Corporate social responsibility is just a twist in a Möbius Strip: An empirical test on Italian cooperatives.

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Abstract

In order to devise a new cost-benefit function, in this work we apply in a Corporate Social Responsibility (CSR) context the electro-magnetism geometrical model of the Möbius Strip, which analyzes how the moves of electrons produce energy. Similarly to the case of electrons tunneling in the strip, we highlight three positive crossed effects on firm performance originating from: i) cooperation within the same group of stakeholders; ii) cooperation between different groups of stakeholders; iii) stakeholders' loyalty towards the company. By applying this new cost-benefit function to a firms' decision making processes we evidence that investing in CSR activities is always convenient depending on the number of stakeholder groups, on stakeholders' sensitivity to CSR investments and on the decay rate to alienation. We test these findings through Structural Equation Modelling by exploiting a unique dataset including data on 4135 workers in a matched sample of 320 Italian social enterprises. Results show that CSR is, in all specifications of the model, the strongest determinant of firm performance in terms of improvement in service quality and worker achieved professional and personal growth. Direct effects of CSR on performance are added to indirect effects mediated by cooperation and reduced worker alienation in terms of higher job satisfaction.

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1. INTRODUCTION

The analysis of the interdependence of social and economic relationships and the social role of entrepreneurial organizations requires dedicated theories and suitable tools, the more so in the contemporary context of heightened competition in the globalized economy. Interdependence implies multiple positive and negative feedback loops making system interdependent and interacting dissipatively with their environment.

In Economics this interdependence among systems and among agents is just the core of the models of Corporate Social Responsibility (CSR hereafter), which consider the global integration between firms and their stakeholders, including workers, customers and the whole socio-economic and natural environment (Becchetti et al. 2014). CSR implies the move from the maximization of shareholder value to the satisfaction of a more complex objective function in which varied interests of all the stakeholders are accounted for. In turn, this creates also benefits for the business. For instance, Becchetti et al. (2014) show that, since more and more profit maximizing firms are adopting CSR practices, there must be pecuniary benefits benefiting them. The authors also document that CSR has the potential to generate several value increasing effects by attracting better employees, and enhancing their intrinsic motivation and loyalty, by reducing turnover rates, by improving production efficiency and by reducing operating costs. Furthermore, CSR boosts sale revenues and attracts more ethical consumers, so that the firm can benefit from increases in its demand share.

All the above mentioned advantages can be seen as a sort of ethical capital accumulated trough CSR practices, which also requires the payment of additional costs. Becchetti et al. (2014) underline, by using a dynamic model, the conditions required to obtain that such benefits overrun the costs. These advantages can also be considered as the result of the synergy which relates each subsystem's and each agent's performance. Thanks to this

synergy net benefits flow from the relationships across stakeholder groups, by virtue of their connections with the firm and of intra-organizational cooperation generating net transactional benefits across the business system.

Several works deal with the benefits for stakeholders and in particular for workers that arise by investing in CSR. Within this field of enquiry many analyses use the standard taxonomy of CSR criteria provided by Kinder, Lydenberg and Domini Research and Analytics, Inc. (KLD). They include the following eight wide-ranging categories into the Domini 400 index: i) community; ii) corporate governance; iii) diversity; iv) employee relations; v) environment; vi) human rights; vii) product quality; and viii) controversial business issues. Every category has its strengths and weaknesses identified and analyzed within the index, as well as the suggestion of corporate activities compliant with each specific category. For instance, by using the KLD index, Becchetti et al. (2016) show that CSR firms which take into account workers' well-being are less exposed to business risks and profit volatility. Other authors analyze the effects of increased productivity of individual workers (see Rob and al. 2000). The authors show how specific investments in Corporate Social Responsibility can be seen as the optimal incentive system that prompts employees to allocate greater effort in cooperative tasks because they derive utility from cooperation. In the meta-analysis devised by Harter et al. (2003) positive workplace perceptions and feelings are associated with higher business-unit customer loyalty, higher profitability, higher productivity and lower rates of turnover. In Gond et al. (2010) it is explained how employees' perceptions of CSR trigger attitudes and behaviors in the workplace which affect organizational, social and environmental performance. Myers et al. (2010) add an analysis specifically directed to the benefits of cooperation between coworkers and discuss the effects of firm's values and workplace interaction on coworkers. Finally, using data collected from employees in three private airline companies in Iran, Rast et al. (2012) also show that an important factor impacting on job satisfaction and productivity is the relationship with co-workers. In connection with the literature on social capital, Degli Antoni et al. (2011) analyze the effects of CSR pointing out how the adoption of CSR good practices fosters the creation of workers' social capital understood as cooperative networking, generalized trust, and relational skills. Relatedly, Sabatini et al. (2014) work on the cognitive dimension of social capital, within the literature initiated by Putnam (1993),

Fukuyama (1995) and Knack and Keefer (1997), and find out that people employed in organizations characterized by inclusive governance and community oriented objectives, such as cooperative enterprises, are more prone to strengthen overtime the degree of their generalized trust.

Following these premises, our CSR standpoint posits that firms and stakeholders can be depicted not as two distinct and unconnected systems, but instead as cross-systems where transfers occur in such a way that businesses co-evolve with the stakeholders' interests, which become part of the business. In this crossed-system the output of each part is transferred across the other parts to become the others' input, so that these subsystems are strongly overloaded and linked inextricably together.

According to our viewpoint, we need models taking into account this complexity and nonlinearity in the connections. We submit that the best metaphor, suggested by and analyzed in the physical sciences, to approximate and represent this new conceptualization of CSR and more generally of fundamental linkages among stakeholders in economic systems and between agents, is the Möbius strip.

This is a topological enigma independently documented in 1858 by two mathematicians A. F. Möbius and J.B. Listing. It is a bend of paper that is given a 180 degree twist prior to having its two ends connected. The first use of the Möbius strip as a metaphor in business relationships is found, to the best of our knowledge, in Litz (2008), who discusses an alternative approach to business family and family business relationships.

In this contribution we aim at extending this approach to CSR analysis by extensively relying on recent discoveries in electromagnetism. We assimilate firms and their stakeholders' contributions to the action of electrons travelling a Möbius strip which, unlike a regular bend, return to a mirror reality in each count. In particular, we strictly follow the model of Yacubo et al. (2013) who show that the electrons travelling on a Möbius strip produce energy of higher intensity or, equivalently, that there is lower energy dissipation thanks to decreased resistance by virtue of the twist in the bend. We analyze how the contributions of economic agents in a CSR context, thanks to the effects on ethical capital, produce higher benefits and lower dissipation in terms of lower costs thanks to augmented cooperation.

The paper is divided into four sections (including introduction and conclusions). In the second section we describe the building of the geometrical model for the electrons travelling on a Möbius strip. In the third section we investigate how to apply this model to the behavior of firms and economic agents in a CSR context. We define a new cost function that shows the convenience to invest in socially responsible activities thanks to three positive crossed effects on efficiency: (i) cooperation within the same group of stakeholders; (ii) cooperation among similar stakeholders in different sectors of the firm; (iii) stakeholders' loyalty towards the company. We provide an example of a firm's decisional problem in which the firm decides whether to invest in social responsibility activities. Our analytical results show that this is always the optimal choice depending on the number of stakeholder groups, on stakeholders' sensitivity to these investments and on the decay rate to alienation. In the third section we empirically test our findings on a sample of 320 Italian Cooperatives working in the social service sector. Data are derived from a survey conducted nationally by a pool of 5 university departments on a sample of 4135 workers in social cooperatives (ICSI 2007).

