With a little help from my colleagues: A social embeddedness approach to perceived organizational support

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Summary   We examined the role of social embeddedness in creating positive perceptions of organizational support among managerial and staff employees ($n = 72$) of a large manufacturing firm. We operationalized social embeddedness as the size, density, and quality of employees' networks of multiplex, reciprocated exchange relationships with colleagues. After controlling for support from supervisors and upper management, we found all three aspects of social embeddedness to be associated with perceived organizational support (POS). This research suggests that in addition to the top-down influence of the organizational hierarchy, POS results from the organizational community within which employees are embedded through their social network in the workplace. Copyright © 2011 John Wiley & Sons, Ltd.

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According to organizational support theory (Eisenberger, Fasolo, & Davis-LaMastro, 1990; Rhoades & Eisenberger, 2002; Shore & Shore, 1995), employees form a general belief concerning the extent to which the organization values their contribution and cares about their well-being. Such perceived organizational support (or POS) is associated with greater psychological well-being, a more positive orientation toward the organization, and behavioral outcomes helpful to the organization (e.g., Allen, Shore, & Griffeth, 2003; Eisenberger et al., 1990; Rhoades & Eisenberger, 2002). For these reasons, illuminating the antecedents of POS is important in order to explain employees' work behaviors and attitudes as well as organizational effectiveness (Rhoades & Eisenberger, 2002).

Organizational support theory adopts Levinson's (1965) view that employees personify the organization, viewing it as having dispositional characteristics including benevolent or malevolent intentions toward them. Although most research on POS has involved the favorable treatment attributed to the organization as a whole, perceptions of organizational support also depend on more proximal organizational representatives, such as supervisors and workgroups, which employees identify with the organization (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Self, Holt, & Schaninger, 2005). Multi-foci approaches to social exchange have recently emphasized the importance of these varied sources of support, according to which employees form discrete exchange relationships with differing organizational targets (Lavelle, Rupp, & Brockner, 2007). Insofar as such targets are perceived as shaping and implementing organizational values and objectives, organizational support theory argues that they will also influence employees' valuation of the organization as a whole (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger et al., 2002; Heffner & Gade, 2003; Lavelle et al., 2007; Rhoades & Eisenberger, 2002).

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Because managers and supervisors are primarily responsible for the direction, evaluation, and coaching of employees, existing research has focused on these organizational representatives as sources of POS (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Eisenberger et al., 2010), whereas coworkers have been given little attention. This *top-down* view of organizational support theory, however, seems at odds with the increasing autonomy and responsibilities given to coworkers in contemporary organizations. As organizations flatten their hierarchies, knowledge and resources become more dispersed throughout the organization, informal networks replace authority lines, and exchange relationships among increasingly interdependent coworkers assume pivotal importance (Burt, 2005). Hence, coworkers may contribute to shaping and implementing the organization's values and objectives, and their provision of both instrumental and socio-emotional resources may represent a significant influence on POS. Consistent with this view, Ng and Sorensen (2008) found in a recent meta-analysis that perceived coworker support was related to POS. They concluded that the traditional neglect of coworkers as a source of POS should be reconsidered.

This study extends the prevailing top-down view of organizational support theory by drawing attention to the *embeddedness* of employees in social networks of coworkers (e.g., Coleman, 1990; Granovetter, 1985; Podolny & Baron, 1997; Uzzi, 1999). Social embeddedness refers to the extent to which individuals are engaged in stable, repeated, multiplex social exchanges (Podolny & Baron, 1997). Multiplex exchanges are those involving both instrumental and socio-emotional resources with coworkers (e.g., Coleman, 1990; Granovetter, 1985; Podolny & Baron, 1997; Uzzi, 1999). By focusing on the social embeddedness of employees, the study makes two main contributions to the organizational support literature. First, it demonstrates the role of social networks as a notable source of POS. Employees attribute tangible aid and emotional support from their social network in the workplace not simply to the proclivities of coworkers but additionally to the organization as a whole. To date, research has emphasized perceptions of fairness, supervisor support and favorable rewards, and job conditions as the three primary categories of antecedents to POS (e.g., Rhoades & Eisenberger, 2002). An examination of how the social context of work influences POS draws attention to an entirely new category of antecedent variables that have not yet been considered.

Secondly, the approach developed in this study extends our understanding of reciprocated exchanges for the development of POS. As support perceptions reflect employee beliefs concerning the probability that their contributions will be reciprocated (Blau, 1964; Gouldner, 1960), organizational support theory views reciprocity as a key precondition for POS (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). However, previous researchers have more often assumed rather than empirically examined reciprocity. By integrating organizational support theory with the social embeddedness perspective, we show how embedded, reciprocated exchanges are conducive to POS.

