

How do servant leaders promote radical innovation? The role of organizational learning capability

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Abstract

Through structural equations, this study provides empirical evidence of the positive effect of servant leadership on radical innovation, using organizational learning capability as a mediator variable. The study is based on a sampling frame of 402 Spanish companies, which are characterized by the excellent management of their human resources. 142 different firms participated in the study, and 2 questionnaires were obtained per company. Data were collected between 2010 and 2015. Human resource and innovation managers participated by answering the questionnaires during telephone interviews. All the hypotheses were validated. Servant leadership has a positive effect on organizational learning capability, while the effect of the latter construct on radical innovation is also positive. This study has implications for the literature on leadership, innovation and organizational learning. In addition, it has practical applications, suggesting how to foster innovative organizational performance by improving workplace conditions.

Key words

Servant leadership; leadership; organizational learning; radical innovation; innovation.

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Innovation is essential to guarantee the long-term survival and success of firms

1. Introduction

In a turbulent and complicated competitive context, innovation is essential to guaranteeing the long-term survival and success of firms (Rese & Baier, 2011). For this reason, it is important to disentangle the factors that promote innovation within companies, or that make some companies more innovative than others. The academic literature has differentiated among different innovation typologies which, in turn, have different antecedents and consequences. Hence, it is necessary to study the promoters and results of the different innovation typologies separately. One of the best-known classifications distinguishes between radical and incremental innovation (Marvel & Lumpkin, 2007). Although the main features of these typologies of innovation will be explained in the literature review section, it is worth mentioning that the present research focuses on radical innovation, due to the important benefits of radicalness for organizations and national economies (Büschgens, Bausch & Balkin, 2013).

Leadership is one of the central factors that facilitate innovation. Leaders promote climates in which followers feel protected to take risks and experiment, which may trigger innovation (Aragón-Correa, García-Morales & Cordon-Pozo, 2007; Nutt, 2002). However, there are different types of leadership, and their effects within organizations are not always positive (e.g. Kiliç & Günsel, 2019). This is one of the reasons why there is a demand for new leadership styles. In this sense, unethical behaviors (Sendjaya, Sarros & Santora, 2008) and the prevalence of leaders focused on self-interest have shifted attention towards leadership styles that are people-oriented (Panaccio, Henderson, Liden, Wayne & Cao, 2015). This shift in the study of leadership has been reflected by an increased interest in servant leadership. These leaders highlight the followers' needs (Barbuto & Wheeler, 2006; Peterson, Galvin & Lange, 2012) and manage organizations ethically (Rodríguez-Carvajal, de Rivas, Herrero, Moreno-Jiménez & Van Dierendonck, 2014).

Williams, Brandon, Hayek, Haden and Atinc (2017) stated that servant leadership might promote creativity and innovation, because it serves the needs of the followers in an authentic and empowering manner. Servant leaders encourage innovation by promoting employee participation in decision making, through which they may share new ideas and renew their knowledge, giving a voice to the employees. This type of behavior emphasizes expressing new ideas to improve the current situation (Ruiz-Palomino, Hernández-Perlines, Jiménez-Estévez & Gutiérrez-Broncano, 2019). Hughes, Lee, Tian, Newman and Legood (2018) have recently called for more research on the relationship between leadership and innovation, highlighting that servant leadership, which promotes creativity and innovation, has received less attention than other classic leadership styles, such as transformational leadership. Although there are some studies that demonstrate the importance of servant leadership in promoting innovation in the organizational context (e.g. Ruiz-Palomino et al., 2019; Yoshida, Sendjaya, Hirst & Cooper, 2014), the consequences of this leadership style on radical innovation have yet to be considered. Taking into account the important outcomes that may be derived from radical innovations and the growing importance of servant leadership in the business field, the relationship between these two concepts is worthy of study.

On the other hand, when studying leadership, it is important to consider the organizational context in which it takes place; because it does not occur in a vacuum, its effects should not be studied in an isolated manner. For instance, Moser, Dawson and West (2019) suggest that additional factors must be considered when analyzing the influence of leadership on innovation. Many studies follow the same approach and explain the consequences of leadership through mediating variables. In this vein, organizational learning is one of those mediating variables that previous studies have highlighted as essential in the relationship

Leadership is one of the main factors that facilitate innovation

between leadership and innovation (e.g. Domínguez-Escrig, Mallén, Chiva & Lapiedra, 2016). Despite the importance of organizational learning in deciphering the relationship between leadership and innovation, little is known about how servant leaders promote it, with just a few examples in the academic literature (e.g. Choudhary, Akhtar & Zaheer, 2013). To the best of our knowledge, this is the first study to analyze the effects of servant leaders on organizational learning capability, as conceptualized by Chiva, Alegre and Lapiedra (2007).