Our empirical results show that CSR is, in all specifications of the model, the strongest determinant of firm performance in terms of improvement in service quality and achieved professional and personal growth. These results hold true after controlling for several socio-economic features of the workforce, and for firm size and macro-regional location within Italy. Positive and strong direct effects of CSR on performance are added to indirect effects mediated by organizational patterns informed by cooperation and reduced worker alienation in terms of higher on-the-job satisfaction.

2. THEORETICAL MODEL

2.1. The Model of the "Möbius strip-like-CSR Economy"

Solferino and Solferino (2016) draw extensively from the analogies with the behavior of fermions (a typology of electrons) moving on a Möbius strip to show what kind of interactions among stakeholders are at work and affect improvements in a company's performance. In this section we shortly describe the main features of the Model.

The starting point of this model relies on the consideration that the twist in a Möbius strip generates two important effects on the electrons' trajectories and on the energy produced.

First, unlike a cylinder, in a Möbius strip an electron moves in the longitudinal direction along the ring, encircling the system twice before returning to its initial position. This movement creates flux periodicities generating more persistent electric current. Second, the electrons move also in the transverse direction, so that they can tunnel to their neighbors in more directions. Finally, thanks to the twist the electrons in the last wire tunnel in the same wire on the corresponding replicated new element. Similarly, in a CSR company the SR investments, just like the twist, should make stakeholders' relationships closer and more persistent, so that one stakeholders' interest (the fermions) becomes the others' interest too. As foreshadowed also by scholars studying social enterprises (Bacchiega and Borzaga 2001; Borzaga and Tortia 2006; Borzaga and Sacchetti 2015) thanks to appropriate incentive-mixes, different stakeholders in different sectors are put in contact and become straightly interdependent, just as different neighboring sides of the Möbius strip on which fermions are tunneling. Finally, CSR activities should strengthen stakeholders' adherence to the firm's mission, so that each stakeholder group can be seen as a replicated one working both for his specific sector and for the firm's mission.

Figure 1 below shows the moves of the electrons in the Möbius strip before and after a twist. Figure 2 highlights the analogies with the N stakeholders in a Company with M sectors, after suitable investments in CSR have been carried out:

Figure 1. Electrons moving in a lattice
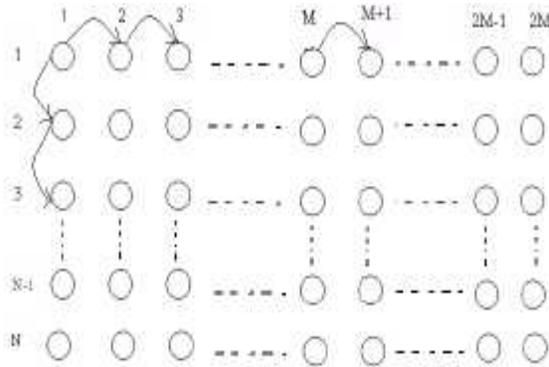
Figure 2. Changes after the twist for electrons moving on a Mobius strip
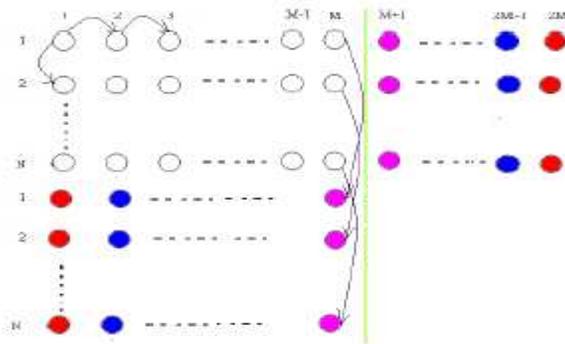
Lattice now has became 2NXM. The area behind the green line shifted in the bottom on the left. The electrons in the column M, which tunneled in the M+1 column, now tunnel in the same column M on the corresponding replicated new element.

It is possible to apply this construct to a SR company with $n = 1, ..., N$ stakeholders or clusters of stakeholders and $m = 1, ..., 2M$ activities, where $m = 1, ..., M$ represent the traditional sectors of production of intermediate goods, necessary to produce the final good M; while $m = M + 1, ...2M$ are the specific activities devoted to the CSR. Denoting by $0 \leq a_{nm} < 1$ the contribution of stakeholder n in the sector m, like in a Möbius strip, also in a socially responsible firm the effects of a twist may be considered as the returns due to the CSR activities on its stakeholders and on firm production (see figure3)

Figure 3. Effects of a twist in a socially responsible firm

According to the above described analogies, analytically it is possible to devise a new cost-benefit model for CSR companies by using the Hubbard model for fermions, as in Yacubo et al. (2013), where energy dissipation can be assimilated to production costs, while the crossed interaction-effects among fermions can approach the benefits associated to the joint contributions of N stakeholders in M sectors (for more details on how to derive this function see Solferino and Solferino 2016).

By applying this model to a profit maximization problem of a company with only one class of stakeholders, i.e. N workers, for given values of prices p and wages w, we get:

$$H_{CSR} = -\sum_{n=1}^{ZN}\sum_{m=1}^{M} ca + \sum_{n=1}^{ZN}\sum_{m=1}^{M}[t_1(1-\delta)a^2] + t_2\sum_{n=1}^{ZN}\sum_{m=1}^{M-1} a^2 + \frac{t_2}{2}\sum_{n=1}^{ZN} a^2 \quad (1)$$

with $a \in R$ and $0 \leq a < 1$ for all $n = 1, ..., N$ and $m = 1, ..., M$

Subject to the constraint of positive profits

$$NMa[(p-w)-c] \geq 0 \quad (2)$$

where k is a positive constant and $\beta \in R$.

The function is made up of four parts: (i) in the first (negative), ca represents the sum of the costs c undergone by a company to finance socially responsible activities devoted to each n in sector m; (ii) in the second, t_1, named the *neighborhood efficiency term*, measures the gains associated to the crossed contributions of n subjects (workers in our case) in sector m with the nearest $n+1$ subject in the same sector; (iii) the third, called *sector cooperation efficiency term*, measures the gains associated to the crossed contributions of n subjects in sector m with the other subject types n in the nearest sector $m+1$; (iv) the last part, called *loyalty efficiency term,* measures the gains associated to the increased productivity of each n which contributes to the production of the final good M. Moreover we assume that $0 \leq \delta < 1$ is the decay rate due to the possible effect of alienation (caused for instance by satiety, insufficient spare time, etc.). Finally t_1 and t_2 measure workers' sensitivities and are assumed to be equal to each other. They are related to the investment in CSR.

Solving this maximization problem, we obtain:

$$c^{1-\beta} = \frac{2M}{[2M(1-\delta)-2+a^2]ka^{1-\beta}}$$

For $\beta > 1$, which increases for high values of δ and decreases for high values of β and M.