Perceived Organizational Support, Social Networks, and Embeddedness

Researchers (e.g., Coleman, 1988; Granovetter, 1985; Uzzi, 1999) have found that a considerable proportion of employees' social exchanges at work, including the exchange of supportive resources, is embedded in networks of stable social relationships. Compared with sporadic exchanges, embedded exchanges are longer term, stronger, and more likely to be multiplex, involving both instrumental and socio-emotional resources (Podolny & Baron, 1997). Instrumental forms of social support involve resources that help employees accomplish specific tasks or objectives. These resources include information, expertise, professional advice, political access and advocacy, equipment, and supplies. Expressive forms of social support include approval, praise, intimacy, and emotional closeness and are important for fulfilling emotional and social identity needs (Ibarra & Smith-Lovin, 1997).

Favorable instrumental and expressive exchanges tend to promote each other. Expressive exchanges enhance the likelihood of requesting, offering, and delivering instrumental resources. In turn, the exchange of instrumental resources encourages social interactions, the development of trust, and responsiveness to socio-emotional needs

(Coleman, 1988; 1990). As a result, the combination of instrumental and socio-emotional support, characteristic of embedded exchanges among coworkers, can enhance an already favorable work climate or lessen the deleterious consequences of work stress and unsupportive supervision (e.g., Duffy, Ganster, & Pagon, 2002; Wu & Hu, 2009) and can contribute to employee well-being and effectiveness (e.g., Ibarra & Smith-Lovin, 1997; Kram, 1988; Thomas, 1990; Wu & Hu, 2009).

We contend that being embedded in a network of reciprocated, multiplex exchange relationships at work contributes to POS because employees identify the network, to some extent, with the organization. To the extent that the organization is held responsible for the culture and objectives that either promote or inhibit supportive relationships among coworkers (Ouchi, 1980), employees may attribute the supportiveness of their entire network of ties to the organization itself (Eisenberger et al., 1986; Levinson, 1965). Therefore, we would attribute support received from one's network of coworkers to a positive orientation toward employees by the organization, leading to greater POS. Furthermore, in addition to accessing valued resources, such networks enable employees to become accepted members of the organizational community, triggering feelings of fulfillment, mattering, and belonging toward the organization as a whole (House, Umberson, & Landis, 1988; McMillan & Chavis, 1986). Social acceptance and access to valued resources represent forms of favorable and supportive treatment and hence represent an important source of POS (Allen et al., 2003; Shore & Shore, 1995; Wayne, Shore, Bommer, & Tetrick, 2002).

When considering the influence of support received from coworkers on POS, the social network perspective has the advantage of moving the analysis beyond the employee's general perception of support from coworkers as a group to a consideration of the structure and characteristics of the actual relationships he or she entertain in the workplace. We may best understand the impact of employees' instrumental and expressive exchanges in social networks by considering network characteristics such as size, density, and quality, which have been shown to exert powerful influences on individual beliefs, attitudes, and behaviors in organizations (e.g., Kilduff, 1992; Labianca, Brass, & Gray, 1998; Mehra, Kilduff, & Brass, 2001). These network properties are relevant because they may influence the amount and value of resources exchanged and therefore the contribution of the social network to POS. We consider how these three network properties of size, density, and quality influence POS.

Network size refers to the total number of others to which a focal person is directly connected. From the perspective of social embeddedness, meaningful connections are both multiplex and reciprocated, leading to long-term, open-ended commitments and strong relationships of mutual support between actors (Coleman, 1988; Granovetter, 1974; Uzzi, 1999). Thus, the larger the network size, the greater the amount of supportive instrumental and socio-emotional resources from which an employee may draw (Lin, 1999) and the stronger the employee's integration in the organizational community (Bourdieu, 1986). Based on these arguments, the following is our first hypothesis:

Hypothesis 1: The size of employees' social networks within the organization is positively associated with POS.

The second network characteristic that is expected to influence POS is the *density* of employee social networks. Network density refers to the extent to which an employee's contacts are connected to one another. The larger the share of an employee's contacts that are mutually connected, the higher the density of the employee's social network. The social and reputational benefits of engaging in supportive behaviors increase with network density, and, therefore, colleagues embedded in dense networks also have a stronger incentive to provide supportive behaviors than colleagues embedded in sparse networks (Buskens & Raub, 2002). Furthermore, when an employee's contacts are mutually connected, opportunistic and non-cooperative behaviors are more likely to be discovered and sanctioned (Buskens, 2002; Raub & Weesie, 1990), increasing the incentive for members in the network to be supportive. As a result, higher density increases the exchange of instrumental and socio-emotional resources (Coleman, 1988). Consistent with these arguments, researchers have shown that dense social networks are associated with higher levels of social solidarity and voluntary favorable treatment (Moody & White, 2003), which

have been found to be positively related to POS (Eisenberger, Cummings, Armeli, & Lynch, 1997). Thus, network density should positively influence POS.

Hypothesis 2: The density of employees' social networks within the organization is positively associated with POS.

Lastly, the quality of their social network may enhance employees' POS, that is,, by the availability of high-performing coworkers to whom they are connected by reciprocated, multiplex exchange relationships. Employees who show superior in-role performance and are engaged in various kinds of helpful citizenship behavior such as serving as a team player, actively pursuing developmental opportunities, proposing changes and improvements, and helping others (Welbourne, Johnson, & Erez, 1998) are more likely to have access to, and more likely to provide, needed instrumental resources such as tangible aid and information. High performers are also more likely to actively pursue cooperative and helping behaviors and expressive exchanges that help both the organization and the coworkers. Thus, being connected to high-performing coworkers may increase the quality of the social network by providing superior instrumental and socio-emotional resources, which contribute to an employee's own effectiveness and well-being in the work environment (Ladd & Henry, 2000; Ng & Sorensen, 2008; Wu & Hu, 2009). Hence, the quality of the social network should enhance employees' POS.

