Improving performance through leaders' forgiveness: the mediating role of radical innovation

Abstract

Purpose. *The objective of the study is to analyze the relationship between leaders' forgiveness and organizational performance, using radical innovation as an explanatory variable.*

Design/methodology/approach. *The study was conducted in a sample frame of 11,594 Spanish companies. 600 valid questionnaires were obtained. Structural equations were used to validate the proposed hypotheses.*

Findings. *Results confirmed the hypotheses proposed in the model: we provided, through structural equations, empirical evidence of the relationship between leaders' forgiveness and organizational performance, mediated by radical innovation. Leaders' forgiveness promotes radical innovation and, in turn, performance.*

Research limitations/implications. *The sample of companies is heterogeneous in terms of firm turnover, size, and age. The study is focused on radical innovation.*

Practical implications. *The present study may help to develop more humane policies to manage human resources, by taking into account employees' feelings and needs.*

Originality/value. *The business field is closer to competitive values and has traditionally underestimated the importance of leaders' forgiveness. This is one of the few studies that empirically analyze the consequences of leaders' forgiveness within organizations.*

Paper type: *Research paper.*

Keywords: forgiveness; leadership; radical innovation; performance

1. Introduction

Growing competition, globalization or changes in technology hinder companies' capability to survive in an increasingly turbulent environment. To remain competitive, organizations must innovate and look for new ways to improve their results. For this reason, it is necessary to disentangle what factors facilitate innovation and enhance performance.

The study of innovation must be conducted taking into account the different types of innovation, because both the antecedents that facilitate their appearance and the consequences for organizations are completely different (McDermott and O'Connor, 2002). Within the different typologies and nomenclatures found in the academic field, one of the most widespread classifications is the one that distinguishes between incremental and radical innovation. These categories allow innovation to be classified along a continuum – from incremental to radical – according to the degree of change they produce in the organization, radical ones being especially relevant because of their great potential to improve companies' results and performance.

Literature highlights a wide range of elements that promote innovation. When studying the antecedents of innovation, one of the factors that stirs up a great deal of interest is leadership, whether this involves analyzing the effect of different leadership styles on innovation or studying specific behaviors exhibited by leaders (e.g., Domínguez-Escrig et al., 2018; Stock et al., 2017).

In today's competitive environment it is necessary to promote new leadership approaches. As employees, stakeholders, and society in general are increasingly concerned about organizational activity, a great deal of research is calling for more humane policies to manage human resources by taking into account their feelings and trying to meet their needs (Van Dierendonck and Patterson, 2015). Among the new approaches, different leadership

typologies, such as servant and transformational, have been positively related to both innovation and performance (e.g., Jiang and Chen, 2018; Chiniara and Bentein, 2018). In fact, Chiva (2014) proposed a new Human Resource System, the Common Welfare Human Resource Management System, which promotes learning, innovation (mostly radical), and humanistic behaviors in organizations. In the same study, Chiva considered that servant leaders, or leaders with characteristics such as trust, service or forgiveness, should be strongly related to this new Human Resource Management System. Therefore, it is suggested that these relationships, such as some leadership characteristics like forgiveness with radical innovation and performance, should be analyzed empirically. This is the aim of this research.

In the same line and concerning leadership, Yukl (2012) called for more research to analyze the effects of different specific behaviors and the mediating processes that explain why these behaviors influence performance. Although, on the one hand, autonomy and confidence in the capabilities of employees are strengthened and better results may be achieved through new leadership styles, on the other, mistakes, failures or unexpected results, even offenses or grievances related to the development of a project or daily work within the organizations, may be counterproductive to generate an atmosphere that promotes creativity and innovation. Forgiveness is one of the elements that facilitate a more nurturing and fulfilling climate at work, which in turn has potential benefits for organizations, such as greater creativity and innovation. However, its importance has been traditionally neglected in the business field (Stone, 2002). Forgiveness may be defined as the "complex of affective, cognitive, and behavioral phenomena in which negative affect and judgment toward the offender are diminished, not by denying one's right to such affect and judgment, but by viewing the offender with compassion, benevolence, and love" (Bradfield and Aquino, 1999:610). It is a freedom-creating act that empowers individuals and enhances employees' self-efficacy. Forgiveness entails creating an atmosphere of trust in which employees feel safe to face mistakes and failures (Van

Dierendonck and Nuijten, 2011), allowing workers to learn from them and take risks, which fosters organizational learning capability (Chiva et al., 2007). These employees seek new ways of doing things, thus improving the outcomes achieved by the organization (Caldwell and Dixon, 2010).