These effects of β, δ and M on the optimal value of c are reversed when the workers show low sensitivity to SR activities and $\beta < 1$, while for $\beta = 1$ it is always convenient to invest in CSR and the company chooses the optimal value of c satisfying (2), as it can easily recover CSR costs from the proportional increase in t for $k \geq 1$.

These findings reveal that investments in CSR affect the firm's final performance, not only directly through the three above mentioned crossed-effects, but also trough the intermediate action of the following factors: (a) workers' sensitivity, which makes convenient for the firm to develop CSR practices and to pay for the related expenses, since this process increases workers' productivity; (b) the alienation effect implies higher workers' aversion to job tasks and to the company or a greater preference for other activities, leisure or family; (c) the effect of the number of sectors is controversial. First, if there are many sectors the company can invest a limited amount for each of them, but on the other hand social capital and workers' relations are of better quality in smaller sized firms, so that fewer additional responsible investments are required in smaller than in larger sized firms. As a result, what effect prevails in terms of efficiency depends on β.

2.2. Hypotheses

The theoretical model hypothesizes that CSR impacts on organizational performance first. Although several empirical papers assume that CSR improves performance (Waddock and Graves 1997; Drucker 1990; Kinnell and MacDougall 1997; Blois 1999; Sargeant 1999), other papers have empirically confirmed that socially friendly activities are not able to improve organizational performance (McWilliams and Siegel 2001; Abiodun 2012). Taking into account

the conflicting results reached by previous studies, we propose the following first working hypothesis:

H$_1$: There is a positive and significant effect of CSR investments on organizational performance.

If this hypothesis is not rejected, we should analyze the role of the improvement in cooperative organizational patterns as a consequence of CSR practices. In this sense, the improvements in the relational context (indexed in the empirical part of the paper by time spent with colleagues, superiors and users) and the development of an incentive mix based on both monetary and non-monetary rewards can improve the level of cooperation (for example, a high degree of involvement in decision making and in the mission of the organization). Through the intermediate effect on cooperation, CSR influences performance, which is represented empirically by improved service quality and by achieved organizational and professional growth. CSR in terms of responsibility, reputation and trust, is also hypothesized to impact on worker satisfaction concerning professional growth and personal fulfillment, and on worker extrinsic motivations concerning contractual conditions such as work hours, career prospects and job stability. In socially oriented organizational forms, organizational patterns informed by CSR criteria can interact in a complex way with workers drives, fulfillment, and behavior (Borzaga et al. 2014). The sign of these relations can be hypothesized to be positive, since the better social standing of the organization is expected to guarantee the renewal of motivations and to improve fulfillment. The strength of the relation, however, needs to be enquired further. In turn, we hypothesize that motivations and fulfillment influence organizational patterns based on cooperation. Workers that perceive organizational patterns informed by socially responsible objectives and procedures, and that are intrinsically and socially motivated, can react by looking for a higher degree of involvement, and increase their effort in terms of improved relations, pursuit of extra-role tasks and time spent with colleagues, superiors and users. The sign of these relations, though, needs further enquiry and explanation, calling for our second working hypothesis:

H$_2$: Cooperative organizational patterns exert a positive mediating effect between CRS practices and organizational performance.

We finally analyze the differential impact of a series of moderator variables: Organizational size and socio-demographic features of the workforce.

H$_3$: Organizational size and socio-demographic features of the workforce have a moderator effect on the relationship between CSR practices and organizational performance.

These hypotheses enable us to test both the direct effect flowing from CSR to cooperation patterns and performance, and the indirect effects mediated by workers' motivations and fulfillment. Figure 4 substantially mimics the results and prepares the ground for the empirical test of the theoretical model. It shows how final firm performance is positively affected by the investments in CSR, not only directly but also through the effects of improved cooperation. These effects in turn depend on the mediating role of alienation and sensitivity, and can be affected by firm size and by the socio-demographic features of the workforce, which determine the optimal investment in CSR.

Figure 4. SEM model: CSR as determinant of organizational performance
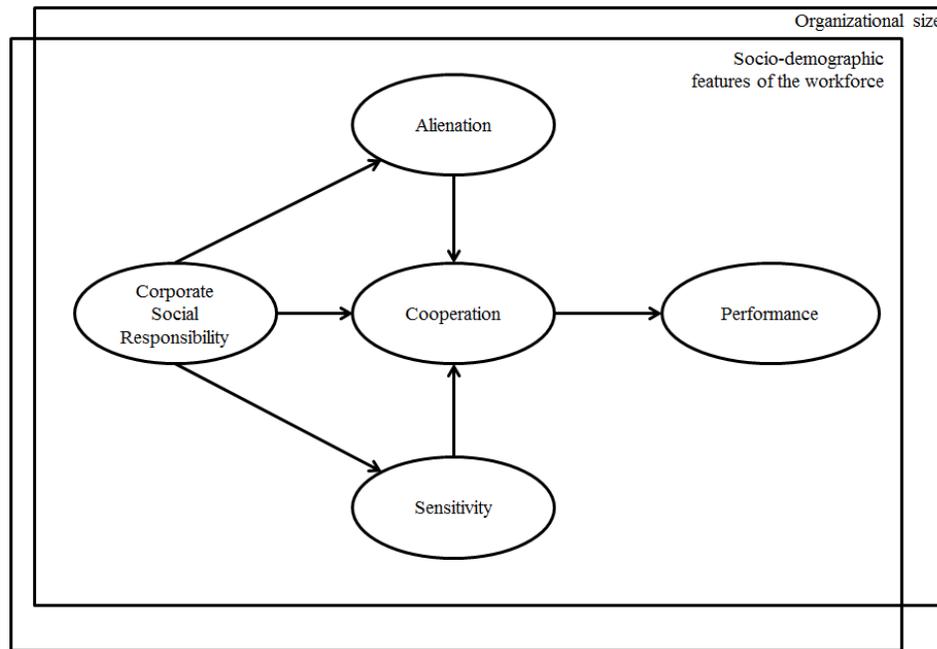
3. EMPIRICAL ANALYSIS

3.1. The Survey

We can't recall the existence of any database including all the relevant behavioral dimensions of several stakeholder groups in several sectors, as identified in the theoretical model. However, when attention is restricted to workers as stakeholders of the organization in Italian social enterprises, represented by a national sample cooperative enterprises with a social aim (Type A and Type B social cooperatives in the Italian legislation, cfr. footnote 1), it is possible to exploit the data collected by the ICSI 2007 survey (Survey on Italian Social Cooperatives). The survey is implemented by means of three different matched questionnaires compiled by paid workers, managers and representatives of the organization addressing 4134 paid workers, 320 organizations, and managers.

The three questionnaires are based on multiple-item questions, most of which are measured by Likert items. Questionnaires were administered by trained staff that supported the respondents on site, and compiled by workers in groups or taken at home and, in both cases, handed in in anonymous envelopes, while late questionnaire were sent by post. This analysis uses mainly salaried-worker data to observe the worker's perspective on organizational processes.[1] From an overview of individual profiles, we know that we are looking at workers in their 30s, mainly females (74%), holding a permanent job position (80%). Education is college or university in 69% of cases. On average, the hourly wage was, in 2005, about 6.6 Euro, and tenure nearly 6 years. The average firm size is 33 employees, 78% of the involved organizations are Type A and 22% Type B cooperatives. Sixty-two per cent are located in the North, 22% in the Centre, and 16% in the South of the country.

