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The mediating role of affective commitment in the rewards–knowledge transfer relation

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Abstract

Purpose – The purpose of this paper is to assess the relative importance of intrinsic and extrinsic rewards as determinants of affective commitment and the influence of employees' affective commitment on knowledge transfer in the context of a Spanish social firm.

Design/methodology/approach – Using data from a sample of 227 employees working for a Spanish social firm, this study employs the partial least squares approach to test the research hypotheses.

Findings – The research findings show that contrary to the findings of prior empirical studies, reward systems do not influence knowledge transfer in a direct way. Rather, reward systems act indirectly through the development of affective commitment, which is required to increase employees' loyalty, reduce their turnover levels and improve their willingness to transfer their knowledge.

Research limitations/implications – This research focuses on a Spanish social firm, and recommendations to other organizations should, therefore, be made with caution. However, this study provides interesting empirical insights, linking rewards systems and knowledge transfer by means of affective commitment in the context of a social firm.

Practical implications – Besides the importance of promoting knowledge transfer through the creation of a suitable climate in the organization, the authors recommend that managers cultivate employees' affective commitment by means of reward systems, especially intrinsic rewards. Employees with increased affective commitment are more prone to transfer the knowledge that they possess, and consequently, the potential loss of tacit knowledge for the organization is reduced if these employees leave the organization. Also, the authors suggest that managers make an effort to create a balanced reward system, so that extrinsic and intrinsic rewards can act as complementary processes to develop a high level of affective commitment among employees.

Originality/value – Few empirical studies have analyzed the influence of affective commitment on knowledge transfer, especially in the context of a social firm, even though this type of firms play an increasingly important economic and social role in society.

Keywords Affective commitment, Knowledge transfer, Extrinsic rewards, Intrinsic rewards, Social firm

Paper type Research paper

1. Introduction

As knowledge is considered to be the most strategically important resource for organizations (Conner and Prahalad, 1996; Grant, 1996; Kogut and Zander, 1996; Nahapiet and Ghoshal, 1998), the literature is increasingly recognizing the importance of knowledge transfer to organizations (Bhatt, 2002; Carter and Scarbrough, 2001; Chauvel and Despres, 2002; Chowdhury, 2005; Nonaka, 1991, 1994; Van den Hooff and de Ridder, 2004) and to their competitiveness (Anantatmula and Kanungo, 2006; Carneiro, 2000; Carter and Scarbrough, 2001; Darroch, 2005; Marqués and Simón, 2006; Ofek and Sarvary, 2001). However, knowledge transfer is not a spontaneous process; it depends on people's willingness to transfer their knowledge and whether the knowledge held by individuals can move from the individual to the group and organizational levels (Cabrera and Cabrera, 2005; Ipe, 2003). In this sense, a key problem is that people are not always willing to transfer their knowledge (Gagné, 2009; Huber, 2001). Therefore, determining

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which factors promote individuals' knowledge transfer (Van den Hooff and de Ridder, 2004) and what the organizations can do to increase their employees' willingness to transfer their knowledge constitute an important area of research.

The identification of the factors that motivate individuals to transfer their knowledge is a topic that has not received much attention in the literature (Chang *et al.*, 2007). Johannessen *et al.* (1999) argue that knowledge transfer does not occur naturally. Similarly, Robertson and O'Malley-Hammersley (2000) find that a common failure in the processes of knowledge transfer is not to take into account the central role played by individuals. Research shows that the fundamental problem faced by organizations is that many employees lack the desire to transfer their knowledge to other members of the organization (Denning, 2006) and that people must be motivated to transfer what they know (Cabrera and Cabrera, 2005; Casse, 1994; Collins and Smith, 2006; Oltra, 2005; Robertson and O'Malley-Hammersley, 2000; Tampoe, 1993).

A recent body of research suggests that knowledge transfer also depends on psychological factors such as affective commitment (Cabrera and Cabrera, 2005; Chang *et al.*, 2007; Hislop, 2003; Thompson and Heron, 2005, 2006). Affective commitment influences general attitudes and behaviors at work and has the strongest relation with outcomes of interest (Brown, 1996; Meyer and Herscovitch, 2001) such as knowledge transfer because it encourages employees to overcome their natural resistance to knowledge sharing (Allen and Meyer, 1996; Hislop, 2003; Meyer *et al.*, 2002), as knowledge is considered a source of power and control (Chennamaneni *et al.*, 2012; Gray, 2001). However, whether commitment levels affect attitudes toward or participation in knowledge transfer is an open question, as little research has been done on this area (Hislop, 2003).

The purpose of this study is to fill this research gap. This study contributes to the knowledge management literature by considering the links between rewards, affective commitment and knowledge transfer. To understand better the antecedents and mediators of knowledge transfer, this study analyzes the effect of the reward system, as one of the main human resource management practices employed by organizations to influence employees' behaviors, on the development of affective commitment and the importance of the affective commitment level as a key determinant of the employees' knowledge transfer. In addition, this study performs an empirical analysis in a social firm setting given the relevance of commitment in these types of organizations.

The remainder of the paper is organized as follows. Section 2 presents the theoretical framework and the research hypotheses. Section 3 explains the sample, variables and method of analysis. Section 4 presents the results and main findings of the empirical analysis. Finally, Section 5 provides conclusions and discusses the main limitations of the study and some lines of further research.