Forgiveness has not been studied much at the organizational level, and requires more research (Fehr and Gelfand, 2012). For instance, Guchait et al. (2016) stated that more studies focused on its consequences are needed in the organizational context. This is probably because the business field, traditionally closer to competitive values, has underestimated and has not paid sufficient attention to this idea. Nevertheless, forgiveness is a highly valuable concept because it allows more enriching and satisfactory work environments to be created (Stone, 2002), demonstrating that there is space for these ideas in business (Barclay and Saldanha, 2016). Although promoting forgiveness is not easy, it is the leaders of the organizations who must play a fundamental role in boosting it in companies (Cameron and Caza, 2002; Fehr and Gelfand, 2012; Van Dierendonck and Patterson, 2015).

Although there is evidence of a relationship between forgiveness, innovation and performance (e.g., Stone, 2002), to our knowledge there are no references to previous empirical work that has studied these relationships by focusing on radical innovation and leaders' forgiveness or by considering their effects together. Therefore, the present research sets out a model that reflects the effect of leaders' forgiveness on radical innovation and performance. Performance refers to the results obtained by an organization. In this study, performance is related to consumers' loyalty, profitability, sales growth, and return on investment (Tippins and Sohi, 2003).

2. Literature review

2.1 Leaders' forgiveness

Employees are human and commit errors, mistakes or offenses. Kurzynski (1998) pointed out that expecting that these will not happen and that performance will be perfect, without any problems or disagreements, is not a realistic expectation. In this sense, mistakes cannot be eliminated and will always happen (Guchait et al., 2016). Even if there is a desire to do things as well as possible, they are inevitable in a work context (Quick and Goolsby, 2013). Generally, within organizations there is an idea of how to do the work, how to behave or what the most desirable results are. When there are dissonances between expectations and reality, negative feelings and reactions appear (Cameron, 2007).

Forgiving involves recognizing that errors may occur and people cannot be constantly penalized for it (Kurzynski, 1998; Lin et al., 2016). Forgiveness is related to leaders' capability to empathize and understand their employees, see things from another point of view, and create an atmosphere of trust (Lennick and Kiel, 2011; Rodríguez-Carvajal et al., 2014). By forgiving, it is recognized that the other person has defects but these defects do not define him or her; that is, it conveys the idea that workers are valued not only by their mistakes or negative actions (Kurzynski, 1998), but they also have many other strengths which are worth relying on in the future (Lennick and Kiel, 2011). For forgiveness to be effective, the forgiven person has to be aware that he or she has done something wrong (Adams et al., 2015).

Davidhizar and Lauren (2000) considered that, to forgive others, people must learn to forgive themselves. If they are not able to forgive their own mistakes, they will not be able to forgive others. Stone (2002) followed the same line of thinking and stated that to begin to forgive others and create a culture of forgiveness, people should first know how to forgive themselves.

Cameron (2007) pointed out that forgiveness is both an internal process and an interpersonal act.

Forgiveness is not only applied to errors or mistakes made in the workplace, but also to injustices, offenses, damage, conflicts, etc. which occur both intentionally and unintentionally. It involves letting go of both one's own mistakes and errors and those of others in order to learn from them (Caldwell and Dixon, 2010). For this reason, it is necessary to commit oneself to a forgive-and-remember policy instead of a forgive-and-forget one (LaBarre, 2002). Forgiveness entails renouncing the search for culprits and avoiding criticism (Stone, 2002); having a positive orientation toward mistakes, errors, and offenses committed in the workplace (Guchait et al., 2016) potentially allows a situation of suffering to become an enriching experience (Davidhizar and Laurent, 2000).

Nevertheless, forgiveness does not mean that people can act with impunity, without any responsibility for their actions or mistakes. Neither does it involve tolerating, exonerating, excusing, minimizing or forgetting mistakes, errors, injuries or offenses (Quick and Goolsby, 2013; Fehr and Gelfand, 2012). The offender is responsible for his or her acts, and mistakes must be admitted. However, forgiveness attempts to alleviate their negative consequences, by learning from them (Guchait et al., 2016).