Hypothesis 3: The quality of employees' social network is positively associated with POS.

We have suggested that three features—size, density, and quality—of an employee's reciprocated, multiplex network of exchange relationships with coworkers directly contribute to POS. Our prediction of a direct effect of the social network on POS draws from the embodiment argument of organizational support theory, which suggests that in assessing the motives and dispositions of the organization with respect to the provision of support, employees take into account the actions of organizational agents that represent the organization (Eisenberger et al., 2010).

Research on the multi-foci view of social exchange emphasizes that employees do not perceive organizations as "a monolithic, undifferentiated entity" (Reichers, 1985, p. 469) but they "conceptualize their work experience in a multifaceted way, differentiating between sources of justice, social exchange relationship partners, and beneficiaries of citizenship behaviors" (Lavelle et al., 2007, p. 851). Accordingly, employees should attribute treatment more to the entity from which it is received than to a different entity. Thus, organizational policies and practices should have the strongest impact on perceptions of organizations, supervisor behaviors should influence perceptions of supervisors, and coworker behaviors should exert the strongest influence on perceptions of coworkers. However, in each case, there can be cross-target effects (Lavelle et al., 2007), so that, for example, supervisor or coworker behaviors might directly influence perceptions of the organization. The observation of cross-target effects is consistent with the view of organizational support theory that employees generalize favorable treatment from organizational entities, such as supervisors and workgroups, to the entire organization (Eisenberger et al., 2002, 2010; Self et al., 2005).

We have argued that, as coworkers in contemporary organizations control valued resources and represent the organization, an employee's social network of coworkers is a potentially important direct source of POS (e.g., Duffy et al., 2002; Ibarra & Smith-Lovin, 1997; Kram, 1988; Thomas, 1990; Wu & Hu, 2009). The embodiment argument, however, would also be consistent with an indirect effects model, where the effect of social embeddedness on POS is mediated by employees' valuation of coworkers. The multi-foci perspective suggests that the actions of coworkers, such as their patterns of reciprocal social exchanges, would be attributed initially to perceptions of coworker support. However, we would then expect perceptions of coworker support to influence POS. This is because POS is affected not only by behaviors directly attributed to the organization but also by the supportiveness of more proximal organizational entities such as the supervisor and the workgroup (Eisenberger et al., 2002, 2010; Self et al., 2005). Accordingly, to the extent that coworkers and supervisors are identified with the organization, employees would also attribute perceptions of supportiveness to the organization as whole (Eisenberger et al., 2002, 2010; Heffner & Gade, 2003; Lavelle et al., 2007). This leaves open the possibility that in addition to a direct effect, the social networks of coworkers may indirectly impact POS via their influence on employees' perceptions of coworkers support. In order to

gain a more nuanced understanding of the mechanism by which social embeddedness affects POS, we therefore assess the following exploratory hypothesis.

> Hypothesis 4: Network size, density, and quality of employees' social network are positively related to perceived coworker support, which partially mediates their relationship with POS.

Method

Sample and procedure

We drew the sample for this study from a large, family-owned food products manufacturer in Greece that has approximately 1000 employees. We focused on the social networks among the managerial and administrative staff in the organization ($n = 72$). The sample included the company owner and president. At the next three levels, there are nine senior managers (12.2 per cent), 22 first line managers (29.7 per cent), and 41 administrative staff (55.4 per cent).

Following established practice in the social network literature (Wasserman & Faust, 1994), we sought to capture all of the social relationships among a defined group of employees. For feasibility reasons, we sought to constrain the network by selecting a specific, clearly defined subgroup of employees (Doreian, Teuter, & Wang, 1984). The managerial and administrative staff was identified as a subgroup that was expected to have a high number of ties internally and to be relatively well circumscribed. A population size comprising 72 individuals is well within the norm for research on social networks in the organizational behavior literature (e.g., Brass & Burkhardt, 1993; Labianca et al., 1998; Mehra et al., 2001).

We created two surveys. We delivered the first survey via internal mail to all of the employees in the target group. In addition to demographic and attitudinal questions, the survey gathered information on the social ties. We delivered a second short survey, measuring the performance of each direct report, directly to all of the supervisors of the members of the targeted survey group. Respondents returned 100 per cent of the surveys, which were usable, although occasionally there were individual missing items, which were handled by list-wise deletion in the analysis. The 100 per cent response rate was facilitated by the small size of the company, the focused nature of the target group, the personal letter to each participant signed by the owner and president, and also the support of the HR director. Having obtained a 100 per cent response rate is of the utmost importance, in that missing units create serious methodological problems in the analysis of social networks (Wasserman & Faust, 1994).