2. Hypotheses

2.1 Rewards and affective commitment

Stimulating knowledge transfer effectively is one of managers' most challenging endeavors (Lin *et al.*, 2012). They must attempt to increase their employees' willingness to share and transfer their knowledge to improve firm efficiency and to avoid knowledge loss if a specific employee leaves the organization. Because willingness to share usually depends on reciprocity, many organizations design a reward system specifically aimed at encouraging their employees to transfer and share their knowledge with others (Bartol and Srivastava, 2002). However, as suggested by Jarvenpaa and Staples (2001), the prosocial behaviors of knowledge transfer are above and beyond those prescribed by job descriptions and are voluntary in nature; thus, people must be motivated to share what they know (Cabrera and Cabrera, 2005; Collins and Smith, 2006; Oltra, 2005; Robertson and O'Malley-Hammersley, 2000). Although previous research shows that rewards systems have positive effects on employees' knowledge transfer (Martín-Cruz *et al.*, 2009; Martín-Pérez *et al.*, 2012;

Quigley *et al.*, 2007), a considerable body of research suggests that the influence of rewards systems on knowledge transfer takes place by means of affective commitment (Cabrera and Cabrera, 2005; Cabrera *et al.*, 2006; Collins and Smith, 2006)[1].

This research stream emphasizes the need to gain employees' affective commitment by their organizations to retain them and to avoid the loss of both tangible and intangible knowledge (Kinnear and Sudderland, 2000). If organizations can induce high levels of affective commitment from their employees, they can achieve positive benefits in terms of increased loyalty, reduced turnover levels and in employees being more willing to provide discretionary effort for the organization (Gallie *et al.*, 2001; Shepard and Mathews, 2000; Storey and Quintas, 2001).

The question that arises is what factors explain affective commitment; in other words, do organizations have ways to develop high levels of affective commitment in their employees? Underlying affective commitment is the notion of exchange, where individuals attach themselves to the organization in return for certain rewards from the organization (Angle and Perry, 1983; Mowday *et al.*, 1979; Steers, 1977). Rewards address the question of what energizes and directs the behavior of people; in this way, rewards facilitate affective commitment by motivating employees to spend time and energy in the organization (Mowday *et al.*, 1979). Because employees feel obligated to reciprocate when their needs are satisfied by the organization (Meyer and Allen, 1997), job characteristics, motivation, job involvement, job satisfaction (Mathieu and Zajac, 1990), work environment (Steers, 1977), participation in decision-making (Meyer and Allen, 1991) and financial and personal rewards (Ko *et al.*, 1997; Mottaz, 1988) all influence affective commitment. In sum, affective commitment is largely a function of rewards that employees receive from their jobs, and as a result, affective commitment should be cultivated among organization members (Nonaka *et al.*, 2001). In the light of the previous discussion, the first hypothesis is proposed:

H1. A higher use of reward systems is positively related to higher levels of employees' affective commitment.

Reward systems can employ extrinsic or intrinsic incentives to motivate employees' desired behaviors. Research considering the influence of rewards on affective commitment provides mixed results. Some studies show that extrinsic rewards are stronger determinants than intrinsic rewards (Angle and Perry, 1983; Kiesler and Sakumura, 1966), whereas other studies find the reverse (Brown, 1969; Buchanan, 1974; O'Reilly and Caldwell, 1980). Thus, both types of rewards must be taken into account to analyze potential differences in employees' propensity to become affectively committed to the organization.

Employees who feel adequately rewarded develop a strong commitment to the organization, remain for extended periods of time and create and transfer knowledge among themselves, thus improving their performance (Martín-Pérez *et al.*, 2012). The literature shows that pay level, pay rules (Dubinky and Levy, 1989), equity in reward distribution (Ogilvie, 1986; Rhodes and Steers, 1981), satisfaction with promotion opportunities (Quarles, 1994; Roberts *et al.*, 1999), supervisor consideration and recognition (DeCotiis and Summers, 1987; Glisson and Durick, 1988), personal importance to the organization (Buchanan, 1974; Steers, 1977), training activities (Camelo-Ordaz *et al.*, 2011), opportunity for advancement (O'Reilly and Caldwell, 1980), participation in decision-making (DeCotiis and Summers, 1987; Rhodes and Steers, 1981) and fairness of performance-based rewards and satisfaction with the evaluation criteria (Brooke *et al.*, 1988; Curry *et al.*, 1986) are positively associated with affective commitment. Therefore, the following hypothesis is proposed:

H1a. A higher use of extrinsic rewards is positively related to higher levels of employees' affective commitment.

Organizations use intrinsic rewards to support processes of attracting committed employees (Handy and Katz, 1998; Merchant *et al.*, 2003; Roomkin and Weisbrod, 1999).