Accordingly, the present study hypothesizes that organizational learning capability mediates the positive relationship between servant leadership and radical innovation (Figure 1). All told, the gaps addressed in this study are twofold: 1) it tests the effects of servant leadership on organizational learning capability for the first time, and 2) it is the first research to focus on the effects of servant leaders in facilitating radical innovation, highlighting the mediating role of organizational learning capability. The following sections present a review of the literature on servant leadership, organizational learning capability and radical innovation. Taking into account previous research, relationships among these constructs have been established. Details of the methodology and results are also provided. The study finishes with some conclusions, suggestions for future research and an evaluation of the limitations.

2. Literature review

2.1. Servant leadership

Servant leadership is an ethical type of leadership that focuses on people and emphasizes the needs of the followers (Van Dierendonck & Nuijten, 2011). Barbuto and Wheeler (2006) have identified five factors that characterize servant leadership: altruistic calling, emotional healing, persuasive mapping, wisdom and organizational stewardship. They describe altruistic calling as the desire to make a positive difference in other people's lives, putting others' interests ahead of one's own. Emotional healing helps followers to recover from hardship or trauma. Persuasive mapping describes how leaders can encourage followers, offering compelling reasons to act. Wisdom is related to the ability to observe and anticipate the consequences of one's actions. Organizational stewardship is focused on how leaders positively contribute to society, accepting responsibility for the well-being of the community and being mindful of the impact of one's decisions on future generations.

2.2. Organizational learning capability

Organizational learning capability involves "the managerial practices that facilitate organizational learning or the conditions and enablers that can help an organization to become a learning organization" (Goh & Richards, 1997:577). Chiva et al. (2007) established five dimensions to measure organizational learning capability: experimentation, risk taking, interaction with the external environment, dialogue and participative decision-making. They defined experimentation as the degree to which new ideas and suggestions are attended to and dealt with sympathetically. Risk taking is the tolerance of ambiguity, uncertainty, and errors. Interaction with the external environment considers the relations with factors that are beyond the direct control of the organization, such as other competitors, and the economic, social, monetary and political/legal systems. Dialogue is defined as a sustained collective inquiry into the processes, assumptions and certainties that make up everyday experience. Participative decision-making is related to the level of influence employees have on the decision-making process.

2.3. Radical innovation

One of the most widely recognized and studied classifications in the academic field is the differentiation made between incremental and radical innovation (e.g. Marvel & Lumpkin,

There is an increasing demand for organizations to be people-oriented and managed ethically

2007). Radical innovations advance the price/performance frontier by much more than the existing rate of progress; they also render obsolete and negate existing competencies, skills and know-how. Incremental innovations are those that improve the price/performance advance at a rate consistent with the existing technical trajectory, and they reinforce existing competencies, skills and know-how (Gatignon, Tushman, Smith & Anderson, 2002: 1107). Although the development of radical innovations is risky, uncertain and complicated, it can also provide many benefits, such as long-term success, or better financial and non-financial performance (e.g. Domínguez-Escrig, Mallén, Lapiedra & Chiva, 2019; Gatignon et al., 2002).

3. Hypotheses

3.1. Servant leadership and organizational learning capability

Leadership is one of the factors that facilitates organizational learning (Vera & Crossan, 2004), and in recent decades different studies have analyzed the impact of different leadership styles, such as transformational or transactional leadership, and leader behaviors, such as altruistic behaviors, on it (e.g. Kim & Park, 2019; Mallén, Chiva, Alegre & Guinot, 2016). However, little is known about the impact of servant leadership on organizational learning, and to the best of our knowledge, no research has analyzed its effect on organizational learning capability. For instance, Choudhary et al. (2013) analyzed organizations in the profit-oriented service sector of Pakistan and showed that servant leadership promotes organizational learning, suggesting that by taking care of the needs of the followers, organizational knowledge may be increased. However, these authors concluded that its effect on learning was less than that of transformational leadership. The results of this study are limited to a specific sector and cultural context, and the same authors demanded more research on these relationships to elucidate whether this difference remains under other circumstances.