We use several questions included in the worker questionnaire, as they concern labor relations, involvement patterns, on the job satisfaction, and worker motivations. Questions related to corporate social responsibility and firm performance are extracted, instead, from the organization questionnaire.

3.2. Main variables in the empirical model

The empirical model strictly corresponds to the theoretical one, in which the performance variable represents the final outcome and is affected by the three typologies of cooperative interaction among the firm's stakeholders. The hypotheses of the theoretical model aim at testing the effects of the three types of cooperation patterns on performance, as mediated by sensitivity (as represented by worker motivations) and alienation (as represented by different dimensions of job satisfaction). Socio-demographic features of the workforce and organizational size are added as moderators.

Performance

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[1] The initial sample of 411 organizations was extracted from the 2003 census on social cooperatives (ISTAT, 2003), which counted 6,168 active units (with at least one employee) at the national level. Social enterprises in Italy take, as a norm, the form of socially oriented co-operatives (so-called *cooperative sociali),* which are of two types in the Italian legislation: Type A delivers social services, while Type B is regulated by law to reintegrate weak individuals (the disabled, ex-drug addicted, ex-convicted, mentally ill, and long term unemployed) into the labor market. A nationwide representative sample was stratified 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 109 provinces); c) size (number of employees). Eighty-five per cent of workers answered on average 90% of the 87 questions (56 single choice questions and 31 multiple choice questions).

The two indicators of performance are designed as PERF1 and PERF2 and are drawn from questions in the organization questionnaire. PERF1 is related to improvements in service quality over the past two to three years (ordered from 1 to 4 -"Worse" to "Much better", D40 in the questionnaire), while PERF2 is related to the current achieved condition of the organization in terms of professional growth, relational context and motivations of workers and managers (Likert scale 1 to 10, D66 in the questionnaire).

Corporate Social Responsibility

Likewise, CSR measures are drawn from the organization questionnaire and relate to the degree of social responsibility of the organization, as represented by perceived social responsibility towards its main stakeholders and towards public authorities and the community (ordered from 1 to 3 - "Not at all" to "Very much", D43), by the good reputation of the organization with the different stakeholder groups (dichotomous-"Low" and "High", D48), by trust relations between the cooperative and its stakeholders (ordered from 1 to 3 -"Not at all important" to "Very important", D50), and by organizational climate (ordered from 1 to 7, from "conflictual climate", to "community climate", D49).

Cooperation, alienation and sensitivity of workers

Variables concerning cooperation (indexed by time devoted to relations and worker involvement, DC), alienation (indexed by satisfaction, SAT) and sensitivity to the working of the organization (indexed by motivations, MOT) are measured by workers' self-reported measures, perceptions and evaluations. Cooperation is captured by three different measures: (i) cooperation among workers by the amount of time devoted to relations with other workers (e.g. with colleagues, superiors, the work group, and with volunteers; 1 to 5 Likert items, from "Never" to "Always", D29); (ii) cooperation with the cooperative as represented by the development of interpersonal relations, and involvement in the mission and decision making processes of the cooperative (1 to 5 Likert items, from "Never" to "Always", D38); (iii) loyalty to the organization, as represented by the intention to stay in the same organization in the future (ordered from 1 to 4, from "Leave as soon as possible" to "Stay as long as possible", D49). The variables representing alienation relate to satisfaction with personal and professional growth, and autonomy (1 to 7 Likert items,

D25). Finally, sensitivity to organizational dimensions is reflected by worker motivations, as related to extrinsic and contractual aspects, such as flexibility of working hours and job stability (1 to 12 Likert items).

Socio-demographic features of the workforce and size of the organization

We have introduced a final set of variables to moderate the postulated relationships. At organizational level, we have studied the role of organizational size. The dimension of the workforce (including both members and employees) has been the classification criterion, distinguishing between small (lower than 15 workers), medium (between 16 and 50 workers) and large cooperatives (higher than 50 workers). The socio-demographic features of the workforce consider gender and education. Education levels correspond to five different degrees: elementary, intermediate, professional, high-school and university.

3.3. Methodology

Given the objective of this study, we start by carrying out a descriptive analysis of the observed variables in terms of their position measurements and use exploratory analysis techniques to evaluate their correlation matrix (Tables A1 in the Appendix). We then use confirmatory factor analysis to examine the dimensional structure of the theoretical constructs involved in our hypothesis (Tables A2 and A3 in the Appendix). We subsequently analyze the respective measurement models in terms of reliability and validity (Bagozzi 1980; MacDonald 1981). After we examine the measurement model, we estimate the factor scores which are used in the structural model.

The structural model analyses the theoretical one and tests the working hypotheses. CSR measures affect (incentivize) Cooperation (DC), which acts as intermediate organizational dimension through which the effect of CSR impacts on final performance. At the same time, the variables representing worker motivations (MOT) and worker satisfaction (SAT) are linked to CSR as they mimic the mediating role of worker sensitivity and alienation respectively on the CSR measures adopted by the organization. In order to evaluate the global fit of these models, we present different goodness of fit statistics and indices (Bollen 1998). This approach enables us to test the relationship between the performance variables and the different typologies of

cooperative interaction among the firm's stakeholders through the analysis of direct, indirect and total effects.

Finally, the moderator effect of the socio-demographic features of the workforce and organizational size is conducted through a multi-group analysis (Little 2000; Bentler 2006). In this approach, we estimate the general model for the whole sample, assessing the individual significance of the direct, indirect, and total effects. Once the general model is tested, and to assess whether socio-demographic variables and organizational size exert a moderating effect, we repeat the same process in each group. The moderating effect is assessed by analyzing the changes on the individual significance of each parameter.

This statistical approach enables us to obtain, test and estimate measurement and/or structural models based on robust statistics with multivariate non-normality and non-independence of observations (Muthén & Muthén 1998-2013). The general estimation method used is MLR (maximum likelihood robust to non-normality and non-independence of observations) with the option complex due to the clustered structure of data. This approach is preferred to the two levels model option, since it takes into account stratification, non-independence of observations due to cluster sampling, and/or unequal probability of selection (Muthén & Muthén 1998-2013, p. 251). We use the MPLUS 7.4 software (Muthén & Muthén 1998-2013).

3.4. Results

Our structural equations model shows reasonable fit although it is slightly weak in the measurement model because of sample size and of the number of variables (Appendix A). At any rate, fit indexes are above 0.90 and the RMSEA is lower than 0.08. The WRMR is close to 1 in both models. These values allow us to assess the economic relevance of the obtained results.

Corporate social responsibility

Table 1 shows the results of the structural model. CRS measures show a strong positive impact on performance. Direct effects are positive and highly statistically significant. (PERF1-on-CSR:0.493; PERF2-on-CSR:0.717; p-value<0.01). This result shows that social responsibility is an element able to improve service quality, and organizational and personal achievements. When

the indirect effects of CSR are added to the direct ones, the total effects are still stronger (CSR→PERF1:0.502; CSR→PERF2:0.726; p-value<0.01) confirming the strong positive relation between socially responsible behaviors and organizational performance. As a consequence, it is not possible to reject hypothesis H_1, since a positive and significant effect of CRS on organizational performance is detected.