In addition, intrinsic rewards may also increase employees' affective commitment to the organization because they create a desire for self-improvement as a means to support the organization, bringing about the development of "learn to learn" capabilities. Affective commitment develops as the result of experiences that satisfy employees' needs or are compatible with their values (Meyer and Allen, 1991). Factors such as the need for achievement (Angle and Perry, 1983; Steers and Spencer, 1977), affiliation (Morris and Snyder, 1979; Steers, 1977), autonomy (DeCotiis and Summers, 1987; Mottaz, 1988), higher-order need strength (Cook and Wall, 1980; Pierce and Dunham, 1987), personal work ethic (Buchanan, 1974; Kidron, 1978), central life interest in work (Dubin *et al.*, 1975), job challenge (Buchanan, 1974; Meyer and Allen, 1987, 1988), job scope (Buchanan, 1974; Pierce and Dunham, 1987; Steers and Spencer, 1977), opportunity for self-expression (Meyer and Allen, 1987, 1988) and self-direction and responsibility (Mottaz, 1988) have a positive influence on affective commitment. Thus, it is expected:

H1b. A higher use of intrinsic rewards is positively related to higher levels of employees' affective commitment.

2.2 Affective commitment and knowledge transfer

Knowledge transfer, as the process by which individuals mutually exchange their implicit and explicit knowledge (Van den Hooff and de Ridder, 2004), has the potential to increase workers' productivity (Lim *et al.*, 1999), team performance (Cummings, 2004), convert diversity into creativity (Gilson *et al.*, 2013) and improve organizational effectiveness (Gold *et al.*, 2001; Janz and Prasarnphanich, 2003; Lee and Choi, 2003; Wang and Wang, 2012). Thus, managers should encourage their employees to transfer knowledge to create new knowledge and expand the utilization value of the exchanged knowledge (Cummings, 2004; Lin *et al.*, 2012; Van den Hooff and de Ridder, 2004) as a means to enhance their organizations' efficiency (Martín-Cruz *et al.*, 2009).

As knowledge, especially tacit knowledge, is a resource locked in the human mind (Kim and Mauborgne, 1998), knowledge transfer requires willingness on the part of those individuals who possess it to share and communicate it (Empson, 2001; Flood *et al.*, 2001; Kim and Mauborgne, 1998; Robertson and O'Malley Hammersley, 2000; Willman *et al.*, 2001). However, people usually have a natural reluctance to share what they know (Hislop, 2003; Morris, 2001; Thompson and Heron, 2005) because knowledge tends to be seen by employees as a source of power and control (Chennamaneni *et al.*, 2012; Gray, 2001) that carries several benefits, including making employees less substitutable (Chennamaneni *et al.*, 2012; Milne, 2007). In addition, employees may hoard knowledge because they try to avoid potential losses such as organizational influence (Hislop, 2003; Storey and Barnett, 2000; Willem and Scarbrough, 2006), status and rewards (Chua and Lam, 2005; Riege, 2005; Zhou and Chen, 2011), giving away power that cannot be taken back or controlled (Dewitte and de Cremer, 2001) or fear that others may evaluate their knowledge as irrelevant, inaccurate or unimportant to others (Ardichvili *et al.*, 2003).

To achieve the willingness to share knowledge, people need to feel committed to the organization and its goals (Camelo-Ordaz *et al.*, 2011). An individual who is committed to the organization and has trust in both management and coworkers is more likely to be willing to share his or her knowledge (Jarvenpaa and Staples, 2001; Van den Hooff and Van Weenen, 2004). Although affective commitment may substantially affect the willingness of employees to transfer their knowledge (Hislop, 2003), little research has been done on this topic. Storey and Quintas (2001) suggest that employees with high levels of affective commitment are less likely to leave, more likely to be highly motivated and more willing to provide extra discretionary effort, and thus, they are generally more willing to share their knowledge within the organization. Scarbrough and Carter (2000) and McKenzie *et al.* (2001) argue that affective commitment may greatly influence the willingness of workers to share their knowledge. Along the same line, Lin (2006) asserts that affective commitment

is important to tacit knowledge sharing, and Peltokorpi (2004) finds that affective commitment can motivate employees to share and transfer their knowledge.

Empirical evidence that supports the influence of commitment on knowledge sharing and transfer is very scant. Robertson and Hammersely (2000) find that employees with high levels of commitment to the company are more likely to share their knowledge. Van der Bij *et al.* (2003) find a significant impact of individual commitment on levels of knowledge transfer and dissemination. Van den Hooff and de Ridder (2004) conclude that commitment and communication climate are factors that promote or impede the sharing of knowledge within groups and organizations. Cabrera *et al.* (2006) find that individuals who show greater levels of commitment to their organization are more likely to engage in knowledge sharing.

Affective commitment produces a collective sense of identity among individuals in the organization and results in pro-social behaviors (Dewitte and de Cremer, 2001) including voluntarily knowledge sharing. A collective identity is a feeling of belongingness (Cabrera and Cabrera, 2002; Kollock, 1998) that leads to a sense of shared purpose (Raza *et al.*, 2007; Van Steenbergen and Ellemers, 2009). This sense of pride and purpose increases the likelihood that individuals transfer knowledge for the betterment of the organization (Kelloway and Barling, 2000; Priestley and Samaddar, 2007; Riketta and Landerer, 2002). In this way, management should not only create a suitable climate that encourages employees to share their knowledge but also cultivate employees' commitment to the organization and its goals (Hislop, 2003; Kim and Mauborgne, 1998; Nonaka and Takeuchi, 1995; Nonaka *et al.*, 2000; Takeuchi, 2001; Thompson and Heron, 2005) because affective commitment constitutes a necessary condition for employees to be willing to share what they know (Camelo-Ordaz *et al.*, 2011). Therefore, according to previous arguments, the following hypothesis is proposed:

H2. A higher level of affective commitment is positively related to higher knowledge transfer among employees.