On the other hand, the different dimensions that make up servant leadership (altruistic calling, emotional healing, persuasive mapping, wisdom and organizational stewardship), according to the conceptualization proposed by Barbuto and Wheeler (2006), offer some insights into the potential relationship between servant leadership and organizational learning capability. To shed light on this relationship, it would be interesting to analyze the impact of the different dimensions separately. For instance, Mallén et al. (2016) positively related altruistic leader behaviors to the organizational learning capability because these leaders provide a safe and supportive environment in which employees can take risks, make mistakes and dialogue. In addition, negative experiences within the organizational context may lead to negative emotions, such as anxiety or disappointment. Understanding and addressing the emotions of followers creates a positive workplace climate (Jit, Sharma & Kawatra, 2017) that may facilitate learning. In this vein, Antonacopoulou and Gabriel (2001) state that emotions are essential for organizational processes, such as communication or decision making. Besides, according to stewardship theory, leaders promote open communication, collectivistic behaviors, participative organizations, low-power distance, an involvement orientation, trustworthy relationships and reinforce external ties, among other aspects (Davis, Schoorman & Donaldson, 1997; Dumay, La Torre & Farnetti, 2019; Nihof, Schaveling & Zalesky, 2019), which are factors that facilitate organizational learning (e.g. Chiva et al., 2007; Guinot, Chiva & Mallén, 2013). Finally, Nonaka and Takeuchi (2011) suggest that wise leaders facilitate interactions within organizations, promote information sharing, boost communication, bring together people with conflicting goals and involve employees and followers, distributing leadership as much as possible throughout the organization. In this way, they may renew knowledge and enhance learning.

Consequently, the first hypothesis of the study is:

H1: Servant leadership is positively related to the organizational learning capability.

3.2. Organizational learning capability and radical innovation

Previous research has demonstrated the importance of organizational learning in order to innovate (Alegre & Chiva, 2008), and some empirical studies have shown its positive impact on radical innovation. For instance, Domínguez-Escrig, Mallén, Lapiedra and Chiva (2018) conclude that the organizational learning capability is positively related to radical innovation and mediates the relationship between high-quality innovation systems and this type of innovation. Moreover, the different factors that make up this construct (experimentation, risk taking, interaction with the external environment, dialogue and participative decision-making) appear to have a positive relationship with innovation in general, and radicalness in particular. For example, Chang, Chang, Chi, Chen and Deng (2012) consider that experimentation is essential in order to foster radical innovation, because it involves moving into unknown territories. López-Cabrales, Medina, Lavado and Cabrera (2008) positively relate risk taking to radical innovation, because people are more creative if they are encouraged to engage in these behaviors. Sheng and Chien (2016) state that knowledge from external sources fuels the development of radical innovation, as it renews current ideas. Slater, Mohr and Sengupta (2014) argue that communication facilitates radicalness, because members of the organization share ideas and different points of view. Finally, Hurley and Hult (1998) conclude that participative groups are more innovative, as members are encouraged to learn and develop new ideas.

Therefore, the second hypothesis of the study is:

H2: The organizational learning capability has a positive effect on radical innovation.