Table 1. Results of the structural equation model

	Estimate*	SE	p- value	R^2
Direct Effects				
SAT on				
CSR	0.055	0.034	0.108	0.003
MOT on				
CSR	0.010	0.024	0.663	0.000
DC on				
SAT	0.913	0.004	0.000	0.838
MOT	-0.033	0.008	0.000	
CSR	0.026	0.011	0.020	
PERF1 on				
DC	0.092	0.057	0.104	0.254
SAT	-0.059	0.055	0.282	
MOT	0.013	0.027	0.623	
CSR	0.493	0.045	0.000	
PERF2 on				
DC	0.207	0.046	0.000	0.538
SAT	-0.128	0.041	0.002	
MOT	0.021	0.021	0.302	
CSR	0.717	0.030	0.000	
Indirect Effects				
CSR→PERF1	0.004	0.003	0.127	
CSR→PERF2	0.009	0.004	0.039	
Total Effects				
CSR→PERF1	0.502	0.045	0.000	
CSR→PERF2	0.726	0.029	0.000	
χ^2(5): 0.137; RMSEA: 0.000; SRMR: 0.002; CFI: 0.999				

* Standardized coefficients are reported
PERF1 with PERF2: 0.271

Cooperation, alienation and sensitivity of workers

Concerning the effects of alienation, measured by the level of worker satisfaction (SAT), and the effect of sensitivity, measured by worker motivations (MOT), the former impacts positively (DC-on-SAT:0.913; p-value<0.01), while the latter negatively (DC-on-MOT:-0.033; p-value<0.01) on organizational patterns informed by cooperation (DC), represented by time spent in relations with colleagues, users and superiors, worker involvement in decision making and in the mission of the organization, and stated loyalty towards the organization. These results show positive and reinforcing feedbacks between individual well-being, and organizational patterns that stabilize work relations and strengthen involvement. Increased satisfaction (SAT), which corresponds to a lower degree of alienation, can push workers to spend more time with colleagues and superiors, and to search for higher degrees of involvement. As for sensitivity, workers who are sensitive the more extrinsic elements in the contractual relation (job stability, career and work hours' flexibility) would tend to pay less attention to organizational patterns informed by cooperation. This result is coherent with the idea, which is present in related literature, that intrinsic and social motivations are positively associated with worker wellbeing and involvement organizational patterns, while extrinsic motivations are *negatively* associated with the same elements (Borzaga and Tortia, 2006). When the positive, though weakly significant, relation between CSR and satisfaction (SAT-ON-CSR:0.055; p-value, ≈0.10) and the strong positive relation between cooperation and the second index of performance - achieved results (PERF2) - are considered together (PERF2-on-DC:0.207; p-value<0.01), a complete and positive path running all the way from CSR to satisfaction, cooperation and performance is reconstructed (CSR→PERF2:0.009; p-value<0.05). As we shall see, this positive relation between satisfaction and cooperative organizational patterns more than compensates the negative direct relation between satisfaction and performance.

The analysis of the direct relation between motivations and fulfilment on the one hand, and performance on the other appears partially counter-intuitive. While motivations do not show strong direct impact on performance (PERF1-on-MOT:0.013; PERF1-on-MOT:0.021; p-value>0.10), worker fulfillment shows stronger, but negative (PERF1-on-SAT:-0.059;p-value>0.10; PERF2-on-SAT:-0.128; p-value<0.01), relation to performance. These results can be

compared to several other results in the literature which, as a norm, rarely found a positive and/or strong relation between, on the one hand, job satisfaction and, on the other hand, job or organizational performance (Bagozzi, 1980; for a review Christen et al., 2006). Our results, which are statistically significant only in the case of the second index of performance (PERF2-achieved targets), may mean that satisfied workers do not feel the need to reach better results in terms of better relations, professional growth and motivation/participation. Increased satisfaction may indeed be directly connected with reduced effort, hence with a lower degree of achievement (Clark and Oswald, 1996). Complementary, the requirement to increase effort and performance may reduce worker satisfaction, and this would be coherent with the assumptions of orthodox economics and agency theory, if satisfaction is taken as subjective self-reported measure of worker utility (Christen et al., 2006). On the other hand, indirect effects running from CSR to performance and flowing through motivations, fulfilment and cooperative organizational patterns show positive impact on performance, even if they are not particularly strong (only the indirect effect on the second index of performance is statistically significant). These results may highlight that, while satisfaction does not translate into better performance, the combination of intrinsic and social objectives, stronger motivations, fulfillment, and cooperative organizational patterns does. In other words, the negative effect of increased effort on satisfaction is more than compensated by the desire to pursue intrinsic and social objectives and by better involvement and relations.

Therefore, there is a mediation effect of cooperation in the relation between CSR practices and organizational performance. This result is consistent with the second hypothesis (H_2) of the theoretical model, which is not rejected.

Firm size

We include firm size as moderator variable and comment in a detailed way the related results (Table 2), since this organizational dimension has central role in the theoretical model, and it served to stratify the original sample of surveyed organizations.

Tabla 2. Results of the structural equation model. Covariate: Size

	Small				Medium				Large			
	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2
Direct Effects												
SAT on												
CSR	0.198	0.041	0.000	0.039	0.054	0.054	0.317	0.003	-0.038	0.058	0.515	0.001
MOT on												
CSR	0.058	0.043	0.172	0.003	-0.010	0.042	0.811	0.000	-0.017	0.035	0.637	0.000
DC on												
SAT	0.897	0.010	0.000	0.823	0.912	0.007	0.000	0.837	0.921	0.006	0.000	0.848
MOT	-0.027	0.018	0.132		-0.045	0.014	0.001		-0.026	0.013	0.054	
CSR	0.046	0.021	0.028		0.028	0.021	0.172		0.014	0.016	0.387	
PERF1 on												
DC	0.006	0.092	0.950	0.288	0.163	0.105	0.120	0.292	0.074	0.096	0.438	0.191
SAT	-0.001	0.085	0.993		-0.150	0.105	0.153		-0.015	0.092	0.870	
MOT	-0.017	0.055	0.752		0.060	0.041	0.142		-0.016	0.050	0.754	
CSR	0.126	0.074	0.000		0.530	0.069	0.000		0.433	0.087	0.000	
PERF2 on												
DC	0.126	0.074	0.090	0.536	0.134	0.074	0.069	0.655	0.289	0.097	0.003	0.447
SAT	-0.078	0.063	0.215		-0.077	0.070	0.276		-0.197	0.084	0.019	
MOT	0.030	0.030	0.320		0.015	0.028	0.581		0.027	0.049	0.585	
CSR	0.715	0.047	0.000		0.800	0.037	0.000		0.654	0.068	0.000	
Indirect Effects												
CSR→PERF1	0.000	0.009	0.989		0.004	0.005	0.419		-0.001	0.005	0.884	
CSR→PERF2	0.014	0.009	0.130		0.006	0.006	0.276		0.001	0.008	0.896	
Total Effects												
CSR→PERF1	0.536	0.075	0.000		0.534	0.070	0.000		0.432	0.086	0.000	
CSR→PERF2	0.729	0.047	0.000		0.806	0.036	0.000		0.655	0.067	0.000	