In every conflictive situation, leaders must choose between forgiveness and punishment, depending on the context, the characteristics, and the consequences of each case. They are in the difficult situation of having to decide between forgiving or punishing, sending a clear message to the organization that they do not allow certain conducts or behaviors (Quick and Goolsby, 2013). It is not always possible to forgive, and in the most extreme situations forgiveness may not be sufficient, and punishment or drastic measures are required, such as firing subordinates (Davidhizar and Laurent, 2000).

The benefits of forgiveness are manifold both for people at the individual level and companies globally. Nonetheless, despite the benefits identified, forgiveness may occasionally have undesired consequences and be detrimental, thereby aggravating the conflict generated (Adams et al., 2015; Fehr and Gelfand, 2012). For instance, by forgiving, a feeling of self-righteousness may be promoted. In other situations, some people may not be aware of having committed a mistake and feel offended at being forgiven (Adams et al., 2015); there is also the possibility of misunderstandings, such as perceiving that errors are condoned, excused or justified (Kurzynski, 1998).

Forgiveness is a capability that needs a great deal of effort to be carried out (Fehr and Gelfand, 2012). Forgiving is very difficult. For many people, forgiveness is not as natural as other reactions, such as anger. Even at the individual level, in their private life, people find it difficult to forgive others. In addition, this is much more complicated to do in the working environment where, due to prevailing highly competitive values, it is considered strange and unusual behavior, far removed from the principles and rules that predominate in organizations (Barclay and Saldanha, 2016; Cameron, 2007; Kurzynski, 1998). In the business context, when someone makes a mistake, they are expected to be punished and pointed out for it, in order to avoid misunderstandings. Generally, it is considered that nobody must interpret that there are no responsibilities for failures, or that unacceptable behaviors are allowed. For these reasons, organizations constantly penalize, in order to avoid repetition of similar situations in the future (Stone, 2002).

2.2 Radical innovation

Literature distinguishes between different types of innovation and suggests a number of terms and classifications depending on their characteristics (e.g., Prange and Schlegelmilch, 2018). One of the most studied and well-known classifications in the academic field is the distinction

between incremental and radical innovation (Marvel and Lumpkin, 2007; McDermott and O'Connor, 2002).

Although the difference between the two types of innovation is not always clear, these concepts have completely different characteristics and effects on organizations, so they need to be managed differently (Jugend et al., 2018; Leifer et al., 2001). Therefore, there are numerous academic studies that highlight the need to distinguish between their antecedents, barriers, and consequences (Slater et al., 2014).

To make the differences between the two types of innovation clear, it is necessary to emphasize the characteristics that distinguish each of them. Incremental innovation is focused on the improvement of existing products and processes, while the radical type needs completely new ideas and requires high levels of creativity (Büschgens et al., 2013). In other words, incremental innovation involves doing things better, whereas radical innovation entails working in a different way (Bessant et al., 2014).

For an innovation to be considered radical, it must be new for the organization that develops it and the market to which it is addressed, as well as being based on novel knowledge and technology compared to the existing one (Keupp and Gassmann, 2013). For this reason, radical innovation is related to both an idea of discontinuity regarding the previous experience of the organization (Bessant et al., 2014) and a desire to do things differently, moving away from routines (Keupp and Gassmann, 2013).

This type of innovation may refer to completely new products, services or productive processes (Leifer et al., 2001). Product innovation is defined as the product or service introduced to meet the needs of the market or of an external user, and process innovation is understood as referring to a new element introduced into production operations or functions (Alegre et al., 2005).

Despite the benefits and advantages that organizations can achieve through radical innovation, it is unusual for organizations to start projects to develop this type of innovation (Rice et al., 2001). Sorescu et al. (2003) pointed out that the vast majority of radical innovations come from a minority of companies. Developing this type of innovation is extremely complicated since companies must overcome a high number of barriers and difficulties.