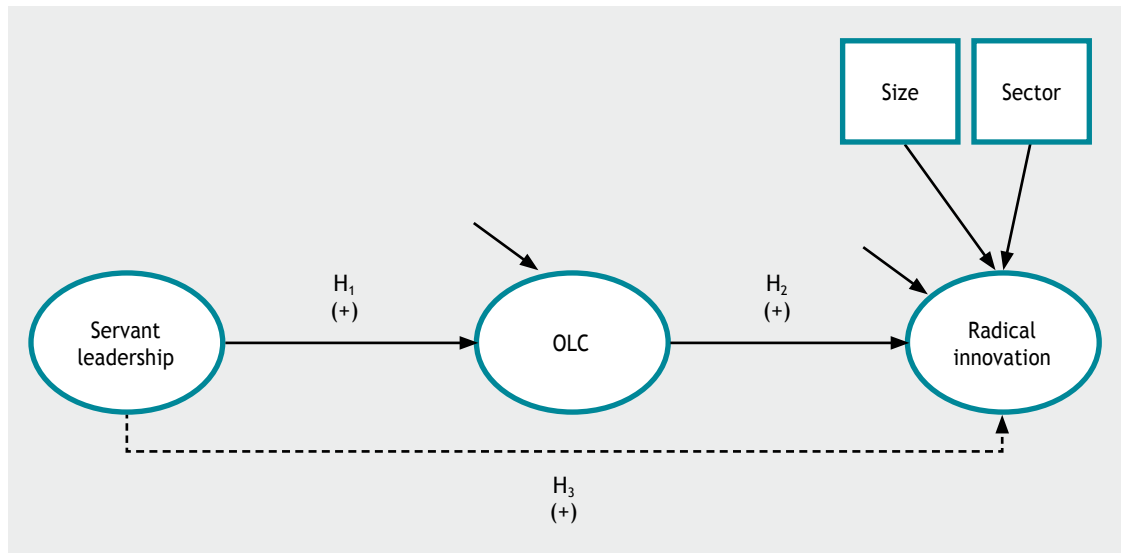
3.3. Servant leadership and radical innovation: the mediating role of organizational learning capability

Leadership is crucial to promote innovation within organizations. Previous studies have positively related different leadership styles with innovation. However, in the light of the heterogeneous results achieved (Rosing, Frese & Bausch, 2011), the effects of leaders on innovation should be studied in conjunction with complementary processes. Organizational learning is one of the factors that has been highlighted as being essential to mediate the effect of leadership styles or leader behaviors on innovation (e.g. Domínguez-Escrig et al., 2016). O'Malley, O'Dwyer, McNally and Murphy (2014) state that radical innovations demand an organizational context that facilitates communication, risk-taking or cooperation, which are features of the organizational learning capability. Considering that servant leaders, as suggested in Hypothesis 1, may boost the conditions that enhance participation in decision-making, dialogue, experimentation, interaction with the external environment and risk taking, it is reasonable to believe that servant leaders may promote the conditions under which radical innovation flourishes.

Therefore, the final hypothesis is:

H3: The positive effect of servant leadership on radical innovation is mediated by the organizational learning capability.

Figure 1
Conceptual model and hypotheses



4. Research methodology

4.1. Data collection

The basis of the study was a sampling frame of 402 Spanish companies with excellent management of human resources. The sampling frame was composed of companies from different databases and lists: Great Place to Work, the CRF Institute's 'Top Companies to Work For' and 'Top Employers', and the Merco Personas list of best companies to work for, from the journal *Actualidad Económica*. 142 different companies participated in the study. In terms of the number of companies, this represents a response rate of 35.3%.

In each company, the questionnaire was addressed to human resources and innovation managers, with at least two years of experience in the company. Each type of manager was asked to answer a different questionnaire: human resources managers responded to 142 questionnaires related to servant leadership and organizational learning capability, and innovation managers responded to another 142 questionnaires, with questions related to radical innovation. Human resources managers are a reliable source to evaluate leadership styles and learning within organizations (e.g. Domínguez-Escrig et al., 2016). On the other hand, 'innovation managers' is a broad term that includes product managers and R&D managers, depending on the people who are in charge of the innovation activities in each organization. These professional profiles have been used in previous research studies on radical innovation (e.g. Domínguez-Escrig et al., 2018). The anonymity of the participants was guaranteed in order to promote honest responses and facilitate the reliability of the results and conclusions.

The questionnaire administered to human resources managers consisted of 37 items measured according to a five-point Likert scale, while innovation managers answered 6 items measured according to a seven-point Likert scale. These items were expressed in a positive sense. Respondents showed whether they agreed or disagreed with the ideas

Servant leadership is an ethical type of leadership focused on people and emphasizing the needs of the followers

expressed in the items. The survey was administered via telephone interviews, as this technique facilitates contact with managers.

To avoid common method bias, various recommendations were followed, such as using different endpoint scales, ensuring the anonymity of the interviewees and obtaining the information from different respondents at different times (e.g. Chang, Van Witteloostuijn & Eden, 2010). The fieldwork was carried out between 2010 and 2015. In 2010, responses pertaining to servant leadership and organizational learning capability were obtained. Five years later, information about radical innovation was collected.