χ^2(3): 2.157; RMSEA: 0.000; SRMR: 0.008; CFI: 0.999:

* Standardized coefficients are reported

The difference between small and large size lies in the negative and significant effect of CSR on satisfaction, which is positive and much stronger in smaller organizations (SAT-on-CSR:0.198; p-value<0.01). In large organizations the relation between CSR and satisfaction is negative (SAT-on-CSR:-0.038; p-value<0.01), contrary to what is observed in the general sample. The negative relation between motivations and the formation of cooperative organizational patterns appears much weaker in small organizations than in the general sample (DC-on-MOT:-0.027; p-value>0.10). Also CSR impacts much more heavily and positively on the formation of organizational patterns characterized by cooperation in small (DC-on-CSR:0.046; p-value<0.05) than in medium (DC-on-CSR:0.028; p-value>0.10) and large organizations (DC-on-CSR:0.014; p-value>0.10). These results would testimony the importance of interpersonal relations and knowledge in smaller organizations, which undergo weaker processes of formalization of organizational routines.

When performance is considered, it is important to notice that cooperation exerts a strong positive effect (PERF2-on-DC>0; p-value<0.10) and satisfaction a negative effect on achieved results (PERF2) only in large organizations (PERF2-on-SAT: -0.197; p-value<0.05). In this case it appears that the governance structure in terms cooperative organizational patterns becomes more important in boosting performance as dimension increases. Large cooperatives are more structured, managed by professional managers and give workers more opportunities for professional growth. When these elements are conjugated with organizational patterns based on good relations and involvement, the positive effect on performance can become tangible. CSR always exerts strong positive effects on both indexes of performance in terms of both direct and total effects independently of size.

As related to the theoretical model, it predicts that the effect of size is controversial and that it essentially depends on worker sensitivity. In cases in which the effect of CSR is not very strong in large cooperatives, this weaker effect depends on the weak mediating role of alienation and sensitivity, which weaken the overall effect of CSR on performance. This is in line with our empirical results, since we find that the impact of CSR on satisfaction and motivations is stronger in smaller than in larger organizations, implying that the indirect (mediated) effect of CSR on

performance is stronger as well. Indeed, the total impact of CSR on performance appears relatively stronger in smaller than larger organizations.

Socio-demographic features of the workforce

We describe here only the most relevant results concerning the main socio-demographic features of the workforce, taking into account education levels and gender. These results are detailed in Tables B1 and B2, Appendix B. The results concerning education evidence some relevant pattern: CSR exerts stronger influence on satisfaction in lower educated (Table1B: SAT-ON-CSR:0.169; p-value<0.05) than in educated individuals (Table 1B: SAT-on-CSR:0.060; p-value>0.10). This result can signal frustrated expectations about organizational goals in educated workers. The positive impact of CSR on motivations is weakly confirmed only in the case of graduated workers (Table1B: MOT-on-CSR:0.059; p-value≈0.10), who may show better ability to adapt and be resilient to the organizational context. On the other hand, while the strong and positive relation between satisfaction and cooperative organizational patterns is confirmed for all education levels (Table 1B: DC-on-SAT>0; p-value<0.01), the negative relation between motivations and cooperative organizational patterns is confirmed only in the case of educated workers (Table 1B: DC-on-MOT:-0.050; p-value<0.01). This evidence can signal again frustrated expectations concerning involvement patterns and on the job relations on the side of educated workers. Finally, as concerns performance, its positive relation with cooperation is confirmed only in the case of educated workers (Table 1B: PERF1-on-DC:0.140; PERF2-on-DC:0.246; p-value<0. 10), and this may signals better effectiveness and governance rules and involvement patterns in the case of individuals with better job positions, training and educational background.

When gender is considered, it is observed that the relation of CSR with satisfaction and cooperative organizational patterns is stronger in the case of women (Table 2B: SAT-on-CSR:0.06; p-value<0.10). This result can confirm indirectly the stronger sensitivity shown by women, when socially responsible aims and intrinsic motivations are considered. Notably, no relation at all is detected between CSR and cooperative organizational patterns in the case of men (Table 2B: DC-on-CSR:-0.002; p-value>0.10). The sign of the relations between performance in terms of achieved results, on the one hand, and satisfaction (negative sign) and cooperation

(positive sign), on the other hand, is confirmed for both sexes but appears much stronger in the case of women than in the case of men.

After having observed differential impacts due to organizational size and to the socio-demographic features of the workforce, we can state that these elements can redefine the model parameters, that is they have a moderator effect on the relationship between CSR practices and organizational performance. Hypothesis H_3 cannot be refused too.

As final comments to the empirical analysis, we evidence that the main message emerging from the analysis concerns the positive relation between CSR and performance in the context of Italian social cooperatives. This relation is exerted both directly through the positive effect of responsible behavior, especially towards users and the local community, trust and reputation, on the targets reached by the organization, or indirectly through improved cooperation in terms of relational context, satisfaction, and involvement in the workplace.

These empirical arguments are perfectly coherent with the theoretical hypotheses underpinning our model, since CSR impacts positively on cooperation, and CSR jointly with cooperation positively impact on the second index of performance and, more weakly, also on the first index of performance. This confirms our working hypotheses. The positive effect of satisfaction on cooperation signals a reduced level of worker alienation, meaning that satisfied workers would contribute more to organizational patterns characterizes by improved relations and involvement.

4. CONCLUSION

Within a CSR framework of analysis all economic activities generate interlinked relationships, which can be better interpreted and analyzed by resorting to the complex system approach. By following the theoretical model by Solferino and Solferino (2016), which relies on basic analogies with the physical models of electrons travelling on a Mobius strip, it is possible to account, both theoretically and empirically, for the effects of increased cooperation among stakeholders due to their investments in CSR. In this work, by using worker data on labor relations drawn from a large sample of Italian social enterprises (social cooperatives) we

empirically test the existence and the effects of these interactions. In particular, in accordance with our theoretical model, we ask whether the final firm's performance is correlated with its stakeholders' investments in CSR through their effects on cooperation among the stakeholders and on loyalty towards the organization. Again following the theoretical model, we also enquire the mediating role of workers' sensitivity, as proxied by motivations, of their degree of alienation, as proxied negatively by higher on-the-job satisfaction, and of firm size.

We test these relations by implementing a structural equation model, which takes into account the correlation among several endogenous variables, and the way in which they affect the final outcome, namely firm performance measured by services quality and achieved professional and personal growth. Our results substantially confirm the predictions of the theoretical model, as we can't reject the hypothesis of a strong positive and significant impact of CSR on organizational performance, both directly on both service quality and accomplished results, and indirectly on achieved results (PERF2) through the mediating role of cooperation, which also includes a positive role for lower alienation in terms of higher satisfaction. The negative relation between sensitivity (motivations) and cooperation can show that workers driven by extrinsic and contractual elements of the labor relation would feel less involved and would participate less in cooperative organizational patterns. Firm size appears important as well, since CSR shows stronger correlation with satisfaction and motivations in small organizations, while large size appears to be more strongly connected with performance in terms of achieved results (PERF2), thanks also to the mediating role of governance rules and cooperative organizational patterns. Finally, even if it is always significant and strong, the direct impact of CSR on both indexes of performance appears to be slightly stronger in average size, relative to small and large size, organizations.

