literature that explores the effects of organizational psychological processes on firm

performance (Kehoe & Wright, 2010; Li, Frenkel and Sanders 2011; Takeuchi, Lepak, Wang & Takeuchi, 2009), sharing the view that satisfaction can represent an important *trait d'union* between managerial policies and organizational outcomes.

In what follows we work out hypotheses concerning the total impact of specific organizational dimensions, including job resources and job demand elements, on firm performance. The hypothesized total effects include the mediating role of our CI- related items of satisfaction.

**Autonomy.** In general, autonomy implies that the individual can use his or her CI to problematize situations, find appropriate ways of acting and set objectives that reflect desired outcomes. This means that s/he not only can select routines which are relevant to the solution of particular problems, or appropriate to habitual circumstances: individuals who are especially capable to discover new situations are also more likely to act creatively (Amabile, 1983; Gioia & 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: the autonomy enjoyed in day-to-day job tasks, in handling relations with customers and users, and in problem solving (three items). 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).

Literature on human resources management and social psychology has been clear in evidencing a positive impact of on on-the-job autonomy on satisfaction, which also involves aspects of commitment (Biron & Bamberger, 2010; Deci & Ryan, 2000; Sprigg, Jackson & Parker, 2000). Task-autonomy has also been argued to have a positive impact on team and individual performance in terms of creative outputs (Amabile et al. 1996). However, on the relation between autonomy and performance evidence does not always point at the same results (Hodson, 2002; Mukherjee and Malhotra, 2006; Tafti, Mithas & Krishnan, 2007). Also a possible mediating role of satisfaction in connecting individual autonomy and firm performance has not been analyzed to date. In our understanding, the sign and strength of the impact of autonomy on firm performance needs to be tested. When coordination is lacking, autonomy, besides broadening the set of behavioral options, can also create obstacles to an adequate circulation of information, or lead to the pursuit of incompatible objectives, to the exacerbation of diverging interests. This, in turn, may negatively impact on overall firm

performance. To the extent to which the positive and negative aspects of autonomy on fulfillment coexist, the impact of autonomy needs testing. We will hypothesize here 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 absent or 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 job resources, mainly in terms of supporting relations, reciprocal trust, and knowledge sharing. 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 existence of a positive relation between teamwork and fulfillment. As for performance, teamwork has been mainly studied with respect to team innovation. Janssen, Van de Vliert & West (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 & 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; Cf. also Kanter 1988; Pirola-Merlo & Mann 2004).

Fewer enquiries exist on the relation between teamwork and organizational performance. These evidence, in general, a positive relationship. For example, using managerial evaluations of leader support, teamwork cohesion, and organizational performance, Montes, Moreno, & Morales (2005) find a strong positive link between teamwork cohesion, organizational learning, and technical and administrative innovation as measures of organizational performance. Lee, Lee & Wu (2010) find a positive impact of human resources (HR) practices, including teamwork, on firm performance (measured as production efficiency), but the specific effect of teamwork is not worked out. Most studies however are based on cross-section design and subjective evaluations, which can be affected by self-selection of

respondents and common method bias. Also, the mediating role of satisfaction is, as a norm, lacking. We hypothesize that the total effect on performance is positive.

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

**Involvement.** Involvement favors a collaborative and learning culture that has been argued to play an important role for a Deweyan human growth. It provides a behavioral framework where people are encouraged to articulate and communicate their views, thus influencing each other's perspectives and preferences. Such inter-subjective interpretation of situations becomes an act of CI and is expected to increase individual sense of accomplishment, not least because it gives voice to intuitions and ideas which can then be verified and reflected into further action (Habermas, 1992; Joas, 1996).

Robust evidence connecting employee involvement and firm performance has already been found in the literature. Initial studies in economics determined that worker cooperatives, where the degree of worker involvement is expected to be particularly high, show a slightly higher level of productivity than investor owned companies (Craig & Pencavel, 1995). Kruse et al. (2003) evidence that worker ownership as in Employee Stock Ownership Plans (ESOP) together with participatory practices appear to reduce shirking by increasing horizontal control and peer pressure. In a similar vein, Kaarsemaker & Poutsma (2006) evidence that involvement practices need to be coherent with the governance principles of worker ownership in order to sustain high involvement and high performance of workers. These findings are consistent with the idea that, through involvement, the endorsement of a communicative culture can improve the creation of new domain-relevant knowledge (Amabile, 1983), as well as workers' inter-subjective understanding of problems and opportunities, thus improving accomplishment but also firm performance.