Finally, given that the study was conducted in Spain, all the items were worded in Spanish. Although the organizational learning capability scale was originally developed in Spanish, servant leadership and radical innovation scales were developed in English. To guarantee the accuracy of the translation, a double-back translation procedure was used (Brislin, 1970). This technique involves translating the original English version of measurement scales into Spanish and then retranslating it into English, comparing it to the original version.

4.2. Measurement instruments

Measurement scales had already been used and validated in the previous research. The reliability of the scales was assessed using Cronbach's alpha. The Radical Innovation Scale was based on the works developed by Gatignon et al. (2002), and Marvel and Lumpkin (2007). This construct had a Cronbach's alpha of 0.88. The scale developed by Chiva et al. (2007) was used to measure the organizational learning capability. All dimensions that comprise the organizational learning capability obtained Cronbach's alpha values greater than 0.70. Finally, servant leadership was measured using the scale developed by Barbuto and Wheeler (2006). Each dimension of servant leadership obtained Cronbach's alpha values greater than 0.70.

4.3. Control variables

Company size and sector were used as control variables, due to their potential influence on innovation (e.g. Acs & Audretsch, 1988; Fitjar & Rodríguez-Pose, 2015). According to the number of employees, companies were classified as follows (frequencies for each category in our sample appear in parentheses): fewer than 50 employees (13.4%), between 50 and 100 employees (22.5%), between 101 and 250 employees (24.6%), between 251 and 500 employees (26.8%), between 501 and 1,000 employees (9.2%), and firms with more than 1,000 employees (3.5%). A distinction between manufacturing and service firms was also made: 29.6% of the organizations belonged to manufacturing sectors, while 70.4% were from service sectors.

4.4. Analyses

Structural equations and the statistical software AMOS-26 were used to empirically validate the proposed model, opting for the maximum likelihood estimation method. The proposed model tries to elucidate the mediating role of organizational learning capability in the relationship between servant leadership and radical innovation. Additionally, a bootstrapped confidence interval was used to validate the proposed indirect effect.

5. Results

5.1. Descriptive statistics and psychometric properties of the measurement scales

Table 1 shows the information related to the descriptive statistics. The mean of the items, standard deviations and correlations among the constructs was calculated. The psychometric

Table 1
Factor correlations, means and standard deviations

	Mean	s.d.	RI	Ser	OLC	Exp	Risk	Env	Dia	Dec	Alt	Emo	Per	Wis	Stw
RI	5.45	1.00	1												
Ser	3.80	.35	.325**	1											
OLC	3.76	.40	.260**	.534**	1										
Exp	4.03	.55	.179*	.411**	.565**	1									
Risk	3.39	.79	.113	.236**	.615**	.209*	1								
Env	3.71	.64	.109	.185*	.584**	.074	.194*	1							
Dia	4.12	.53	.211*	.450**	.709**	.334**	.184*	.340**	1						
Dec	3.54	.66	.226**	.450**	.683**	.294**	.154	.226**	.514**	1					
Alt	3.46	.64	.268**	.800**	.443**	.355**	.184*	.165*	.359**	.362**	1				
Emo	3.61	.57	.268**	.790**	.354**	.230**	.041	.233**	.361**	.315**	.646**	1			
Per	3.95	.36	.049	.628**	.389**	.289**	.301**	.089	.283**	.265**	.311**	.322**	1		
Wis	3.92	.40	.187*	.659**	.372**	.315**	.154	.062	.346**	.343**	.357**	.358**	.449**	1	
Stw	4.07	.46	.314**	.658**	.365**	.292**	.225**	.066	.253**	.325**	.355**	.327**	.392**	.359**	1

Notes: For the standard deviations and factor correlations, we used the mean of the items constituting each dimension.

** Significant correlation at $p < 0.01$.

Note: RI = Radical innovation; SER = Servant leadership; OLC = Organizational learning capability; EXP = Experimentation; RISK = Acceptance of risk; ENV = Interaction with the external environment; DIA = Dialogue; DEC = Participative decision-making; ALT = Altruistic calling; EMO = Emotional healing; PER = Persuasive mapping; WIS = Wisdom; STW = Stewardship

properties of the measurement scales were evaluated to determine the validity of the constructs (Anderson & Gerbing, 1988). Consequently, their dimensionality and reliability, as well as their convergent, discriminant and content validity were analyzed (Tippins & Sohi, 2003).