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Appendix A. Descriptive statistics and measurement models

Table A1. Descriptive statistics

Dimension	Abr	Item	Mean	SE	Max	Min
PERF1	A3	Service quality relative to similar organizations	3.122	0.691	5	2
	A4	Service quality relative to two years ago	3.062	0.549	5	1
	A5	Service quality relative to five years ago	3.463	0.667	5	1
PERF2	A8	Target reached: good relations among workers	7.376	1.137	10	5
	A9	Target reached: relations between workers and their superiors	7.292	1.243	10	1
	A10	Target reached: professional skills and competencies of managers	7.755	1.213	10	1
	A11	Target reached: professional skills and competencies of workers	7.668	1.106	10	3
	A13	Target reached: ability to work in team	7.343	1.452	10	3
	A15	Target reached: internal communication/relations	6.993	1.333	10	2
	A17	Target reached: motivation/participation of managers	8.093	1.271	10	1
	A18	Target reached: motivation/paticiption of workers	7.408	1.379	10	1
CSR1	A20	Cooperative responsible towards service beneficiaries	2.855	0.355	3	2
	A21	Cooperative responsible towards local community	2.432	0.554	3	1
	A22	Cooperative responsible towards workers	2.833	0.373	3	2
	A23	Cooperative responsible towards private financial supporters	1.980	0.719	3	1
	A24	Cooperative responsible towards public institutions	2.346	0.570	3	1
CSR2	A25	Reputation of the cooperative towards users	5.746	0.906	7	4
	A26	Reputation of the cooperative towards other organizations in the sector	5.688	0.932	7	1
	A27	Reputation of the cooperative towards local community	5.476	0.932	7	3
	A29	Reputation of the cooperative towards public institutions	5.639	0.888	7	2
	A31	Reputation of the cooperative towards public administration	5.449	1.048	7	1
CSR3	A35	Trust between the cooperative and public administration	5.989	1.088	7	1
	A36	Trust between the cooperative private suppliers	5.177	1.240	7	1
	A41	Trust between the cooperative in general	5.620	1.130	7	1
	A33	Organizational climate	4.370	0.973	6	1
SAT	A42	W25_1 Satisfaction with professional growth and training	4.645	1.586	7	1
	A43	W25_2 Satisfaction with on the job autonomy and independence	5.072	1.475	7	1
	A44	W25_3 Satisfaction with past and perspective career advancement	3.854	1.700	7	1
	A45	W25_4 Personal fulfilment	4.932	1.620	7	1
MOT	A49	W54_4 Flexibility of work hours	8.010	3.093	12	1
	A51	W54_6 Personal accomplishment and career prospects	8.374	3.126	12	1
	A52	W54_7 Job stability	9.523	2.794	12	1
DC1	A59	W29_2 Time devoted to relations with colleagues	3.997	0.880	5	1
	A60	W29_3 Time devoted to relations with superiors	3.397	1.078	5	1
	A62	W29_5 Time devoted to relations with institutions and users	2.757	1.194	5	1
DC2	A64	W38_1 Satisfaction of needs as worker	3.819	0.969	5	1
	A65	W38_2 Job stability	3.821	1.069	5	1
	A66	W38_3 Other material incentives	2.974	1.198	5	1
	A67	W38_4 Interpersonal relations	3.273	1.079	5	1
	A69	W38_6 Involvement in the mission of the organization	3.127	1.243	5	1
	A70	W38_7 Involvement in decision making	2.883	1.267	5	1
	A71	W38_8 Organization of cultural events with colleagues and associates	2.644	1.147	5	1

Table A2. Results of the measurement equation models. Cooperatives

		Estimate*	SE	p-value	Alfa	AVE	CRC
PERF1 by							
A3	Service quality relative to similar organizations	0.690	0.079	0.000	0.518	0.564	0.750
A4	Service quality relative to two years ago	0.763	0.060	0.000			
A5	Service quality relative to five years ago	0.796	0.060	0.000			
PERF2 by							
A8	Targets reached: good relations among workers	0.797	0.027	0.000	0.917	0.643	0.801
A9	Targets reached: relations between workers and their superiors	0.814	0.023	0.000			
A10	Targets reached: professional skills and competencies of managers	0.834	0.022	0.000			
A11	Targets reached: professional skills and competencies of workers	0.806	0.024	0.000			
A13	Targets reached: ability to work in team	0.772	0.028	0.000			
A15	Targets reached: internal communication/relations	0.732	0.027	0.000			
A17	Targets reached: motivation/participation of managers	0.776	0.026	0.000			
A18	Targets reached: motivation/paticiption of workers	0.876	0.021	0.000			
CSR1 by							
A20	Cooperative responsible towards service beneficiaries	0.832	0.091	0.000	0.648	0.480	0.680
A21	Cooperative responsible towards local community	0.814	0.067	0.000			
A22	Cooperative responsible towards workers	0.568	0.104	0.000			
A23	Cooperative responsible towards private financial supporters	0.503	0.079	0.000			
A24	Cooperative responsible towards public institutions	0.674	0.075	0.000			
CSR2 by							
A25	Reputation of the cooperative towards users	0.735	0.036	0.000	0.823	0.584	0.762
A26	Reputation of the cooperative towards other organizations in the sector	0.676	0.043	0.000			
A27	Reputation of the cooperative towards local community	0.790	0.033	0.000			
A29	Reputation of the cooperative towards public institutions	0.840	0.027	0.000			
A31	Reputation of the cooperative towards public administration	0.769	0.031	0.000			
CSR3 by							
A35	Trust between the cooperative and public administration	0.525	0.066	0.000	0.515	0.262	0.501
A36	Trust between the cooperative private suppliers	0.366	0.066	0.000			
A41	Trust between the cooperative in general	0.658	0.053	0.000			
A33	Organizational climate	0.454	0.080	0.000			
CRS by							
CSR1	Responsible	0.625	0.070	0.000	0.862	0.589	0.761
CSR2	Reputation	0.839	0.059	0.000			
CSR3	Trust and climate	0.820	0.070	0.000			
PERF1 with							
PERF2	Performance 2	0.416	0.061	0.000			
CSR	Corporate Social Responsibility	0.373	0.062	0.000			
PERF2 with							
CSR	Corporate Social Responsibility	0.623	0.045	0.000			