3. Hypotheses

3.1 Leaders' forgiveness and radical innovation

The process of creating radical innovations is long, difficult, and fraught with countless obstacles and uncertainties. For these reasons, organizations must promote a context characterized by tolerance for failure. LaBarre (2002) argues that not all new ideas have to be better than the old ones. In fact, the opposite is usually the case, as evidenced by the high failure rate of new products. Therefore, to find a successful new idea it is necessary to try many others that fail. This forces organizations to continuously face errors and mistakes, which requires the creation of an atmosphere that fosters the ability to cope with the frustration of failure. Frese and Keith (2015) stated that, by innovating, organizations are entering into new and unexplored territory. "Innovation entails venturing into the unknown, where no formulas exist. Risks will be taken; mistakes will be made. Some things will work, and some things will fail. Organizations cannot pioneer new territory unless they accept that they will spend some time going around in circles or down dead-end paths" (Lennick and Kiel, 2011: 215).

Thus, it is inevitable that errors and mistakes will occur and, for this reason, instead of strategies focused on avoiding them, it is more effective to promote policies to manage them, by creating a context that tolerates failure in order to learn from it and achieve positive outcomes, such as

improvements in innovation and performance (Frese and Keith, 2015; Gu et al., 2013). In contrast, working in an environment that penalizes failure generates less creative workers who take fewer risks (Kurzynski, 1998).

A culture that tolerates failure and does not punish employees for their mistakes facilitates the generation of a psychological safety environment that fosters innovation by promoting experimentation, learning, and risk-taking (Gu et al., 2013), as well as open communication and information exchange (Guchait et al., 2016). In addition, mistakes and failures may reinforce experimentation and risk-taking, which increases innovation and adaptation to changing circumstances (Frese and Keith, 2015). An atmosphere of trust arises and allows open discussion of mistakes and thinking about them, with the certainty that they will not involve penalties, thus turning negative outcomes into potential benefits.

This organizational context may be achieved through forgiveness. Lennick and Kiel (2011) stated that the most forgiving companies are usually the most innovative. By forgiving others, even oneself, for the errors and mistakes committed, it is possible to create a climate that reinforces interpersonal relationships, communication, risk-taking, creativity, and innovation (Caldwell and Dixon, 2010; Davidhizar and Laurent, 2000; Stone, 2002), as well as learning (Cameron and Caza, 2002). Learning is an essential element to foster innovation (Alegre and Chiva, 2008) and forgiveness provides the opportunity to learn from mistakes (Stone, 2002), favoring further reflection on the innovation development process, which may lead to, for instance, new products, services or procedures that represent a total break with current paradigms.

Additionally, forgiveness creates a culture in which employees have greater enthusiasm for their work, feel valued and recognized, and believe that their work is meaningful, which favors the feeling that they can express their talent (Stone, 2002). By improving participation,

employees are more committed to the organization and contribute with more ideas and innovative knowledge (Damanpour, 1991).

To our knowledge, there are no studies that relate forgiveness to radical innovation. However, the characteristics that define it, their influence on the organization, and their potential consequences, such as learning, trust, risk-taking, participative working environments, information exchange, commitment with the organization, and tolerance for failure and mistakes, have been studied separately, with results suggesting or demonstrating a positive relationship with radical innovation (e.g., Brattström et al., 2015; López-Cabrales et al., 2008; Nijstad et al., 2014; Zhao et al., 2016). For instance, Nijstad et al. (2014) stated that psychologically safe climates favored the use of dissenting opinions to create radical innovations. Radical innovation has a greater risk of failure and needs an organizational environment that tolerates errors and mistakes in the development of such innovations. Therefore, firms that promote risk-taking and assume that potential negative consequences may occur facilitate radical innovation because employees feel free to experiment or develop completely new ideas (López-Cabrales et al., 2008). In this line, Brattström et al. (2015) highlighted the relevant role of trust to manage the uncertainty related to radical innovation development. By not punishing errors, organizations learn from mistakes and failures, which favors experimentation, the development of new knowledge or finding new solutions to problems (Zhao et al., 2016).

Therefore, we propose our first hypothesis:

H_1: Leaders' forgiveness has a positive effect on radical innovation

3.2 Radical innovation and performance

The benefits related to radical innovation are very important and different authors highlight their positive effect on organizations and national economies. In the academic literature we can find different advantages of radical innovation: it is crucial for long-term organizational success (Leifer et al., 2001; McDermott and O'Connor, 2002); contributes to better performance (Gatignon et al., 2002; Leifer et al., 2001); helps to improve results and maintain competitive advantage (Chang et al., 2014; Slater et al., 2014); improves companies' profitability and competitive position (Baker et al., 2014); facilitates a clear differentiation from competitors (Gatignon and Xuereb, 1997); improves companies' image and consumer satisfaction (Avlonitis et al., 2001); and so forth.