Measures

Perceived organizational support
Perceived organizational support was operationalized using a shortened version of the Survey of Perceived Organizational Support (Eisenberger et al., 1986, 1990). The items used were the same as those as used in Shanock and Eisenberger (2006) with the same five-point Likert response format. Such shortened versions of this one-dimensional scale are frequently used in the POS literature (e.g., Allen et al., 2003; Eisenberger et al., 1990; Wayne, Shore, & Liden, 1997).

Perceived coworker support
We measured perceived coworker support by using a modified form of the POS scale (Ladd & Henry, 2000; Shanock & Eisenberger, 2006). The six items included topics such as "my coworkers care about my well-being." The scale has a five-point Likert response format. The items in the scale are intended to reflect respondents' beliefs concerning their coworkers' attitudes toward them in general. Prior studies using this scale have demonstrated very satisfactory validity and reliability (e.g., Ladd & Henry, 2000).

Social network measures

To measure empirically employees' social networks in the workplace, we administered a survey to the entire population ($N = 72$) of managers and administrative staff in the company. Because respondents may find it difficult to recall all of their contacts, the questionnaire prompted respondents with a grid including the name and surname of all the individuals in the study population (Wasserman & Faust, 1994). We asked the respondents to report on their social relationship with each person by checking the appropriate boxes. Although people tend to provide inaccurate reports on exchanges that take place within short time frames, they are accurate in reporting exchanges occurring through stable social relationships over long time intervals (Marsden, 1990). Therefore, our measures were designed to identify and measure respondents' stable social exchange relationships (Wasserman & Faust, 1994).

First, we asked to whom they would turn for professional advice in case they found themselves confronted with a work-related problem. The item wording was, "Which of your colleagues do you ask for professional, technical, or work related advice?" The four response options were "circle nothing if you definitely would not turn to a given colleague," "circle 1 if you would go to a colleague only for problems of minor significance," "circle 2 if you would go to a colleague for significant problems," and "circle 3 if you would go to a colleague for advice on highly significant problems."

Second, we asked how often they collaborated with colleagues in the past year. Collaborate was defined for respondents as "working together on the same project or task, solving problems together, etc. Collaboration does not mean occasional advice in this case" (Coromina, Guia, Coenders, & Ferligoj, 2008). Response options for this item were "circle nothing if you never worked with a colleague in the whole year," "circle 1 if you worked with a colleague only some times in the whole year," "circle 2 if you worked with a colleague some times a month," and "circle 3 if you worked with a colleague every day or every few days."

Third, we asked whom the respondents regarded as trustworthy. The three response options were "circle nothing for those colleagues who you do not know well enough, or are neutral towards," "circle −1 if you distrust a colleague," and "circle +1 if you trust a colleague."

Fourth, we asked whom the respondents regarded as supportive. The three response options were "circle −1 for those colleagues whom you consider to be unsupportive," "circle +1 for those colleagues whom you consider to be supportive," and "circle nothing (do not circle any cell) for all other colleagues." Although the first two questions relate to the instrumental dimension of employees' social relationships, the second two aim at capturing their expressive dimension.

We operationalized a tie between employee i and employee j as multiplex whenever i cited j across all of the four questions. Furthermore, to make sure that our network operationalization captures only those social relationships that are reciprocated, we recognized a tie between two employees only when a relationship was reported by both of them. Thus, a tie is counted only when it is both multiplex and reciprocal.

Network size

We measured an employee's network size as the number of colleagues he or she entertains a multiplex and reciprocal social relationship with. Notice that because our network model is based on multiplex and reciprocated reports, the probability that respondents either overestimate or underestimate the size of their social network size is minimal.

Network density

We measured network density as the extent to which an employee's contacts are mutually connected. A connection exists between two contacts if they both report a connection with one another across all four relational dimensions. Formally,

$$NetworkDensity_i = \frac{2t}{n(n-1)}$$

where n is the number of colleagues with whom i entertains a social relationship, and t is the number of social relationships existing among them. Hence, network density varies between zero, if there are no connections at all

among i's contacts, and one, if all of i's contacts are connected to each other. For the purpose of the analysis, we rescaled this variable to the range 0–100.

Network quality

In order to assess the quality of network connections, we measured work–role performance using the role-based performance scale (RBPS) developed by Welbourne et al. (1998). We obtained data from supervisors by using a separate survey. The RBPS encompasses both in-role (job performance) and extra-role dimensions of performance (organizational citizenship, teamwork, innovation, and career development). These different work–role behaviors represent forms of discretionary behavior that are considered beneficial to the organization and to other organizational members. The RBPS is designed as a generalizable measure of job performance and has demonstrated substantial evidence of validity, explaining a significant variance in 360-degree feedback, suggestion making, hours worked, salaries, and incentive pay (Welbourne et al., 1998).