χ^2(269) 597.887; RMSEA: 0.018; WRMR: 1.222; CFI: 0.943

* Standardized coefficients are reported

Table A3. Results of the measurement equation models. Workers

			Estimate*	SE	p-value	Alfa	AVE	CRC
SAT by								
	A42	W25_1 Satisfaction with professional growth and training	0.789	0.009	0.000	0.809	0.560	0.747
	A43	W25_2 Satisfaction with on the job autonomy and independence	0.680	0.011	0.000			
	A44	W25_3 Satisfaction with past and perspective career advancement	0.757	0.010	0.000			
	A45	W25_4 Personal fulfilment	0.761	0.009	0.000			
MOT by								
	A49	W54_4 Flexibility of work hours	0.458	0.021	0.000	0.522	0.274	0.520
	A51	W54_6 Personal accomplishment and career prospects	0.506	0.021	0.000			
	A52	W54_7 Job stability	0.597	0.024	0.000			
DC1 by								
	A59	W29_2 Time devoted to relations with colleagues	0.514	0.022	0.000	0.583	0.352	0.582
	A60	W29_3 Time devoted to relations with superiors	0.745	0.023	0.000			
	A62	W29_5 Time devoted to relations with institutions and users	0.488	0.026	0.000			
DC2 by								
	A64	W38_1 Satisfaction of needs as worker	0.546	0.017	0.000	0.821	0.381	0.614
	A65	W38_2 Job stability	0.522	0.016	0.000			
	A66	W38_3 Other material incentives	0.651	0.014	0.000			
	A67	W38_4 Interpersonal relations	0.707	0.012	0.000			
	A69	W38_6 Involvement in the mission of the organization	0.669	0.014	0.000			
	A70	W38_7 Involvement in decision making	0.657	0.015	0.000			
	A71	W38_8 Organization of cultural events with colleagues and associates	0.543	0.016	0.000			
DC by								
	DC1	LD29	0.483	0.022	0.000	0.656	0.454	0.653
	DC2	LD38	0.822	0.025	0.000			
SAT with								
	MOT	L54	0.016	0.028	0.575			
	DC	DC	0.795	0.027	0.000			
MOT with								
	DC	DC	-0.011	0.034	0.747			

χ^2(114) 916.379; RMSEA: 0.041; WRMR: 1.978; CFI: 0.928

Standardized coefficients are reported

Appendix B. Results of structural equation model. Socioeconomic features of workforce

Table B1. Results of the structural equation model. Covariate: Education

	Elementary				Intermediate				Professional				High-school				University			
	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2
Direct Effects																				
SAT on																				
CSR	0.169	0.081	0.038	0.028	0.038	0.063	0.550	0.001	0.056	0.044	0.197	0.003	0.038	0.111	0.733	0.001	0.060	0.053	0.262	0.004
MOT on																				
CSR	-0.151	0.160	0.346	0.023	0.005	0.044	0.904	0.000	0.015	0.030	0.614	0.000	-0.060	0.059	0.305	0.004	0.059	0.039	0.127	0.003
DC on																				
SAT	0.903	0.220	0.000	0.812	0.905	0.009	0.000	0.823	0.913	0.006	0.000	0.839	0.919	0.013	0.000	0.852	0.922	0.006	0.000	0.852
MOT	0.077	0.061	0.205		-0.025	0.021	0.227		-0.030	0.010	0.003		-0.038	0.029	0.195		-0.050	0.015	0.001	
CSR	-0.021	0.059	0.723		0.024	0.020	0.235		0.032	0.014	0.023		0.051	0.036	0.152		0.003	0.016	0.867	
PERF1 on																				
DC	-0.422	0.233	0.070	0.302	-0.054	0.089	0.546	0.270	0.127	0.068	0.062	0.271	0.404	0.180	0.025	0.256	0.140	0.083	0.093	0.205
SAT	0.431	0.299	0.150		0.058	0.082	0.484		-0.090	0.064	0.159		-0.330	0.176	0.061		-0.097	0.080	0.221	
MOT	-0.032	0.091	0.724		0.026	0.054	0.629		0.011	0.032	0.732		0.026	0.073	0.722		0.026	0.039	0.511	
CSR	0.484	0.170	0.004		0.520	0.058	0.000		0.512	0.050	0.000		0.458	0.064	0.000		0.445	0.058	0.000	
PERF2 on																				
DC	0.134	0.161	0.406	0.603	0.214	0.087	0.014	0.525	0.196	0.054	0.000	0.565	0.262	0.165	0.112	0.452	0.246	0.073	0.001	0.487
SAT	-0.230	0.189	0.224		-0.133	0.073	0.067		-0.092	0.049	0.061		-0.206	0.139	0.137		-0.191	0.069	0.006	
MOT	-0.055	0.058	0.342		0.012	0.037	0.743		0.040	0.024	0.095		0.051	0.053	0.344		-0.009	0.032	0.790	
CSR	0.780	0.069	0.000		0.709	0.040	0.000		0.730	0.029	0.000		0.650	0.097	0.000		0.689	0.041	0.000	
Indirect Effects																				
CSR→PERF1	0.027	0.041	0.509		-0.001	0.004	0.819		0.006	0.004	0.152		0.022	0.020	0.291		0.003	0.004	0.406	
CSR→PERF2	-0.014	0.016	0.352		0.007	0.009	0.382		0.012	0.006	0.054		0.012	0.015	0.405		0.002	0.005	0.772	
Total Effects																				
CSR→PERF1	0.512	0.163	0.002		0.519	0.058	0.000		0.517	0.049	0.000		0.480	0.063	0.000		0.448	0.058	0.000	
CSR→PERF2	0.766	0.067	0.000		0.717	0.038	0.000		0.742	0.029	0.000		0.663	0.095	0.000		0.690	0.041	0.000	

$$\chi^2_{(5)}\ 4.872;\ \text{RMSEA}:0.000\ ;\ \text{SRMR}\ 0.010\ ;\ \text{CFI}:0.999$$

* Standardized coefficients are reported

Table B2. Results of the structural equation model. Covariate: Gender

	Male				Female			
	Est*	SE	pvalue	R^2	Est*	SE	pvalue	R^2
Direct Effects								
SAT on								
CSR	0.042	0.051	0.404	0.002	0.060	0.036	0.091	0.004
MOT on								
CSR	-0.010	0.037	0.793	0.000	0.016	0.026	0.543	0.000
DC on								
SAT	0.923	0.006	0.000	0.854	0.909	0.005	0.000	0.833
MOT	-0.038	0.014	0.006		-0.031	0.010	0.002	
CSR	-0.002	0.017	0.927		0.036	0.012	0.003	
PERF1 on								
DC	0.078	0.081	0.337	0.220	0.092	0.062	0.141	0.269
SAT	-0.092	0.073	0.209		-0.043	0.060	0.473	
MOT	-0.002	0.037	0.957		0.019	0.030	0.528	
CSR	0.468	0.050	0.000		0.509	0.049	0.000	
PERF2 on								
DC	0.131	0.066	0.047	0.588	0.234	0.050	0.000	0.521
SAT	-0.065	0.056	0.240		-0.149	0.046	0.001	
MOT	0.007	0.023	0.758		0.027	0.024	0.250	
CSR	0.761	0.033	0.000		0.700	0.032	0.000	
Indirect Effects								
CSR→PERF1	-0.001	0.002	0.609		0.006	0.004	0.110	
CSR→PERF2	0.002	0.005	0.642		0.013	0.005	0.019	
Total Effects								
CSR→PERF1	0.467	0.050	0.000		0.515	0.049	0.000	
CSR→PERF2	0.763	0.032	0.000		0.712	0.031	0.000	

χ^2 (2) 1.446; RMSEA: 0.000; SRMR 0.006; CFI:0.999

* Standardized coefficients are reported