On the other hand, radical innovation involves profound changes in the market, which generates uncertainty in the companies competing in it (Büschgens et al., 2013). When a radical innovation is launched onto the market, leading companies may see that their dominant position is compromised (Sarkar et al., 2018). This type of innovation takes the place of current products, creates new product categories, and transforms the relationship between consumers and providers (Leifer et al., 2001). Companies that do not rapidly adapt to this new situation may lose their leading position and be surpassed by competitors that propose radical innovations (Chandy and Tellis, 2000).

Radical innovation does not only benefit companies and organizations as consumers may also gain advantages from it because it offers unprecedented benefits compared to existing products and technologies (Chandy and Tellis, 2000; Slater et al., 2014). Consequently, consumers perceive greater value in the new offer, are more satisfied, and are willing to pay a higher price for highly innovative products, which may help to cover the costs related to the development of radical innovation (Chang et al., 2014).

All this allows us to propose our second hypothesis.

H_2: Radical innovation has a positive effect on performance

3.3 Leaders' forgiveness and performance: the mediating effect of radical innovation

Forgiveness is important to improve productivity (Davidhizar and Laurent, 2000) and is vital for the effective functioning of organizations (Barclay and Saldanha, 2016) and organizational success (Davidhizar and Laurent, 2000; Lennick and Kiel, 2011). Likewise, it is related to improved organizational productivity (Zdaniuk and Bobocel, 2015) and increased profitability (Stone, 2002). Leaders who are able to forgive subordinates and colleagues make this behavior more likely to result in improved performance. These outcomes can be obtained because employees are more loyal and more committed to the organization (Caldwell and Dixon, 2010), have more confidence, and are more satisfied (Zdaniuk and Bobocel, 2015).

Forgiveness gives freedom to employees, empowers them, improves their self-efficacy, restores conditions for teamwork, and increases people's self-esteem, which facilitates the improvement of organizational outcomes (Caldwell and Dixon, 2010). A freer environment that facilitates relationships, teamwork and trust may favor reflection, the questioning of current norms and values, and the emergence of new ideas that represent substantial innovations, thereby improving organizational performance. In addition, virtuous leaders (those who genuinely exhibit love, forgiveness and trust) make more money, retain consumers and employees, and are more innovative and creative that those who do not practice the same virtues (Caldwell and Dixon, 2010).

Leaders' behaviors serve as contextual factors that influence how organizations work, which may in turn affect both innovation and performance (Zhu and Chen, 2016). Given their capability to influence both radical innovation and performance, the following hypothesis is proposed:

H_3: The relationship between leaders' forgiveness and performance is mediated by radical innovation

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INSERT FIGURE 1 ABOUT HERE

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4. Research methodology

4.1 Data collection

The present study is focused on a sample frame of 11,594 Spanish companies from a database maintained by the Spanish Ministry of Economy and Competitiveness. This sample frame is heterogeneous in terms of turnover, firm age or size. Finally, a sample of 600 valid questionnaires was obtained, 300 of which were answered by the general managers of the organizations and the remaining 300 by the human resources managers.

Fieldwork was carried out in 2015. In order to prevent common method bias, two different questionnaires were designed and addressed to different people within the organizations. In this way, questions related to leaders' forgiveness were answered by human resources managers, while general managers gave their opinion on questions related to radical innovation and organizational performance. The two kinds of managers were selected because of their position and experience within the organization, which gave them a deep comprehensive knowledge of what happens in their companies and makes them a reliable source of information with which to evaluate their organizations as a whole. To encourage participation in the study,

the anonymity of all the participants was guaranteed. By so doing, honesty in the responses is promoted, which in turn increases the reliability of the results.

All the constructs were measured using a 7-point Likert scale that was used to test the degree of agreement or disagreement of the respondents with each statement included in the survey. Scores ranged from 1 (totally disagree) to 7 (totally agree).