3. Methodology

This research was performed through a single case study of a social firm that employs people with disabilities (deafness, blindness, physical and intellectual disabilities). The approach can be described broadly, in Lee's (1999; Lee *et al.*, 1999) term, as theory elaboration because field data are used to draw connections to existing theory in novel ways. This paper attempts to "simplify, reconnect, and redirect theory" (Lee *et al.*, 1999, p. 166) on rewards, commitment and knowledge transfer to elucidate the influence of rewards on commitment and both variables on employees knowledge transfer. In so doing, the authors first provide an overview of the research setting to present data sources and describe the data collection process. Next, variables measurement is explained. Finally, the method employed for analysing the data and testing the research questions is described.

3.1 Sample and data collection

The authors test our hypotheses using data from Grupo Lince, a Spanish social firm, which is staffed by people with disabilities on a percentage of at least 90 per cent. Although a relevant characteristic of these types of firms is their profit-oriented nature, they can be owned by a non-profit organization as is the case with Grupo Lince, which is owned by Asprona, a non-profit organization that takes care of people with mental disabilities. Grupo Lince is a medium-sized social firm with 630 employees and an income level close to €16.5 million. Between 2005 and 2010, it experienced a substantial increase in employees (18.2 per cent; from 533 to 630) and income (59.9 per cent; from €10.3 to €16.5 million). Grupo Lince has four main business areas: gardening, cleaning, mailing/direct advertising and restaurants/catering services. Jobs offered in these businesses are especially suited for

people with disabilities. In addition, the management of Grupo Lince was willing to provide the level of research access required to carry out the study.

This particular setting is appropriate for our research purposes for several reasons. First, social firms mix characteristics of for-profit firms and non-profit organizations. As a result, rewards systems are more complex because both extrinsic and intrinsic rewards motivate employees' behaviors and intrinsic rewards are given more importance than extrinsic rewards. Second, considering that people with disabilities have fewer opportunities for employment, commitment is even more relevant than in traditional for-profit firms. That is, because employees with disabilities are more limited in finding or changing jobs, they tend to be more committed to the organization that offers them the option to work and overcome the barriers that the labor market imposes on people with disabilities. Finally, knowledge transfer is especially important for this kind of employee who performs tasks in teams, requiring complementary knowledge to be shared to enable effectiveness in joint work.

Data for the study are collected from the employees of the different business areas of Grupo Lince, as they are the appropriate informant for our research questions. To obtain the information, a questionnaire was devised on the basis of a thorough literature review. Survey items were carefully constructed, based on prior research, and adapted to our research setting (i.e. people with disabilities) to reduce item ambiguity. The adaptation process, in close collaboration with organization middle management, took almost two months. After this step, a pre-test was performed by 25 employees with disabilities representing the different business areas and the four kinds of disabilities involved (intellectual, blindness, deafness and physical). The result of this pre-test was successful, and the authors concluded that all employees with disabilities are able to perform the same questionnaire. Data collection was completed from April to August 2010 and yielded 227 completed responses with an overall response rate of 36 per cent and no significant differences between different business areas, ensuring the confidentiality of respondents.

3.2 Variables

Variables used to operationalize the constructs of extrinsic rewards, intrinsic rewards, affective commitment and knowledge transfer are based on prior empirical studies and mainly adapted to a non-profit setting. All constructs are measured by means of multiple items using employees' perceptions rated on a Likert-type scale ([Appendix A1](#)).

Extrinsic rewards are measured using five items (EREW1-EREW5) based on prior empirical studies: fixed salary increases (EREW1; [Balkin and Gomez-Mejia, 1990](#); [Brickley and Van Horn, 2002](#); [De Gieter et al., 2006](#)), training (EREW2; [De Gieter et al., 2006](#); [Gomez-Mejia et al., 2004](#); [Martín-Pérez et al., 2012](#)), promotion (EREW3; [De Gieter et al., 2006](#); [Delaney and Huselid, 1996](#); [Martín-Cruz et al., 2009](#)), flexibility (EREW4; [Collins and Yeager, 1988](#); [De Gieter et al., 2006](#); [Martín-Pérez et al., 2012](#); [Tortia, 2008](#)) and organizational recognition (EREW5; [De Gieter et al., 2006](#); [Delaney and Huselid, 1996](#); [Martín-Cruz et al., 2009](#); [Tortia, 2008](#)), measured along a Likert-type scale of 1 (reward is hardly used to motivate employees) to 5 (reward is used to a very large extent to motivate employees).

Intrinsic rewards are measured using four items (IREW1-IREW4) rated on a Likert-type scale of 1 (reward is hardly used to motivate employees) to 5 (reward is used to a very large extent to motivate employees): involvement and sense of belonging (IREW1; [De Gieter et al., 2006](#); [Leete, 2000](#); [Martín-Cruz et al., 2009](#)), job security (IREW2; [De Gieter et al., 2006](#); [Delaney and Huselid, 1996](#); [Tortia, 2008](#)), autonomy in the performance of the activities (IREW3; [Amabile et al., 1994](#); [De Gieter et al., 2006](#); [Martín-Cruz et al., 2009](#)) and self-confidence and self-fulfillment (IREW4; [De Gieter et al., 2006](#); [Martín-Pérez et al., 2012](#); [Tortia, 2008](#)).