As suggested by Wood and Wall (2007) and by Richardson, Danford, Stewart & Pulignano (2010) we stress the importance of involvement in terms of participation in decision-making. Research has addressed in particular the relation between involvement, commitment and satisfaction (Cox, Zagelmeyer, & Marchington, 2006; Diamantidis & Chatzoglou, 2011; Holland, Pyman, Cooper, & Teicher, 2011; Zatzik & Iverson, 2011). Authors find a positive relation between involvement and commitment and also a positive, but not unequivocal, relation between involvement and satisfaction. Consistently, involvement

has been regarded as one of the preconditions for the development of trust inside the organization (Ostrom, 2010; Deci & Ryan 1990).

Regarding performance, involvement has been found to be negatively related with indirect (negative) objective measures of performance such as voluntary turnover even in the presence of workplace hazards (Cottini, Kato & Westergaard-Nielsen., 2011; Kwon, Chung, Roh, Chadwick & Lawler, 2012). Other studies evidence a positive relation between involvement and production performance. Initial contributions recognized that high performance work practices related to employee involvement positively contribute to firm productivity and financial performance (Huselid, 1995). These results spanned also to the strategic HR management literature emphasizing HR involvement (Siddique, 2004). More recently, Wang, Liu & Zhu (2007) find that HR practices, employee attitudes, and job involvement are positively related with corporate performance (whilst satisfaction is not significant). Finally, Diamantidis & Chatzoglou (2010) find an indirect link between involvement and firm performance. These results are promising, but do not seem conclusive in establishing a clear relation between involvement and performance. The survey has addressed a sample of workers employed by cooperative firms with a social aim. About three quarters of these workers are members. Hence, as suggested by Richardson et al. (2010), we are in a well versed position to analyze the impact of involvement on performance through the medium of worker satisfaction. We hypothesize that involvement is able to foster performance, mainly because worker participation in decision making and in the mission of the organization enhances the use of individual CI and fulfillment.

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

**Workload.** In terms of the demands that organizations pose to workers, we consider 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, Koc & Topcu (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

## **Data and Methods**

### **The Survey**

All the observed, measured and latent variables used in this study are drawn from the 2006 SISC survey, was conducted by the Universities of Brescia, Milan, Naples, Reggio Calabria, and Trento. The survey is composed by four different questionnaires concerning respectively paid and volunteer workers, organizations, and managers. The questionnaires are based on validated multiple-item questions, most of which are measured on a 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 group or taken at home and, in both cases, handed in in anonymous envelopes, while late compiled questionnaire were sent by post. The questionnaires concerning the organization were compiled by collectors together with one or more directors of the organization, while the questionnaires concerning managers were collected directly from the organization in anonymous envelopes (only one person 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 reintegrate weak subjects 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 4134 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 our analysis we primarily use salaried-worker data, but we

include also variables coming from the organizations' questionnaire as standard controls and for the performance index. 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 salaried 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).

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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. The degree of internal consistency given by reliability analysis is good (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). In the following, we show anyway 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). Hence we update our measures and introduce a second and more parsimonious model in which one item for each of the misfit dimensions is dropped (Schreiber, Stage, King, Nora, & Barlow, 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 to check the robustness of results.

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## Results

Our mediation model follows the standard treatment in the literature, which sorts out direct, indirect and total effects (MacKinnon, 2008; MacKinnon, Fairchild, & Fritz, 2007). Direct effects ( $\beta'$  coefficients, Appendix B) directly flow from organizational processes (exogenous latent) to performance (endogenous latent), net of the indirect effects flowing from organizational processes to performance through the medium of immaterial satisfaction (endogenous latent). Indirect effects can be thought as the product of the impact of organizational processes 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 processes 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.