The RBPS consists of 20 items, scored with a five-point agree–disagree response format. Factor analysis revealed a single performance factor with a Cronbach's coefficient alpha reliability estimate of .96. Summing the items created a single variable reflecting the role-based performance of each employee. In order to create a continuous measure of the overall quality of network connections for each employee, we transformed observed scores on the RBPS into mean-centered deviations so that above-average performers have values greater than zero whereas below-average performers score negative values. For each employee, we averaged this value across all contacts with which multiplex and reciprocated ties were held, excluding the employee himself or herself. According to this measure, network quality increases with the average performance of an employee's contacts: it hovers around zero when an employee's contacts are average performers, it scores highest when all of them are in the high end of the performance distribution, and it scores lowest when they are all in the low end. By averaging the performance scores across an employee's network connections, we normalize the measure with respect to the number of contacts in an employee's social network. This avoids confounding network quality with network size.

Control variables

Evidence suggests that a significant influence on POS is perceived supervisor support (e.g., Eisenberger et al., 2002; Shanock & Eisenberger, 2006); therefore, we include this as a control variable. We measured perceived supervisor support by using a modified form of the POS scale (Shanock & Eisenberger, 2006). The six items included topics such as "my supervisor cares about my well-being" with a five-point, agree–disagree response format.

It is possible that strong social exchanges with supervisors may also embody the exchange relationship that an employee enjoys with the organization (Levinson, 1965). We considered a social exchange with a supervisor to be strong when there is a reciprocated and multiplex exchange relationship with the immediate supervisor. We therefore used a dummy variable, with the value of one or zero, to control for the potential influence of such a strong relationship on POS.

We can expect the length of time that an individual has worked within an organization, and the amount of time that they have had to develop and receive supportive exchanges with the organization, to influence their network of connections. We therefore control for this possible influence by including organizational tenure as a variable within the analysis.

The level of an individual within the organizational hierarchy may influence both social embeddedness and support perceptions by increasing access to resources and opportunities for building relationships with influential others in the organization. As employees climb in the hierarchy, they have more opportunity to interact with others who control significant resources. On the other hand, opportunities for horizontal ties are more extensive further down the hierarchy. Although the combined effect of hierarchical level on network embeddedness and support perceptions is not known, to avoid its confounding influence, we have included it as a control variable.

It is possible that the work–role performance of an employee will influence their ability or opportunity to form exchange relationships with coworkers, supervisors, and the organization. Therefore, we included a control variable for role performance by using employee scores on the RBPS (Welbourne et al., 1998) described above. As we did

not include the employees' own scores within our measure of network quality, these two variables are independent of one another.

Analysis

Preliminary analysis included checking the factor structure of the multi-item measures using principal axis factoring. We chose the exploratory factor analysis because of the sample size, which, although good for a complete network, is insufficient for a confirmatory factor analysis. The factor retention criteria were parallel analysis and evaluation of the scree plot of eigenvalues (Gorsuch, 1983; Hayton, Allen, & Scarpello, 2004). We used the parallel analysis because of the tendency of the minimum eigenvalue greater than one criterion to result in the retention of spurious factors (Hayton et al., 2004). We treated factor loadings of greater than .40 as significant (Ford, MacCallum, & Tait, 1986; Hair, Anderson, Tatham, & Black, 1992). We tested the hypotheses by using hierarchical regression analysis.

Results

Table 1 reports means, standard deviations, and zero-order correlations among the variables. The pattern of correlations shows that network size was uncorrelated with network density and network performance, whereas there was a moderate correlation between network quality and network density. Although all three network variables are significantly correlated with POS, only network density and network quality were correlated with perceived coworker support, suggesting differential influences among the indicators of social embeddedness and the support perceptions. We summarize the results of the factor analysis in Table 2.

After we dropped items with significant cross loadings, the fit of a three-factor solution supported the discriminant validity of the POS, perceived coworker support, and perceived supervisor support measures. Parallel analysis results (Hayton et al., 2004) combined with scree plot analysis of eigenvalues indicated that a three-factor solution was appropriate, and the item loadings exhibited a simple structure (Gorsuch, 1983). The coefficient alpha reliability is .82 for the four-item POS scale, .84 for the four-item perceived coworker support scale, and .88 for the five-item perceived supervisor support scale.

We used the hierarchical regression analysis to test the hypotheses. Our first three hypotheses suggested that social embeddedness variables will influence POS. We summarize the results of the hierarchical regression analyses in Table 3

Model 1, which includes the control variables only, is significant (Adj. R^2 .293, $p < .001$), and there are positive and significant coefficients for organizational tenure ($B = .015$, $p < .05$) and perceived supervisor support ($B = .386$, $p < .001$). Model 2, which includes the three social embeddedness variables, is significant (Adj. R^2 .441, $p < .001$) and adds significantly to the overall variance explained in POS (ΔR^2 .161, $p < .001$). In support of hypothesis 1, the coefficient for network size is positive and significant ($B = .040$, $p < .05$). The positive and significant coefficient for network density ($B = .005$, $p < .05$) provides support for hypothesis 2. Finally, the coefficient for network quality is positive and significant ($B = .017$, $p < .05$), providing support for hypothesis 3.