Affective commitment is measured by means of an adapted version of the four items (ACOMMIT1-ACOMMIT4) proposed by [Meyer and Allen \(1991, 1997\)](#) and rated on a five-point Likert scale (1 = totally disagree, 5 = totally agree). This construct includes

items, such as employees would be very happy to spend the rest of their career with this organization (ACOMMIT1); employees really feel as if this organization's problems were their own problems (ACOMMIT2); employees are emotionally attached to this organization (ACOMMIT3); and this organization has great personal meaning for their employees (ACOMMIT4).

Knowledge transfer is measured (KRTS1-KRTS7) using an adapted version of the instruments offered by [Bock et al. \(2005\)](#), [Ko et al. \(2005\)](#) and [Zárraga and Bonache \(2003\)](#) and asks whether employees actively share ideas and opinions (KTRS1); employees actively take into account other employees' opinion before making important decisions (KTRS2); the organizational environment is cooperative, fosters mutual respect and there is friendship and interpersonal trust among employees (KTRS3); there are relationships among employees that foster a better understanding of organizational objectives, work methods and so on (KTRS4); employees keep in frequent contact with other colleagues (KTRS5); employees actively use manuals, reports and the needed information to improve their work performance (KTRS6); and employees actively share documents, procedures and information (KTRS7). Each item is ranked on a Likert-type scale ranging from 1 (none) to 5 (much).

3.3 Data analysis

This study uses a partial least squares (PLS) approach to test the research hypotheses. PLS uses an iterative procedure that combines simple and multiple regressions by ordinary least squares to estimate measurement and structural parameters, thus avoiding any distributional assumption of the observed variables ([Rodríguez-Pinto et al., 2008](#)). In addition, owing to the partial nature of this methodology, where the model parameters are estimated in blocks, the sample size required in PLS is much smaller. The model includes both latent (measured with reflective indicators) and emergent (formative) constructs. In particular, extrinsic and intrinsic rewards are composites formed by the corresponding observed variables, whereas affective commitment and knowledge transfer constitute unobserved variables reflected in a set of manifest variables.

The authors estimate the model using SmartPLS 2.00 M3 ([Ringle et al., 2005](#)). Because traditional parametric tests are inappropriate when no assumption is made about the distribution of the observed variables, the level of statistical significance of the coefficients of both the measurement and the structural models is determined through a bootstrap resampling procedure (500 subsamples are randomly generated). Structural evaluation is conducted by examining the size and significance of the path coefficients and the R^2 values of the dependent variables.

4. Results

The authors test the research hypotheses using information obtained by means of a questionnaire that was distributed to a sample of 227 employees with some kind of disability. These employees work for a social firm that is owned by a non-profit organization that provides services of cleaning, gardening, catering and direct advertising.

[Table I](#) shows that all the items concerning intrinsic rewards have an average value close to 4 (on a scale ranging from 1 to 5), which is substantially higher than the average for extrinsic rewards. These findings are in line with previous studies, showing that intrinsic rewards are more important than the extrinsic rewards for non-profit organizations staff ([Martín-Cruz et al., 2009](#); [Martín-Pérez et al., 2012](#)).

Items related to affective commitment have values close to or above 4 (on a scale ranging from 1 to 5), reflecting the high level at which employees are emotionally attached to and involved in the organization. All knowledge transfer items, also measured on a Likert-type scale ranging from 1 to 5, have values significantly above 4. This result shows that in this non-profit organization, with a workforce composed of

Table I Descriptive statistics and convergent validity

| Construct/items | Mean | SD | Loading | Weights | t Statistic |
|---|------|------|---------|---------|-------------|
| <i>Extrinsic rewards</i> | | | | | |
| EREW1 | 2.26 | 1.21 | – | 0.944 | 4.855 |
| EREW2 | 3.34 | 1.18 | – | –0.192 | 0.002 |
| EREW3 | 2.41 | 1.24 | – | –0.132 | 0.647 |
| EREW4 | 2.84 | 1.30 | – | 0.352 | 1.523 |
| EREW5 | 3.76 | 1.04 | – | 0.183 | 0.002 |
| <i>Intrinsic rewards</i> | | | | | |
| IREW1 | 3.80 | 0.98 | – | 0.577 | 0.017 |
| IREW2 | 4.11 | 0.92 | – | 0.016 | 0.596 |
| IREW3 | 3.92 | 1.01 | – | –0.007 | 0.440 |
| IREW4 | 3.98 | 0.92 | – | 0.554 | 0.013 |
| <i>Affective commitment</i> ($\rho_c = 0.89$, AVE = 0.66) | | | | | |
| ACOMMIT1 | 4.32 | 0.81 | 0.861 | | 5.639 |
| ACOMMIT2 | 3.77 | 1.01 | 0.891 | | 5.730 |
| ACOMMIT3 | 4.16 | 0.92 | 0.665 | | 3.934 |
| ACOMMIT4 | 3.80 | 0.98 | 0.813 | | 8.343 |
| <i>Knowledge transfer</i> ($\rho_c = 0.93$, AVE = 0.63) | | | | | |
| KTRS1 | 4.47 | 0.65 | 0.759 | – | 5.299 |
| KTRS2 | 4.48 | 0.63 | 0.868 | – | 5.599 |
| KTRS3 | 4.53 | 0.65 | 0.830 | – | 5.626 |
| KTRS4 | 4.38 | 0.80 | 0.715 | – | 6.191 |
| KTRS5 | 4.16 | 0.92 | 0.735 | – | 4.369 |
| KTRS6 | 4.20 | 0.87 | 0.827 | – | 6.589 |
| KTRS7 | 4.21 | 0.85 | 0.861 | – | 5.991 |
| Notes: EREW = extrinsic rewards; IREW = intrinsic rewards; ACOMMIT = affective commitment; KTRS = knowledge transfer; AVE = average variance extracted | | | | | |