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In Table 5 we show only the standardized coefficient and standard errors in the initial, non-mediated model. We present the results for 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). Immaterial satisfaction shows a significant positive impact on performance. One standard deviation (St.Dv.) increase in satisfaction induces a 12-13% St.Dv. improvement in performance, which signals a relevant impact. Among organizational processes, autonomous innovation shows a positive impact on performance, though the impact is not robust to model specification. This signals the importance of workers' spontaneous participation in product development in the context of social service, which are characterized by high relational intensity and low standardization (Borzaga and Tortia, 2010). The conjoint significance of the impact of immaterial fulfillment and autonomous innovation shows that achievement in terms 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 the possible detrimental role of autonomy with respect to the diffusion of information and coordination of activities. The overall relation between task autonomy and performance, however, is still to be evaluated since the non-mediated model does not account for the positive relation between satisfaction and autonomy and its influence on performance. Also, the results concerning autonomy may be 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).

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 jobs demands coming from the organization in determining performance. The direct impact of workload, 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 diffused control rights, organizational processes based on involvement, and empowerment in fostering performance.

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All the organizational resources included in the model show a strong positive impact on satisfaction. Comparatively, the organizational features characterized by a high degree of relationality, such as teamwork and involvement, slightly more than autonomy, have the golden share in influencing satisfaction. Since survey questions on organizational processes 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 appears to indicate the existence of relevant underlying relations between organizational resources and satisfaction. Among control variables, workers with a university degree are less satisfied than the others (the effect is equal to a 6% 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.

### **The mediation model: direct, indirect and total effects**

When the above mentioned effects are disentangled into direct, indirect, and total effects new interesting evidence emerges. Direct and indirect effects are shown in Table 6. We include, among control variables, only the statistically significant ones. Direct effects show the patterns directly running from organizational processes to performance, and the patterns running from organizational processes 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 relative to the non-mediated model (from 12 to 5 per cent St.Dv). In the mediation model, in fact, both the direct and indirect effects of organizational processes are subtracted from the impact of satisfaction. Direct effects running from organizational processes 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% of a St.Dv). In the case of the initial model, instead, teamwork showed the largest effect on satisfaction (35% of one St.Dv.).

Indirect effects on performance are the result of the product of two impacts: organizational processes on satisfaction, and satisfaction on performance ( $\gamma$  times  $\eta$  product in equations (2) and (3), Appendix B). They evidence a positive and significant indirect effect of all organizational processes on performance. These indirect effects are similar in terms of statistical significance and dimension (1 to 3 percent St.Dv. variation in performance). We emphasize that also teamwork and task autonomy, which showed a direct negative association with performance, do instead exert an indirect positive influence through the medium of immaterial fulfillment.

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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. Interestingly, involvement has now a significant impact, while the direct effect is not significant. This implies that involvement processes significantly impact on 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. The primary function of teamwork appears more relevant in increasing worker wellbeing and in empowering worker skills and capabilities than in fostering firm performance directly. Task autonomy retains its negative impact, which, however, is now weaker and hardly significant (significant at the 10% level in MODEL1 and not significant in MODEL2). The negative impact of task autonomy appears tolerable once we account for the mediation of satisfaction. The positive impact of workload pressure is still relevant (about 5% of one St.Dv.), but it is weakly significant only in MODEL1.

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**Goodness-of-fit.** 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.

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Insert Table 8 about here  
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**Common method bias: post-hoc testing and other reports for worker involvement.**

The results presented heretofore are based on workers perceptions concerning organizational processes and satisfaction, and on directors' evaluation of organizational performance. Common method bias (CMB) can significantly impact on these results, most of all when only worker perceptions are involved, hence in the relation between organizational processes and immaterial satisfaction. Insofar as this relation enters in the indirect impact of organizational processes 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, & Lance, 2010; Lance, Dawson, Birklebach, D., & Hoffman, *in press*).

Following Bharadwaj, A., Bharadwaj, S., & Konsynski (1999) and Podsakoff 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 the CMB problem. We run CatPCA on the 20 Likert items representing four different organizational processes (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% and 16% of total variance out of 53% and 40% of total variance explained by the two extraction methods. Since the variance explained by the first factor is less than 50% 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., *in press*). Only for involvement we are able to perfectly match the

three items we use in the preceding analysis with the same items evaluated by managers. In all our discussion of method bias performance is defined as in MODEL 1 (organizational innovation is included). Involvement and all the control variables are unchanged in both specifications of our model.