The method selected to complete the survey was the telephone interview. The main reason for this choice was that phone interviews make it possible to interview people who are hard to reach, as is the case of the respondents in this study, all of whom were managers.

Being a study focused on Spanish companies, the questionnaire was addressed to respondents in Spanish. The scale that measured leaders' forgiveness was originally published in Spanish, while the radical innovation and performance scales were initially developed in English. In order to ensure the accuracy of the translation, a double-back translation technique was used with each of the constructs.

4.2 Measurement instruments

Regarding the choice of the measurement instruments used in this research, a literature review was conducted to decide what scales best suited the present study. The selected instruments have been used and validated in previous research. To determine the reliability of the scales Cronbach's alpha, compound reliability, and average mean extracted were calculated (Table 2).

Leaders' forgiveness was studied using the scale by Rodríguez-Carvajal et al. (2014), who employed three items to measure this behavior in servant leaders. The construct is reliable with a Cronbach's alpha of 0.92.

The scale to measure radical innovation was built on the studies by Marvel and Lumpkin (2007) and Gatignon et al. (2002). This construct obtained a Cronbach's alpha of 0.97.

Performance refers to the results achieved by an organization. In the academic literature, both objective and subjective measurements have been used to measure performance (e.g., Camps and Luna-Arocas, 2009). Given the difficulty in obtaining objective data to measure performance, since it is sensitive strategic information and may be manipulated through accounting, Su et al. (2013:125) defended the use of subjective indicators to measure performance. In the present research, we followed the approach by Tippins and Sohi (2003), who used subjective measures to test customers' loyalty, sales growth, profitability, and return on investment. The construct can be considered reliable, with a Cronbach's alpha of 0.85 (Table 2).

4.3 Control variables

Number of employees, turnover, and company's age were used as control variables due to their potential relation to both performance and innovation, as has been shown in other research (e.g., Damanpour, 1991).

Regarding the number of employees, the sample is distributed as follows: fewer than 50 employees (20.7%), between 50 and 100 employees (15.3%), between 101 and 250 employees (19.3%), between 251 and 500 employees (20.7%), between 501 and 1.000 employees (21.3%), and more than 1,000 employees (2.7%).

With respect to annual turnover, the companies in the sample are classified as follows: less than 1 million euros (8.8%), between 1 and 5 million (17.7%), between 6 and 10 million (39.5%), between 11 and 20 million (26.5%), and more than 20 million (7.5%).

Finally, according to their age, companies have the following distribution: less than 15 years (26.0%), between 16 and 25 years (35.3%), between 26 and 35 years (18.7%), between 36 and 50 years (11.7%), and more than 50 years (8.3%).

4.4 Analyses

In order to test the mediating effect of radical innovation on the relationship between leaders' forgiveness and performance, structural equations and the statistical software AMOS-23 were used to empirically validate the proposed model. We opted for the maximum likelihood estimation method.

The proposed mediation model attempts to disentangle the mediating role of radical innovation in the relationship between leaders' forgiveness and performance. This model includes the following effects: the effect of leaders' forgiveness on radical innovation, the effect of radical innovation on performance, and the indirect effect of leaders' forgiveness on performance (Figure 1). 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

Data analysis begins with the descriptive statistics. The means of the items in each construct and correlation were calculated. This information appears in Table 1 along with the standard deviations. Following the recommended practices in the literature (Anderson and Gerbing, 1988), and before using structural equation modeling to test the hypotheses, the psychometric properties of the measurement scales were evaluated to determine the validity of the constructs. To this end, their dimensionality and reliability, as well as their convergent, discriminant and content validity were studied (Tippins and Sohi, 2003).

Regarding the structure of the constructs, in addition to confirmatory factor analyses, one of the most common approaches was followed, which involves the assessment of a full measurement model that includes all the variables (Anderson and 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.) = 114.45 (62); p = 0.00; CFI = 0.99; RMSEA = 0.05. The Chi square statistic was non-significant and all the standardized estimates were significant and in the expected direction. Therefore, it is confirmed that the constructs are different from one another.

The results of the reliability analysis are also satisfactory. Cronbach's alpha values, as well as those of composite reliability, exceeded 0.8, above the minimum accepted value of 0.7 (Nunnally, 1978). In addition, the average variance extracted is above the minimum recommended threshold of 50% for all the constructs (Nunnally, 1978). These results can be observed in Table 2.