people with disabilities, knowledge transfer is critical for employees to provide quality services to their users.

Following the two-step approach suggested by Anderson and Gerbing (1988), before testing and assessing the structural model, the reliability of individual reflective items and the corresponding constructs as well as the convergent and discriminant validity of the measures are analyzed. Table I shows that all reflective item loadings are significant and greater than 0.6. The authors evaluate composite reliability using the internal consistency measure (ρ_c) developed by Fornell and Larcker (1981) and the average variance extracted of each latent construct. The reflective construct exceeds the conditions of ρ_c greater than 0.7 and average variance extracted greater than 0.5.

Discriminant validity can be obtained by calculating the cross-loadings. Table II verifies that each reflective item loads more on the construct that it intends to measure than on any other construct and that each latent variable relates more to its own manifest variables than to the indicators of other constructs. For formative variables (intrinsic and extrinsic motivation), Table I reports weights instead of loadings. Item weight represents the variable's relative contribution in the formation of the corresponding variable. Formative indicators are neither assumed nor required to be correlated; therefore, traditional measures of internal consistency and validity assessment are inappropriate and illogical (Rodriguez-Pinto *et al.*, 2008). Table III presents correlations of all variables.

Figure 1 summarizes the results of the PLS analysis performed to test the structural model. In particular, the figure shows the standardized coefficients (β), the significance level (t statistic) and the value of the R^2 of the dependent variable. Results show a direct, positive and significant relation between intrinsic rewards and affective commitment ($H1b$: $\beta = 0.922$, $p < 0.001$), thus giving support to $H1b$: the use of intrinsic rewards has a positive influence on organizational employees' affective commitment to the organization. Giving

Table II Discriminant validity (cross-loadings)

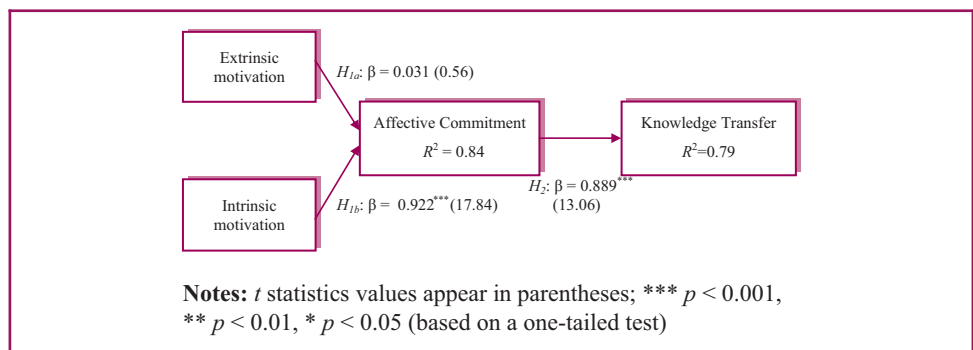
| Construct/items | EREW | IREW | ACOMMIT | KTRS |
|-----------------|-------------|-------------|-------------|-------------|
| EREW1 | 0.89 | 0.18 | 0.18 | 0.19 |
| EREW2 | 0.71 | -0.02 | 0.03 | 0.05 |
| EREW3 | 0.67 | -0.01 | 0.02 | 0.03 |
| EREW4 | 0.58 | 0.17 | 0.05 | 0.02 |
| EREW5 | 0.61 | 0.07 | 0.02 | 0.06 |
| IREW1 | 0.21 | 0.89 | 0.49 | 0.59 |
| IREW2 | 0.04 | 0.58 | 0.02 | 0.12 |
| IREW3 | 0.34 | 0.67 | 0.02 | 0.02 |
| IREW4 | 0.23 | 0.88 | 0.70 | 0.58 |
| ACOMMIT1 | 0.23 | 0.78 | 0.86 | 0.79 |
| ACOMMIT2 | 0.09 | 0.75 | 0.89 | 0.80 |
| ACOMMIT3 | 0.11 | 0.47 | 0.67 | 0.57 |
| ACOMMIT4 | 0.21 | 0.68 | 0.81 | 0.69 |
| KTRS1 | 0.07 | 0.52 | 0.58 | 0.76 |
| KTRS2 | 0.13 | 0.75 | 0.82 | 0.87 |
| KTRS3 | 0.23 | 0.72 | 0.74 | 0.83 |
| KTRS4 | 0.12 | 0.55 | 0.62 | 0.72 |
| KTRS5 | 0.06 | 0.59 | 0.63 | 0.74 |
| KTRS6 | 0.16 | 0.62 | 0.66 | 0.83 |
| KTRS7 | 0.23 | 0.68 | 0.73 | 0.86 |