Moreover, in the case of servant leadership and organizational learning capability, the fit of the second-order factor models was tested to support the proposed multidimensionality of these concepts. In the case of servant leadership, the results were as follows: Chi-square (d.f.)=340.04 (225); p -value=0.00; Chi-square/d.f.=1.51; NFI=0.82; NNFI=0.92; CFI=0.93; RMSEA=0.06; while in the case of organizational learning capability the results were: Chi-square (d.f.)=85.07 (72); p -value=0.14; Chi-square/d.f.=1.18; NFI=0.91; NNFI=0.98; CFI=0.99; RMSEA=0.04.

Regarding the structure of the constructs, in addition to confirmatory factor analyses, a full measurement model that includes all the variables was assessed (Anderson & Gerbing, 1988). Testing a full measurement model establishes the structure of the variables in the context of other variables measured in the study, and ensures that the measures used in the study are different from one another. The overall fit of this general model was: Chi-square (d.f.)=1122.110 (847); p =0.00; CFI=0.91; RMSEA=0.05. The Chi-square statistic was non-significant, while all the standardized estimates were significant and in the expected direction. Therefore, it is confirmed that the constructs were different from one another.

Radical innovations render existing competencies, skills, and know-how obsolete, negating them

The results of the reliability analysis were also satisfactory (Table 2). Cronbach's alpha values, as well as those of composite reliability, exceeded the minimum accepted value of 0.7 (Nunnally, 1978).

Content validity was supported by the procedure used to select the measurement scales, all of which have been used and validated in the previous research. The variables used to measure radical innovation were based on the scales developed by Marvel and Lumpkin (2007) and Gatignon et al. (2002). Servant leadership is based on the scale by Barbuto and Wheeler (2006). Finally, organizational learning capability was measured using the items of the scale developed by Chiva et al. (2007).

Table 2
Reliability of the measurement scales

Construct	Composite reliability	Cronbach's alpha
Radical innovation	0.91	0.88
Servant leadership	0.96	0.90
Organizational learning capability	0.96	0.83
Experimentation	0.80	0.78
Acceptance of risk	0.81	0.79
Interaction with the external environment	0.80	0.79
Dialogue	0.86	0.85
Participative decision-making	0.89	0.88
Altruistic calling	0.90	0.89
Emotional healing	0.88	0.87
Persuasive mapping	0.81	0.75
Wisdom	0.78	0.79
Stewardship	0.86	0.85

To evaluate convergent validity, the NFI coefficient (Figure 2) and the magnitude of the factor loadings were taken as a reference. However, the NFI results did not reach the minimum threshold of 0.9 (Bentler & Bonnet, 1980). Nonetheless, as this indicator is sensible to sample size, it is necessary to consider other indicators that are not affected by this issue, such as NNFI and CFI (Kline, 2005; Tucker & Lewis, 1973). These indicators are greater than 0.9 (Figure 2), showing an acceptable level of fit (Marsh, Hau & Wen, 2004). Finally, the magnitudes of factorial loadings reach or exceed the minimum level of 0.4 (Hair, Anderson, Tatham & Black, 1999) in all the constructs (Table 3). Thus, it may be concluded that the convergent validity of all the constructs is supported.

We also conducted a test of discriminant validity, which determines whether the correlations between factors are significantly different from +1 or -1 (Bagozzi, Yi & Phillips, 1991). The resulting 95% confident intervals were computed as a parameter estimate $\pm 1.96 * (SE)$ and unity was not present in any of the intervals (showing discriminant validity).

Table 3
Factor loadings and significance (Student's t)