Content validity is supported by the procedure followed to select the measurement scales, all of them used and validated in 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). Leaders' forgiveness is based on the scale by Rodríguez-Carvajal et al. (2014), in which this characteristic is part of servant leadership. Finally, performance was measured using the items proposed by Tippins and Sohi (2003).

To evaluate convergent validity, the average variance extracted (Fornell and Larcker, 1981), the Bentler-Bonett coefficient, and the magnitude of the factor loadings are taken as a reference. Average variance extracted is above the minimum recommended threshold of 50% for all the constructs; the results of BBNI reached or exceeded 0.9 in all the constructs; and the magnitude of factorial loadings is above 0.5 in all the constructs. Thus, it may be concluded that the convergent validity of all the constructs is supported.

For discriminant validity to exist, average variance extracted must be greater than the square root of the construct correlations, thereby suggesting that each construct is more strongly related to its own measures than to others (Table 3).

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5.2 Testing the research hypotheses

Firstly, the relationship between leaders' forgiveness and radical innovation was tested ($a = 0.23$, $t = 3.73$, $p < 0.01$), providing support for this hypothesis. Then, the second hypothesis was evaluated, confirming the positive effect of radical innovation on performance ($b = 0.57$, $t = 7.19$, $p < 0.01$).

Although new trends in mediation analysis do not require evidence of a total effect to estimate direct and indirect effects (Hayes, 2012), the results of the total effect were statistically different from zero ($c = 0.14$, $t = 2.17$, $p < 0.05$). Taking these considerations into account, different conditions must be met to support the mediation: 1) if there is a significant relationship in the total effect model (relationship between leaders' forgiveness and performance), this must decrease considerably or become non-significant in the mediation model; (2) the mediation model must explain more variance in the dependent variable (performance) than the total effect model; (3) a significant relationship between leaders' forgiveness and radical innovation is mandatory; and (4) likewise, the relationship between radical innovation and performance must be significant. In addition, bootstrapping must be conducted to test the significance of the mediated effect (Hayes, 2013; MacKinnon et al., 2012).

All these conditions were met, so the mediating role of radical innovation in the leaders' forgiveness–performance relationship was confirmed: (1) the significant relationship between

leaders' forgiveness and performance becomes non-significant when it includes the mediating effect of radical innovation ($c1 = 0.01$, $t = 0.19$, $p > 0.05$); (2) the mediated model explains more variance than the direct effect model (0.33 vs. 0.14); (3) there is a significant relationship between leaders' forgiveness and radical innovation ($a = 0.23$, $t = 3.73$, $p < 0.01$), confirming Hypothesis 1; (4) and between radical innovation and performance ($b = 0.57$, $t = 7.19$, $p<0.01$), which confirms Hypothesis 2. Finally, the estimated indirect effect of leaders' forgiveness on performance is 0.13. The 95% bias-corrected confidence interval for the indirect effect based on a 5,000 bootstrap sample was entirely above zero (0.06 to 0.20). Consequently, the indirect effect of leaders' forgiveness on performance is significantly different from zero, and so the null hypothesis of no mediation can be rejected. Therefore, Hypothesis 3 is confirmed.

Regarding the control variables, none of them has a significant effect on performance (turnover: $d1 = 0.07$, $t = 0.43$, $p > 0.05$; number of employees: $d2 = -0.07$, $t = -0.43$, $p > 0.05$; firm age: $d3 = 0.05$, $t = 0.97$, $p > 0.05$).

Additional analyses, such as testing the hypotheses without control variables, are recommended to strengthen the confidence in the results. Through these analyses, the results achieved were almost identical, providing support for the hypotheses. Firstly, the relationship between leaders' forgiveness and radical innovation was significant ($a = 0.23$, $t = 3.73$, $p < 0.01$). In the same way, radical innovation is significantly related to performance ($b = 0.58$, $t = 7.19$, $p < 0.01$). Finally, bootstrapping confirms the indirect effect = 0.13 and a $CI_{95\%} = (0.06, 0.20)$.