Notes: EREW = extrinsic rewards; IREW = intrinsic rewards; ACOMMIT = affective commitment; KTRS = knowledge transfer; bold data show that all items load higher on their respective variable than they on other variables

Table III Latent variables correlations

| Construct/items | EREW | IREW | ACOMMIT | KTRS |
|-----------------|--------|--------|---------|--------|
| EREW | 1.0000 | | | |
| IREW | 0.2545 | 1.0000 | | |
| ACOMMIT | 0.2039 | 0.9141 | 1.0000 | |
| KTRS | 0.1963 | 0.8401 | 0.8891 | 1.0000 |

Notes: EREW = extrinsic rewards; IREW = intrinsic rewards; ACOMMIT = affective commitment; KTRS = knowledge transfer

Figure 1 Structural model results

employees intrinsic rewards, such as autonomy, job security, self-confidence and a sense of belonging, influences the loyalty of employees to remain with and increase their level of affective commitment to their company. This result is expected, given that among social firm workers (social firms are more similar to a non-profit than to a for-profit firm), intrinsic rewards are the most important source of motivation (Martín-Cruz *et al.*, 2009; Martín-Pérez *et al.*, 2012), extrinsic rewards level are below market average (Handy and Katz, 1998; Mirvis and Hackett, 1983; Preston, 1989; Ruhm and Borkoski, 2003) and people are more

involved in the organization due to intrinsic reasons rather than for financial rewards (Martín-Cruz *et al.*, 2009).

H1a is not supported: the influence of extrinsic rewards on affective organizational commitment is not significant (*H1a*: $\beta = 0.031$, *n.s.*). This result is not consistent with previous studies (Dubinky and Levy, 1989; Quarles, 1994; Roberts *et al.*, 1999). The explanation may be the setting in which the analysis is performed, that is, a social firm in which employees are less motivated by extrinsic rewards. This finding should not be interpreted to mean that extrinsic rewards are of no importance to employees. If extrinsic rewards have no importance, the propensity for employees to leave the organization and reduce their level of productivity would increase, and consequently, organizational effectiveness would decrease. Rather, this result suggests that in addition to traditional extrinsic rewards such as compensation, most employees require autonomy, responsibility, job challenge and the fulfillment of a higher-order need to develop affective commitment to their organizations.

The results are consistent with *H2*: employees' affective commitment positively influences knowledge transfer (*H2b*: $\beta = 0.889$, $p < 0.001$). If employees develop high levels of affective commitment to the organization, they will stay with the organization for a long time, providing them with opportunities to share their knowledge with other employees and build their skill base and expand their experiences to the benefit of the organization. The results obtained in the empirical analysis show that affective commitment is a powerful factor for knowledge transfer among employees within the organization, reinforcing similar findings of previous studies (Camelo-Ordaz *et al.*, 2011; Casimir *et al.*, 2012). Reward systems, as human resource management practices, are important to encourage employees' knowledge transfer, but this influence takes place by means of the creation of a context in which employees can develop affective commitment to their organization.

To conclude, the model proposed in this study shows an acceptable capacity to explain the influence of both intrinsic and extrinsic rewards on affective commitment and how affective commitment influences knowledge transfer (see the R^2 values of these variables in Figure 1). In addition, the indirect effect of intrinsic rewards ($\hat{a} = 0.85$, $p < 0.001$) on knowledge transfer is positive and significant as expected, given the results of previous empirical studies (Martín-Cruz *et al.*, 2009; Martín-Pérez *et al.*, 2012). However, the indirect effect of extrinsic rewards ($\hat{a} = 0.037$, $p < 0.66$) on knowledge transfer is positive but not significant. Considering that prior research is not in full agreement about the effect of extrinsic rewards on knowledge sharing, our results provide support to those studies that shown no relation between extrinsic rewards and knowledge transfer. Thus, the authors find that affective commitment mediates the relation between rewards and knowledge transfer among organizational employees.

5. Conclusions, implications, limitations and future extensions

In the age of a knowledge-intensive economy, where organizations compete in a continuously changing environment, knowledge is considered a critical resource for organizational effectiveness. Owing to the relevance of knowledge transfer for several important outcomes, organizations should try to create the conditions that encourage employees to share their knowledge because the knowledge transfer process does not take place smoothly, as many employees lack the desire to transfer their knowledge to other members of the organization. More research to identify the factors that foster employees' knowledge transfer is needed to fill this gap.

The specific objectives of this paper are to assess the relative importance of intrinsic and extrinsic rewards as determinants of affective commitment and to examine the influence of affective commitment as a key antecedent of knowledge transfer. The findings show that rewards systems are important to motivate employees' desired behaviors regarding knowledge transfer, but this influence does not take place in a direct way. Reward systems

are the necessary condition to support the development of employees' affective commitment, which, in turn, increases employees' willingness to share their knowledge with other workmates.