The model using managerial statements shows 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 processes 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 testimony that the weaker statistical significance in the case of managerial statements is mainly due to the substantially smaller dimension of the sample.

As our last check we develop a multi-method model to check for the convergent validity of the involvement construct. We include data concerning the same organizational process (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 much 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%). In the multi-method model, where we again consider only involvement, while we drop autonomy and teamwork, the impact of involvement on performance is statistically significant, showing a p-value of 4.7% in the non-mediated model and of 2.4% 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.

## Discussion of Hypotheses and Implications

Overall, our results support the relevance of organizational features that underpin human growth (as use of CI) for both worker accomplishment and firm performance. 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 weak evidence of a positive role of the selected organizational features (involvement and team relations) in boosting performance is substantially altered when human growth (reflected by satisfaction) is accounted for.

Our selected organizational resources positively impact on satisfaction, supporting *Hypothesis 1a*. Likewise, our selected items of satisfaction positively impact on performance, supporting *Hypothesis 1b* (see also additional results in Appendix C). Looking at total impacts, involvement and autonomous innovation emerge as two crucial organizational dimensions in fostering performance. Both of them show an impact that is limited, but relevant and statistically significant. The positive impact of involvement becomes significant only when it is conjugated with improved fulfillment. *Hypotheses 2b and 4* are supported by results (see also additional results in Appendix C).

We have 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), the total impacts of autonomy on performance point out that 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. Social cooperatives tend to offer workers a high degree of task autonomy. We explain this tendency with the specificity of the activities carried out by social service cooperatives, which is compatible with the relational and non-standardized nature of the services they provide (Borzaga and Depedri, 2005; Gui and Sugden, 2005). Still, the channeling of autonomous effort away from routine tasks and more towards innovation seeking activities is most likely to be effective on organizational performance. *Hypothesis 2a* is not supported as the negative effects of task autonomy outperform the positive ones.

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 lack of coordination or, possibly, rivalry, retention of information and diverging objectives between different teams. These represent constraints to CI. 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. Taken together, the weak positive impact of workload pressure and the weak negative impact of task autonomy point at problems of weak coordination in social cooperatives.

### **Theoretical implications**

We have started this contribution by advocating a Deweyan human growth approach to the study of the organizational determinants of firm performance and workers accomplishment. We have related accomplishment to the use of CI, and associated performance with dimensions that can make a difference on the quality of life enjoyed by users, which is particularly relevant in the social service sector.

In the light of our results, the human growth perspective can refine current understanding of organizational resources, demands and performance accounting for the accomplishment of workers consistently with the interests of “others.” Through the involvement factor we have interpreted the “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, by definition, must contain elements of coordination with others. In particular, involvement entails and points at the relevance of deliberation mechanisms to support autonomous thinking, alongside the complementary principles of interconnectedness and inter-subjective understanding or reality. 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. 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. In this way, our approach emphasizes why users can be considered as one of the interested publics of organizational choices regarding the human growth of its employees.

Future research may benefit from studying particular interactions and their causes further, such as the circumstances under which task-autonomy bears a negative effect on performance. Moreover, we would envisage a more in depth study on the interaction between worker satisfaction and users (or other interested publics more generally).

### **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. Organizational models directed to improve performance have only weak effects if prioritizing workload pressure and limited job resources, unless a more comprehensive notion of Deweyan growth (as reflected in satisfaction) is taken into account by managerial practices. 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. 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 deliberation and communication.

### **Limitations of the study**

One initial limitation is the cross-section design of our study, which does not allow individual fixed effects to be included in the estimates. The large dimension of the sample, though, can mitigate the most relevant problems connected with its cross-sectional nature. Furthermore, we have been dealing with only one sector (social services), and only one organizational form (the not-for-profit social cooperative). The study is also 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. However, even if more general results concerning a wider variety of proprietary and organizational forms are pending, there are good reasons to believe that our findings can be relevant in other contexts.

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 1947 and involvement does not show a significant total impact on performance, while satisfaction is only significant at the 10% level. However, when teamwork, which carries with it 828 not applicable cases, is excluded, the number of usable cases increases to 2646, and the total effect of involvement becomes significant at the 10% level.