Our fourth hypothesis concerns the mediating role of perceived coworker support between social embeddedness and POS. According to Baron and Kenny (1986), evidence of mediation requires first that there be a relationship between the independent variables and the dependent variable, which we have already shown. Second, there should be a relationship between the independent variables and the mediator. In a regression analysis (available from the authors), we found a positive but marginally significant association between two of the three hypothesized causal variables, network density ($B = .033$, $p < .10$), and network quality ($B = .090$, $p < .10$), and perceived coworker support, and a non-significant coefficient for network size ($B = .088$, n.s.). The final criterion proposed by Baron and Kenny

Table 1. Means, standard deviations, and correlations

	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Perceived organizational support	3.952	0.612									
(2) Organizational tenure	13.890	9.286	0.353**								
(3) Hierarchical level	1.556	0.710	0.132	0.131							
(4) Role performance	70.247	13.025	0.299**	0.291*	0.073						
(5) Perceived supervisor support	4.016	0.688	0.522***	0.221	0.184	0.308**					
(6) Multiplex tie with supervisor	0.257	0.440	0.216	0.177	−0.047	0.338**	0.235*				
(7) Network size	0.452	4.187	0.333**	0.093	0.519***	0.181	0.212	0.153			
(8) Network density	26.642	25.967	0.381**	0.032	−0.045	0.062	0.295*	0.309*	−0.001		
(9) Network quality	0.000	8.286	0.287*	0.079	−0.062	0.056	−0.021	−0.104	0.003	0.284*	
(10) Perceived coworker support	3.793	0.632	0.733**	0.239*	0.177	0.190	0.297*	0.016	0.188	0.288*	0.255*

***$p < .01$; **$p < .05$; *$p < .1$.

Table 2. Exploratory factor analysis results for perceived coworker support, perceived organizational support, and perceived supervisor support

Item	Factor 1	Factor 2	Factor 3
Perceived supervisor support			
1. My supervisor really cares about my well-being	**.949**	.102	−.110
2. My supervisor shows very little concern for me	**.851**	.037	−.153
3. My supervisor strongly considers my goals and values	**.717**	−.117	.240
4. My supervisor is willing to help me when I need a special favor	**.657**	.027	.183
5. My supervisor takes pride in my accomplishments at work	**.599**	.133	.145
Perceived coworker support			
1. My coworkers strongly consider my goals and values	−.035	**.879**	.058
2. My coworkers take pride in my accomplishments at work	.085	**.788**	−.045
3. My coworkers really care about my well-being	.208	**.711**	−.125
4. My coworkers value my contribution to their well-being	−.002	**.548**	.124
Perceived organizational support			
1. The organization is willing to help me when I need a special favor	.132	−.242	**.781**
2. The organization shows very little concern for me	.147	.021	**.666**
3. The organization values my contribution to its well-being	−.023	.305	**.658**
4. The organization strongly considers my goals and values	−.050	.397	**.596**
Eigenvalues	5.445	2.023	1.692
Cumulative % of variance	41.888	57.451	70.467

Note: Principal axis factor analysis, with oblique rotation. Significant loadings in bold.

(1986) is that after controlling for the causal variables, the mediator variable should be significantly associated with the dependent variable. In Table 3, model 3, the coefficient for perceived coworker support is positive and highly significant ($B = .088$, $p < .001$), indicating that even after we controlled for the influence of network size, density, and quality, perceived coworker support contributes significantly to POS. Finally, we note that network density becomes non-significant ($B = .002$, n.s.), and network quality becomes less significant ($B = .009$, $p < .10$), after we entered perceived coworker support into the regression. The Sobel test indicates marginal levels of statistical significance of

Table 3. Hierarchical regression of POS on network characteristics and perceived coworker support

Dependent variable: perceived organizational support	Model 1		Model 2		Model 3	
	B	SE B	B	SE B	B	SE B
Intercept	1.880***	0.447	2.082***	0.406	0.811*	0.351
Organizational tenure	0.015*	0.007	0.014*	0.006	0.009[+]	0.005
Hierarchical level	0.016	0.088	−0.075	0.092	−0.113	0.069
Role performance	0.004	0.005	0.003	0.005	0.001	0.004
Perceived supervisor support	0.386***	0.096	0.329***	0.088	0.241***	0.067
Multiplex tie with supervisor	0.064	0.152	−0.015	0.144	0.086	0.109
Network size			0.040*	0.016	0.032**	0.012
Network density			0.005*	0.003	0.002	0.002
Network quality			0.017*	0.007	0.009[+]	0.005
Perceived coworker support					0.088***	0.012
Adj. R^2	.293		.441		.668	
F	6.972***		8.104***		18.679***	
ΔR^2	.342		.161		.224	
F change	6.972***		6.913***		51.809***	

Note: Results reported are the unstandardized betas; POS = perceived organizational support. ***$p < .001$; **$p < .01$; *$p < .05$; [+]$p < .10$.

the mediation effect of perceived coworker support for both network density ($z = 1.69$, $p < .10$) and network quality ($z = 1.68$, $p < .10$). Overall, the results for the mediation hypotheses are marginal in significance.