Construct	Items	Factor loading	t
Radical innovation	RI1	0.814 (1)	
	RI2	0.658	8.359
	RI3	0.648	8.196
	RI4	0.689	8.848
	RI5	0.818	11.124
	RI6	0.909	12.763
Experimentation	EXP1	0.921 (1)	
	EXP2	0.695	4.949
Acceptance of risk	RISK1	0.692 (1)	
	RISK2	0.945	3.007
Interaction with the external environment	ENV1	0.729 (1)	
	ENV2	0.673	7.058
	ENV3	0.853	7.449
Dialogue	DIA1	0.715 (1)	
	DIA2	0.740	8.108
	DIA3	0.828	8.946
	DIA4	0.810	8.794
Participative decision-making	DEC1	0.866 (1)	
	DEC2	0.728	10.25
	DEC3	0.949	14.223
Altruistic calling	ALT1	0.951 (1)	
	ALT2	0.861	15.745
	ALT3	0.719	10.955
	ALT4	0.784	12.865
Emotional healing	EMO1	0.891 (1)	
	EMO2	0.922	15.291
	EMO3	0.716	10.169
	EMO4	0.643	8.682
Persuasive mapping	PER1	0.829 (1)	
	PER2	0.764	9.246
	PER3	0.679	8.118
	PER4	0.424	4.823
	PER5	0.693	8.312
Wisdom	WIS1	0.681 (1)	
	WIS2	0.676	6.51
	WIS3	0.695	6.642
	WIS4	0.532	5.345
	WIS5	0.573	5.693
Stewardship	STW1	0.813 (1)	
	STW2	0.851	11.032
	STW3	0.787	10.085
	STW4	0.548	6.543
	STW5	0.714	8.944

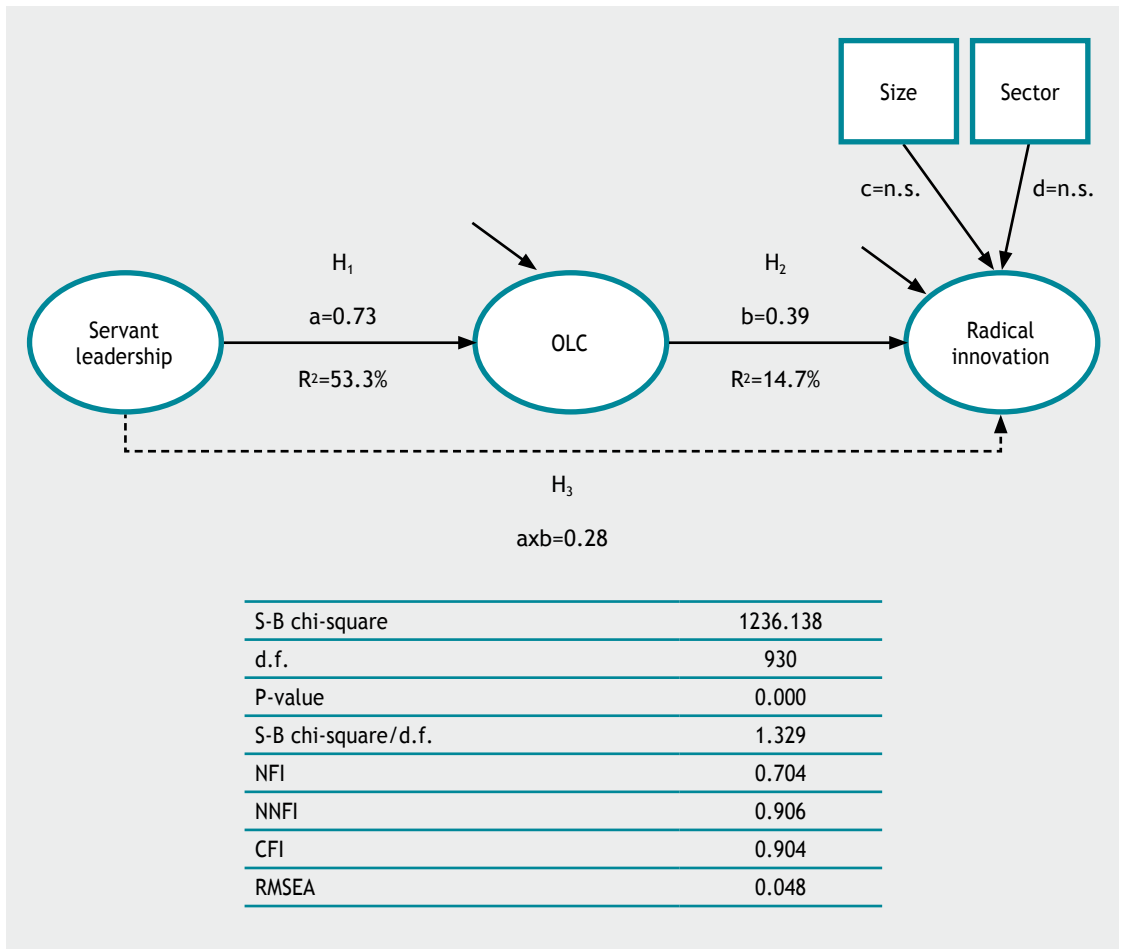
Companies must seek leaders that prioritize the interests of the followers ahead of their own

5.2. Testing the research hypotheses

Modern approaches to mediation analysis do not require evidence of a total effect prior to the estimation of direct and indirect effects (Hayes, 2012). According to Zhao, Lynch and Chen (2010), the only requirement to demonstrate mediation is a significant indirect effect $a \times b$, which can be demonstrated through a bootstrap test.