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. However, we are not able to establish causation, since we do not carry out fully controlled and randomized experiments, for example laboratory or natural experiments, or utilization of instrumental variables (Wright, 1934; Pearl, 2012). Furthermore, 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 clearly forced to assume that the features of organizational processes and the degree of worker satisfaction have not significantly changed over the past few years. Given this initial caveats, our model considers organizational processes as exogenous factors beyond workers' control since we assume that they are defined almost exclusively the organizational model or by managerial choices. In this sense it is correct to analyze their impact on wellbeing as intermediate outcome, and on performance as the final outcome. Also, we study satisfaction as determinant of performance since the improvement in quality and innovation at the organizational level is evaluated by managers as final outcome that is beyond the we hypothesize that better fulfillment impacts on performance as 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.

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## 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, Fairchild, and Fritz (2007):

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

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

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

Where  $i$  represents the number of observations ( $i = 1, \dots, 4134$ ),  $g$  the number of clusters, that is organizations ( $g = 1, \dots, 320$ ). The error components  $\varepsilon_{1ig}$ ,  $\varepsilon_{2ig}$ , and  $\varepsilon_{3ig}$  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:  $\varepsilon_{ig} = v_g + \zeta_{ig}$ , 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, Nichols, & Schaffer, 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.  $\mathbf{X}$  is a vector of organizational controls ( $m = 6, \dots, 11$ ) 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  $\mathbf{Z}$  is the vector including individual controls ( $n = 6, \dots, 12$ ). 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  $\varepsilon_1$ ,  $\varepsilon_2$ , and  $\varepsilon_3$  are residuals.

## Appendix C

### Additional Results

**Autonomy, effort and performance.** Further results obtained from the same data (which lie outside the scope of this contribution) show a strong positive correlation between task autonomy and the degree of workers' self-reported effort. This result too, if confirmed, would indicate that autonomy is not detrimental to productivity per se, but that it can engender lack of coordination and circulation of information.

**Material and immaterial satisfaction.** The focus on aspects of immaterial satisfaction allows also a comparison with material aspects of fulfillment. To this hand, we defined the latent dimension of material satisfaction as composed by five items: flexibility in working hours; job stability; the features of the physical working environment; and social protection guaranteed by the labor contract (Cronbach's Alpha equal to 0.79). Material satisfaction does not act as significant mediator, since both its direct and total effects are positive but not statistically significant. The same is true in the case of satisfaction with the job as a whole, measured by means of one unique 1 to 7 Likert item (Table 1). Hence, as it appears, immaterial satisfaction is the component of worker wellbeing that most strongly influences firm performance.

**Satisfaction with involvement.** Given the emerging importance of involvement processes, in additional data elaboration we evaluated the marginal impact of the wellbeing generated by involvement in decision making by including this fifth item in the latent dimension of immaterial satisfaction (Cronbach's Alpha equal to 0.80). When we do this, all of the effects of non-material satisfaction (non-mediated, direct and total) on performance are not significant any more. Quite clearly, in terms of performance, involvement appears relevant instrumentally, when it supports workers' personal growth, critical thinking and creativity, but not when it directly increases wellbeing and it is perceived as independent of personal growth.

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.	Ave rage	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
	5 items	Support by the management	3861	828	5.72	1.48
What are the most relevant aspects in your team?	(1 to 5 scale)	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	Involvement in the mission	3835	0	3.13	1.24
	(1 to 5 scale)	Involvement in decision making	3846	0	2.88	1.26
<i>Workload pressure:</i>	Factor	Sustained involvement	3978	0	5.98	1.26
Your job usually requires...	5 items	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)	Avera ge	Standard Deviation
<i>Performance:</i>	4 Likert items	Service quality	254	4.31	0.75
<i>Improvement over</i>		Service innovation	253	4.23	0.73
<i>a 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*)

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. Techlogic. 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. MultiTask	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. PSolv	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*)

Table 4

*Reliability and Goodness of Fit of Individual Latent Dimensions*

FIT STATISTICS	Reliability:	chi2			90% CI,	90% CI,					CD
	Cronbach's	model vs			lower	upper	P-				Coeff.
	alpha	saturated	p > chi2	RMSEA	bound	bound	close	BIC	TLI	SRMR	Determin
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

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

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
Parttime	-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.

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
DIRECT EFFECTS						
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
SAT ISFACTION						
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
INDIRECT EFFECTS						
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
INNOVATION						
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
SATISFACTION						
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).