In addition, these different kinds of rewards have different impacts. Intrinsic rewards are by far the most powerful determinants of affective commitment, explaining a greater proportion of this variable than extrinsic rewards. By comparison, extrinsic rewards have a smaller influence on affective commitment and are non-significantly related. This result is very interesting because, traditionally, efforts to improve employees' affective commitment have been extrinsically orientated because organizations possess more control over extrinsic rewards than over intrinsic ones (Angle and Perry, 1983). However, results show that extrinsic rewards such as pay, opportunities for advancement and training are less effective than intrinsic rewards (related primarily to autonomy and job content) to develop employees' affective commitment.

This study also analyzes the influence of affective commitment in encouraging knowledge-sharing behaviors. Employees who are more involved and identified more with organizational goals and values stay in the organization for a long time, reduce their turnover intentions and are more willing to share their knowledge to the benefit of the organization. An employee who has developed a high level of affective commitment is more prone to transfer his or her knowledge. Consequently, the potential loss of tacit knowledge for the organization is reduced if this employee leaves the organization.

In terms of implications for practice, when managers are seeking ways to encourage employees' knowledge transfer, which makes efficiency over time possible, even if employees retire or resign from the organization, they must understand that creating a suitable climate that motivates employees to transfer their knowledge is not sufficient; they must also cultivate employees' affective commitment to the organization. Affective commitment is based on a reciprocal relationship wherein the employee contributes to the organization with his or her competences in return for certain rewards from organization. In so doing, managers should make sure that their employees perceive that their organizations value them. They should provide their employees not only with financial rewards but also with suitable work conditions that allow them to progress both personally and professionally. Employees need to feel a sense of well-being associated with the activities performed.

Although rewards are important to guide employees' behavior, organizations should apply a mix of extrinsic and intrinsic rewards to achieve the desired goals because in today's work environment, employees are more concerned about intrinsic rewards. However, organizations tend to apply extrinsic rewards because they are easier to control than intrinsic rewards, which often depend on an individual's characteristics (e.g. self-fulfillment, self-confidence, involvement, autonomy). Despite this difficulty, managers should make an effort to create a balanced reward system so that extrinsic and intrinsic rewards act as complementary processes to develop high level of employees' affective commitment.

The present study has some limitations. First and foremost, this study was conducted in a single Spanish organization, which allows a deeper understanding of the phenomenon under study, but generalizability of the findings cannot be determined. Nothing suggests that the relations observed are unique to the organization or country, but generalizability of the findings should be made with caution. Additional research across different countries and organizations is required to generalize the findings. Second, data are cross-sectional and collected via self-administered questionnaires. Although survey-based data collection is considered a useful tool in exploratory studies and is one of the most common research methods used in organizational behavior (Spector, 1994), the cross-sectional nature of the design does not allow causality to be inferred. Longitudinal studies are needed in this area of research. Third, this study relies mainly on one dimension of organizational commitment, namely, affective commitment. Future studies should examine the three-component model

of organizational commitment proposed by Meyer and Allen (1997). Finally, even though PLS is a well-suited methodology for the purposes of this study, future research should extend the empirical model of this study by using other methodologies such as the structural equations model and investigate the relative impact of knowledge transfer on organizational performance.

Note

1. Following Meyer and Allen's (1997) model, organizational commitment has at least three components – affective, continuance and normative – each of which may have a different influence on knowledge transfer. The affective component is more related to the willingness to transfer knowledge because affective commitment refers to an employee's emotional attachment to, identification with and participation and involvement in the organization (Meyer and Smith, 2000). As such, it provides employees with the motivation to do more than what is formally required of them (Choi, 2006; Van den Hooff *et al.*, 2003) over a sustained period (Van Steenbergen and Ellemers, 2009).

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Appendix

Table A1 Questionnaire: items are measured along a Likert-type scale of 1 to 5

| | |
|----------------------|--|
| Extrinsic rewards | Fixed salary increases (EREW1) labor stability and continuity (EREW1) Training opportunities offered by your organization (EREW2) The organization offers me the possibility for promotion (EREW3) Flexibility to establish total/partially the work schedule (EREW4) The organization recognizes expressly my job (EREW5) |
| Intrinsic rewards | I have sense of belonging regarding the organization (I consider myself a part of the organization, feel involved, etc.) (IREW1) The organization offers labor stability and continuity in my job (IREW2) The organization offers me the possibility for promotion (IREW3) I have autonomy in my job and I can contribute with my ideas (IREW3) The organization allows me to grow as a person, improve self-confidence, overcome my weakness, mature, foster my self-esteem (IREW4) |
| Affective commitment | Employees would be very happy to spend the rest of their career with this organization (ACOMMIT1) Employees really feel as if this organization's problems were their own problems (ACOMMIT2) Employees are emotionally attached to this organization (ACOMMIT3) This organization has great personal meaning for their employees (ACOMMIT4) |
| Knowledge transfer | Sharing of ideas and opinions among employees (KTRS1) Taking into account other employees' opinions before making important decisions (KTRS2) The organizational environment, in which their activity is embedded, is cooperative, and fosters mutual respect, and there is friendship and interpersonal trust among employees (KTRS3) Having relationships among employees that fosters a better understanding of organizational objectives, work methods, and so on (KTRS4) Maintaining frequent contacts among employees (KTRS5) Using manuals, reports, and the needed information to improve their work performance (KTRS6) Sharing of reports, documents, and other types of information among employees (KTRS7) |

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