Although the results in Table 3, model 3, do not offer support for the mediation hypothesis, it is clear that perceived coworker support improves the overall predictive power of the model (ΔR^2 .224, $p < .001$). At the same time, the influence of network size decreases, although the coefficient becomes more statistically significant. These results imply that although perceived coworker support may not significantly mediate social embeddedness, this variable still accounts for significant variation in POS. Although they are related, perceived coworker support and the network variables included in this model are not fully overlapping in their ability to explain variation in POS.

A possible challenge to our findings relates to our proposition that social embeddedness through multiplex ties, rather than simply either instrumental or expressive ties alone, accounts for the network effects on POS. In other words, what we interpret here as support for social embeddedness may simply be the resource-giving effects of either instrumental or expressive ties alone. We evaluated this possibility in a supplementary analysis that isolates these additional effects by creating six new variables (instrumental network size, instrumental network density, instrumental network quality, expressive network size, expressive network density, and expressive network quality) and reanalyzing the relationships described above. In these supplemental analyses, available from the authors, we found no evidence that instrumental or expressive ties measured independently are associated with POS. We therefore interpret the results of this analysis as supporting the significance of embedded ties, which are multiplex and reciprocated exchanges that include *both* instrumental and expressive connections, for POS. In the following section, we discuss the significance of these results for research and practice in the area of POS and employee–organization relationships more generally.

Discussion

In this study, we examined whether social networks at work contribute to POS. Our results provide evidence that social embeddedness, specifically the size, density, and quality of employees' social networks in the organization, is positively related to POS. We associated greater network size, allowing an increased number and a variety of instrumental and socio-emotional resources to be obtained from coworkers (Lin, 1999), with higher POS. We

similarly associated a dense network, providing a greater likelihood that helpful behaviors will be noticed and rewarded and making it more likely that non-normative behaviors will be detected and sanctioned (Buskens & Raub, 2002; Coleman, 1998), with increased POS. Finally, we also related a high-quality network, involving high performers who are both capable and willing to provide expert advice and aid, to enhanced POS. These findings extend organizational support theory from its emphasis on managers and supervisors as agents of the organization (Eisenberger et al., 1986, 2002) to a greater understanding of the role of social embeddedness for POS.

Prior theory and research on POS have long identified upper managers and supervisors with the organization, the former for their role in influencing organizational culture and setting strategic objectives and the latter for directing, evaluating, and coaching subordinates and channeling tangible resources to them. The present findings suggest that coworkers form part of the informal structure of the organization that contributes to organizational support. Our results are consistent with recent organizational changes that have given rank and file employees greater responsibilities and created greater interdependence among coworkers for decision making, setting goals, and achieving objectives (Hyman & Mason, 1995; Rajan & Wulf, 2006). Thus, social networks within organizations have taken on a greater symbolic value as a defining part of the organization. We do not mean to over-generalize these findings. We have generally found the support by higher-level managers and supervisors to be more closely related to POS than has support by coworkers (Ng & Sorensen, 2008). Still, the present findings suggest that the instrumental and socio-emotional resources provided by the social network are experienced, in part, as coming from the organization and make a notable contribution to POS.

In their meta-analysis, Rhoades and Eisenberger (2002) identified perceptions of fairness, supervisor support and favorable rewards, and job conditions as the three primary categories of antecedents to POS. The findings reported in the present study suggest that social embeddedness represents a fourth relevant category of antecedents to POS, which prior studies have largely neglected. Although relations certainly exist between social embeddedness and the three categories of POS factors identified by Rhoades and Eisenberger (2002), we believe that a key distinguishing difference lies in the role that the social embeddedness perspective ascribes to coworkers as organizational agents embodying the organization's values and objectives. Viewing social embeddedness as a relevant category of POS antecedents implies that it is important to focus on informal social exchange relationships that form, develop, and stabilize within the workplace. In this respect, investigating employees' social exchange relationships in the workplace, and the normative factors influencing them, may be a useful strategy for building on the present findings. Toward this end, future research should investigate how factors such as interpersonal trust, solidarity, altruism, collectivism, cooperativeness, and, conversely, competitiveness, aggressiveness, disloyalty, and self-interest impact POS through social embeddedness.

We considered as an exploratory hypothesis the possibility that employees' perceived coworker support might partially mediate the relationship between social embeddedness and POS. Employees might draw a general perception of support from coworkers, based on their social embeddedness, leading to POS. The results do confirm the significance of perceptions of coworker support for POS and also suggest that there is only a partial overlap in the variance explained by social embeddedness measures versus perceived coworker support. However, the relationship between the three network properties and perceived coworker support varied between marginally significant and non-significant. We found only equivocal support for this view. Future research is warranted in view of our limited sample size.

Future research should also examine the influence of national context, organizational culture, and the organization's strategic objectives on the importance of social networks at work and POS. Our study was conducted in a Greek, family-owned, manufacturing business. In countries with high levels of individualism, social embeddedness may play less of a role in POS. Similarly, it would be useful to understand how other cultural variations such as power distance and uncertainty avoidance lead to a greater or lesser influence of social embeddedness on POS. Organizations differ in the value of resources they are willing to invest in employees (Tsui, Pearce, Porter, & Hite, 1995). To the extent that employees are viewed as human capital, whose skills, knowledge, and decisional autonomy is to be fostered, top managers will be more likely to provide developmental training opportunities and other resources that enhance the potential of employees. In a study of 10 companies, Tsui and colleagues found that employees performed better on

central tasks, showed higher citizenship behavior, and expressed greater affective organizational commitment in firms that promoted heavy investment of resources in employees. As a result, investments in human capital should also lead to an increased amount and quality of instrumental and socio-emotional resources exchanged among employees. Thus, management strategies that value human capital may be expected to strengthen the social networks in which employees are embedded, as well as directly influencing POS.