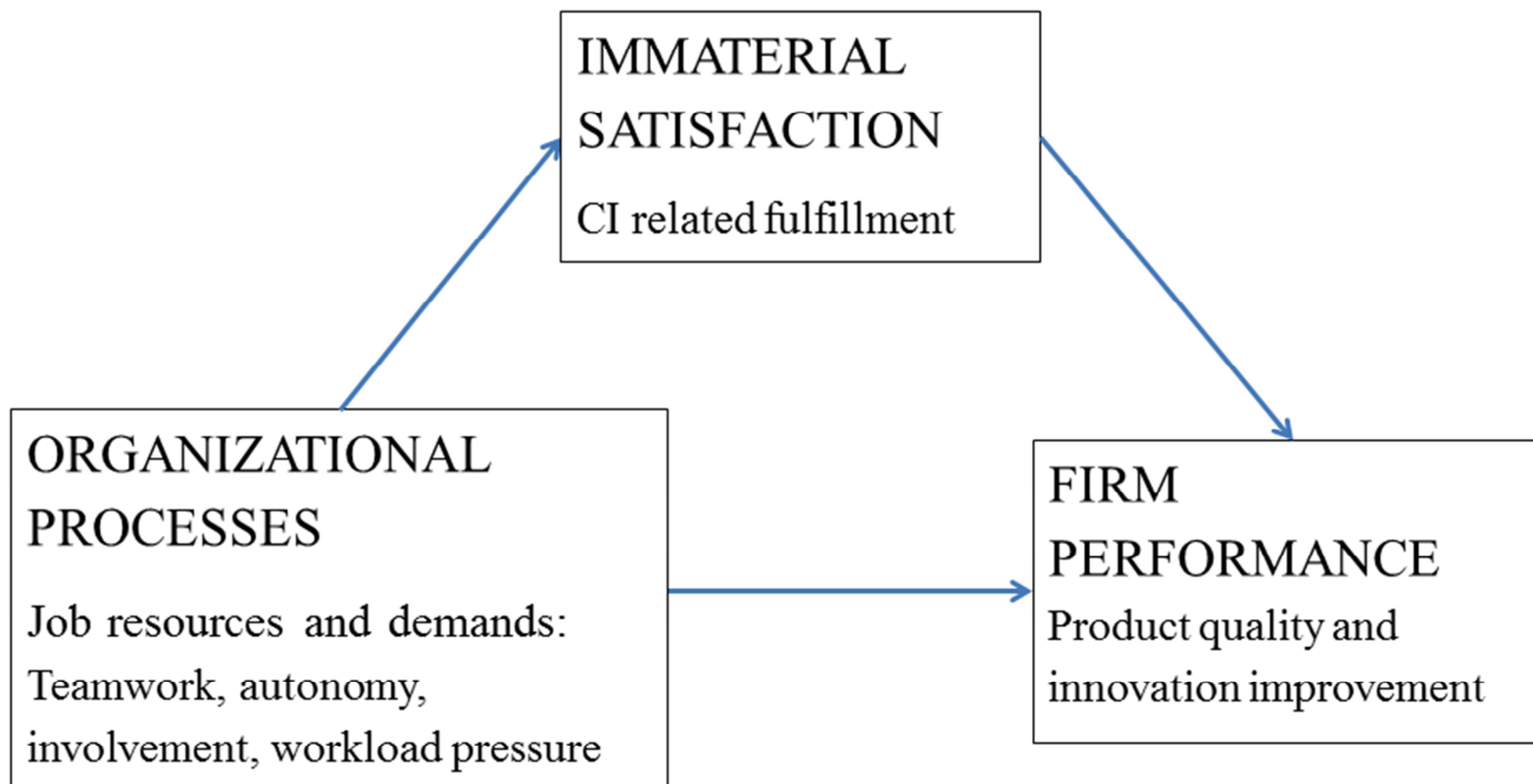
Organization level cluster-robust standard errors.