The results (Figure 2) showed a significant relationship between servant leadership and organizational learning capability ($a=0.73$, $t=4.50$, $p < 0.001$), and the path between organizational learning capability and radical innovation was also significant ($b=0.39$, $t=3.26$, $p < 0.001$). The effects of firm size ($c=0.05$, $t=0.61$) and sector ($d=-0.07$; $t=-0.77$) on radical innovation were also tested, and the results were non-significant. Furthermore, the 95% bias-corrected confidence interval for the indirect effect based on 5,000 bootstrap samples was tested using AMOS-26, and it was found to be above zero in all cases (0.14-0.45). Therefore, the indirect effect of servant leadership on radical innovation is significantly different from zero and the null hypothesis of no mediation effect can be rejected. Additionally, the direct relationship between servant leadership and radical innovation was tested and also proved to be statistically significant.

Figure 2
Causal model



Note: axb = indirect effect

This study contributes to improving the innovativeness of companies by ameliorating the working conditions within them

6. Discussion

The hypotheses proposed in the study were confirmed. These results contribute to expanding the knowledge related to the factors that facilitate radical innovation, and have implications for the literature on servant leadership and organizational learning capability.

To the best of our knowledge, this is the first empirical study that analyzes the effect of servant leadership on organizational learning capability. On the other hand, the positive effect of organizational learning capability on radical innovation is consistent with findings in previous studies that have positively related both concepts (e.g. Domínguez-Escrig et al., 2018). The indirect effect that is supported in the study expands the knowledge of the effect of servant leadership on radical innovation. Recent calls demanded more research to study the effect of this type of leadership on innovation (Hughes et al., 2018). Although there are some studies that analyzed the importance of servant leaders to promote innovation and creativity (e.g. Yoshida et al., 2014), confirming its positive influence, little is known of the effects of servant leadership on radical innovation.

The conclusions of the present study have some practical implications. To promote radical innovations, it is necessary to create organizational contexts in which communication, participation in decision-making, experimentation, interaction with the external environment and risk-taking are facilitated. In order to make this happen, companies have to seek professionals who may become servant leaders. Human resources policies, such as recruitment or training, have to be focused on stressing and promoting the values and behaviors that characterize servant leadership. Companies must seek leaders that prioritize the interests of the followers ahead of their own, help employees to recover from personal traumas, are good at anticipating the consequences of their decisions, are persuasive in convincing followers to engage in ambitious projects, believe that their organizations play a moral role in the society and are concerned with the long-term consequences of their decisions. In addition, by elucidating the positive outcomes of servant leadership, this study contributes to improving the innovativeness or success of companies by ameliorating the working conditions within them. This is something that has recently been in demand from the academic field, due to the increasing number of cases of unethical and selfish behaviors of managers and leaders in different areas (Mallén & Domínguez-Escrig, 2017).

This study has some limitations. For instance, this research only analyzed Spanish firms, so the conclusions are limited to the companies of this country. Furthermore, the sampling frame of companies was heterogeneous in terms of size and sector. Future studies should be conducted in other countries, in order to compare the innovative performance among companies of different nations. In addition, studies that differentiate between start-ups and incumbent companies, focusing on concrete sectors or distinguishing between large, small, and medium companies, may expand the conclusions reached in this study.

In addition, it would be important to continue to analyze the factors that promote radical innovation, with particular emphasis on leadership styles that prioritize the wellness of the followers, promote ethical behaviors and show a genuine concern for the future consequences of their actions on society and the environment. In this sense, it would be possible to contribute to boosting the innovativeness of companies by enhancing workplace conditions. Moreover, new studies on the consequences of servant leadership should be conducted. Effects on other types of innovation, such as incremental innovation or innovation stages would be of interest. Other mediating variables should be considered in future research. For instance, differentiating between generative and adaptive learning might further add to the conclusions of this study.

7. Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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