Further, organizations vary in the extent to which they place a strong emphasis on traditional hierarchical, mechanistic structures characterized by rigid bureaucracies, centralized power, and lean communication networks versus more organic structures in which administrative and work relationships are fluid and informal. In a study of 68 organizations, Ambrose and Schminke (2003) found that the perceived fairness of rules was more strongly related to POS in mechanistic organizations than organic organizations. In more organic organizations in which decentralized decision making is *ad hoc* and in which groups are valued, social networks may have an increased influence on POS. In such organic organizations, employees may be more likely to see themselves as members of a community that is integral to the organization (Masterson & Stamper, 2003). Under these conditions, social embeddedness within the organizational community is essential in providing employees with feelings of belonging, mattering, and the fulfillment of their needs.

The findings presented in the present paper also contribute to our understanding of social embeddedness. Previous studies have examined how social embeddedness influences the attitudes and behaviors deemed appropriate in social situations (DiMaggio & Louch, 1998; Portes & Sensenbrenner, 1993) and the support a person receives from his or her significant others (Ibarra & Smith-Lovin, 1997; Uzzi, 1999). In work relations, in particular, we show that the embedding of instrumental exchanges in deeper social attachments facilitates supportive exchanges by enacting "expectations of trust and reciprocal obligation that actors espouse as the right and proper protocols for governing exchange with persons they come to know well" (Uzzi, 1999, pp. 483–484). Building on the personification argument at the core of organizational support theory (Eisenberger et al., 1986; Levinson, 1965), we have argued that in the organizational context, such expectations would be generalized to the organization as a whole. Consistent with this argument, we found that the network of multiplex, reciprocal exchanges in which employees are embedded within the workplace influences their perceptions of organizational support. By integrating the concept of social embeddedness within a POS framework, the present study provides evidence that the effects of social embeddedness may be more far reaching than previous research has recognized. The present findings suggest that the effects of social embeddedness can be expected to extend beyond interpersonal relations, on which embeddedness research has focused so far, to include the person–organization relationship. Future research on social embeddedness may therefore benefit by expanding consideration to an individual's relationships with organizations.

The present findings also have implications for management practice. We negatively associated POS with employee turnover and positively associated it with commitment to the organization and its goals, and individual performance (e.g., Allen et al., 2005; Eisenberger et al., 1990, 2001; Rhoades, Eisenberger, & Armeli, 2001; Rhoades & Eisenberger, 2002; Settoon, Bennett, & Liden, 1996; Shore & Coyle-Shapiro, 2003). The results of this study suggest that employers can influence POS by nurturing supportive social networks at work characterized by embedded ties that provide socio-emotional and instrumental support. Managers can aid in this objective by encouraging and rewarding greater communication and team approaches to achieving common goals and by fostering the values of cooperation and solidarity.

This study is not without limitations. Our use of only managerial and administrative personnel potentially limits the generalizability of the results. Although over half the sample (55 per cent) were non-managerial employees who worked in the staff functions of the organization, it is possible that the results do not extend to line personnel. An important question would be whether the size, density, and quality of these networks are higher for managerial and administrative personnel than those found in other domains. The average number of embedded ties (1.04 per employee) was relatively low, warranting replication in more closely knit organizations. We need further research to determine whether similar results obtained are observed in non-manufacturing settings. Another potential limitation is that these data are cross-sectional, which leaves the possibility that the causal relationships we are inferring may be opposite in direction to those we have proposed. It is possible that positive perceptions and attitudes precede the

formation of social ties. Mitigating this problem is the fact that although perceptions may be quite dynamic, network ties tend to be formed and reinforced over time (Burt, 2005). Therefore, the reverse causal direction is less likely than the direction hypothesized. Nonetheless, we cannot rule out the alternative possibility that the evolution of POS over time influences the formation of exchanges among employees. A longitudinal study of network dynamics and employee perceptions would strengthen the arguments presented here. We also recognize that a larger sample size might provide the greater statistical power needed to detect mediating effects, although the trade-off for sample size is the feasibility of measuring a complete network. As sample size increases, the number of possible network connections increases quadratically.

In conclusion, the present research opens a new vista concerning our understanding of how employees view their support by the organization. It has long been emphasized that employees' POS is influenced by others in the organization who are important to them (Eisenberger et al., 1986; Levinson, 1965). Our findings suggest that employees view not only managers and supervisors as organizational representatives but also their social network at work. Thus, employees with large, dense, and high-quality social networks experience higher POS. We hope that this initial study will encourage future research into the role that social networks play in the development of POS.

Acknowledgements

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