Table 8

*Goodness of Fit of the Complete Models*

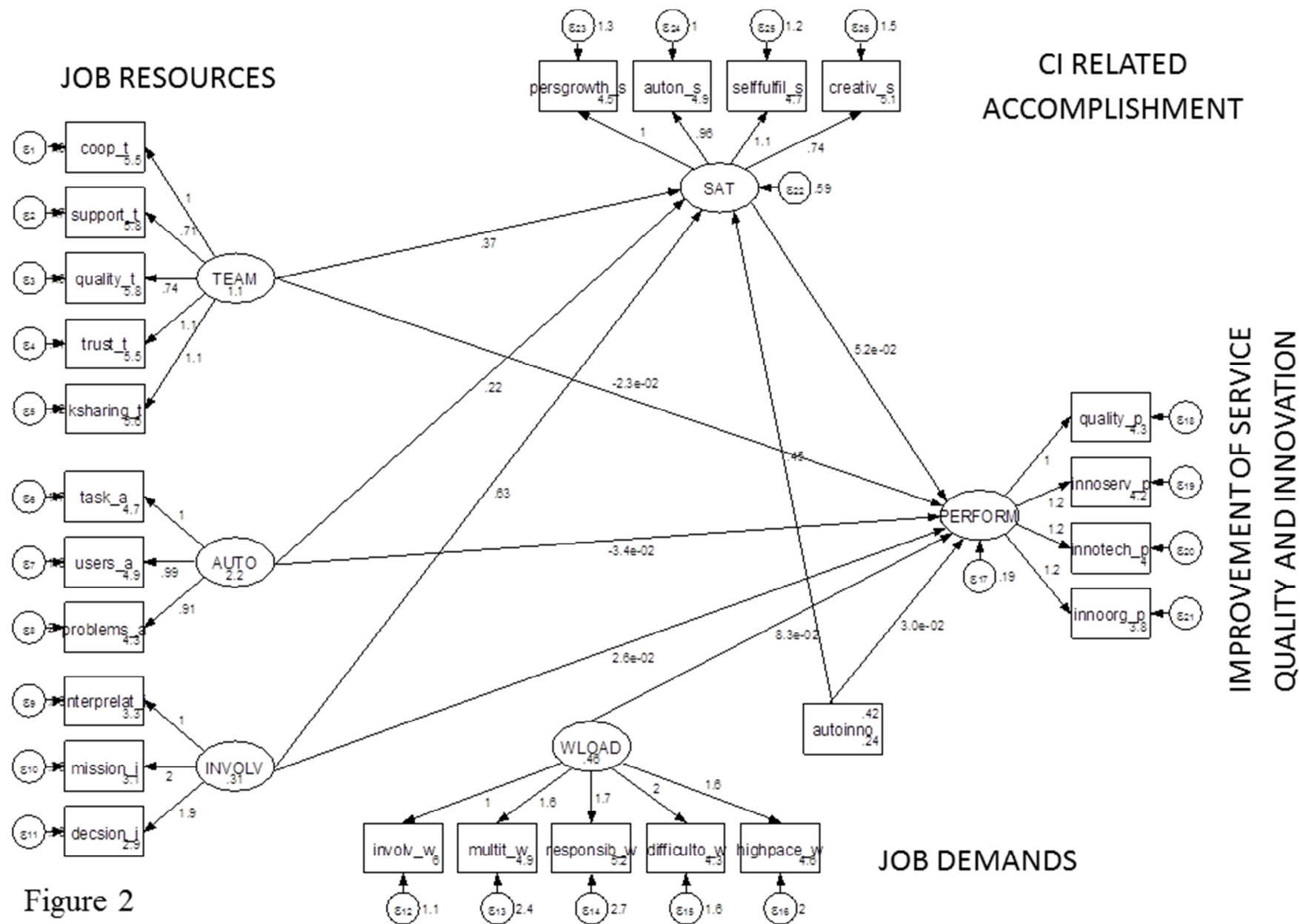
FIT STATISTICS	chi2 model vs saturated	RMSEA	90% CI, lower bound	90% CI, upper bound	P- close	BIC	TLI	SRMR	CD Coeff. Determin
MODEL 1 (Org. innovation included)	4476.2	0.042	0.00	.	.	429065.1	0.88	♦	0.99
MODEL 2 (Org. innovation excluded)	3278.4	0.040	0.00	.	.	395803.9	0.87	♦	0.99

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



*Figure 1.*

Job Resources, Job Demands, Performance and the Mediating Role of CI Related Fulfillment



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