INSERT FIGURE 2 ABOUT HERE

INSERT FIGURE 3 ABOUT HERE

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6. Discussion

The present research analyzed the effect of leaders' forgiveness on organizational performance, as well as the mediating role played by radical innovation. In today's competitive environment, characterized by uncertainty, companies need to innovate to ensure their survival and improve their results. In order to do so, new Human Resource Management systems or management approaches (e.g., Chiva, 2014; Laloux, 2014) have appeared. They stress the importance of HR practices that, due to their being humanistic, foster (mostly radical) innovation and also learning. These approaches seem to be connected to leaders with specific characteristics like trust, service, or forgiveness. In this research we focus on this particular characteristic, leaders' forgiveness, which seems to be strongly related to innovation (Chiva et al., 2007; Van Dierendonck and Nuijten, 2011). Therefore, this research has empirically tested the idea that leaders who forgive tend to promote radical innovations, probably because they allow mistakes and do not punish them, and by doing so organizational performance increases.

Results confirm each of the hypotheses suggested in the proposed model. Firstly, this research provides empirical evidence that leaders' forgiveness encourages radical innovation, thus confirming Hypothesis 1. Secondly, results are consistent with previous literature and confirm the positive relationship between radical innovation and performance. Finally, results show that radical innovation has a mediating effect on the relationship between leaders' forgiveness and performance (Hypothesis 3). Radical innovation appears to explain why leaders' forgiveness has a positive effect on performance.

Results have theoretical implications in the fields of leaders' forgiveness, human resource management, and radical innovation. This research contributes to the leadership literature by demonstrating a positive influence of leaders' forgiveness on radical innovation and performance. Accordingly, leaders' forgiveness should be considered as an essential characteristic to be linked to any Human Resource Management practice or practices that intend to promote, mostly, radical innovation. So, when what is sought is radical innovation, a particular characteristic should be promoted in leaders: forgiveness. Literature has traditionally linked transformational leadership with innovation (e.g., Stock et al., 2017), which underlines certain characteristics of leaders like charisma or communication skills. However, forgiveness is not a characteristic of leaders that has been stressed by literature as essential for innovation. We consider that this is so because transformational leadership has been related to a Commitment HRM system (Chiva, 2014), and to a particular approach in which encouraging and motivating people seem to be essential. Our approach sheds new light on the matter by demonstrating that a new type of leader – leaders who forgive – might also be essential for innovation. This characteristic is probably more related to a new HRM system: the common welfare HRM system (Chiva, 2014), where individuals are much more autonomous, free, and eager to learn.

Recruitment and selection, training and development, employee assessment, remuneration or even promotion should thus take into account this characteristic: forgiveness. When this characteristic is promoted, error acceptance will increase, and then experimentation and radical innovation are likely to happen. Therefore, as mentioned before, this leadership characteristic might be strongly related to Chiva's Common Welfare HRM system, which underlines humanistic practices that maximize innovation.

On the other hand, the results make it possible to expand the literature about radical innovation antecedents, by introducing constructs such as leaders' forgiveness. Likewise, results confirm the potential of radical innovation to improve companies' performance, as demonstrated by previous research. Finally, our results also extend the knowledge related to the effects of forgiveness, as leader behavior, on performance.

6.1 Implications for practitioners

Additionally, the study also has practical implications. Companies that want to improve their results may do so through radical innovations. To achieve this type of innovation, it is necessary to understand the difficulties related to work. Accordingly, when an innovation is developed, errors, mistakes or the chances of failure increase significantly because more risks are assumed. For this reason, there is a need for a context that fosters risk-taking, not punishing mistakes or errors, but facilitating learning from them.

Companies must focus on forgiveness as an essential human resources strategy (Davidhizar and Laurent, 2000; Kurzynski, 1998), and select, recruit, train, and promote to management positions people who encourage these values. The business sphere is extremely competitive and, traditionally, has been so focused on excellence and quality that any error is considered

unforgivable. Organizations must stop perceiving leaders that forgive as soft, indulgent or inefficient, and value them as strong people with a marked moral sense which makes them worthy (Kurzynski, 1998).

Moreover, forgiveness cannot have an exclusively descending direction, from managers to subordinates, but must begin with the leaders themselves, who have to assume their mistakes and imperfections. It will be very difficult for these people to forgive others if they are not able to forgive themselves (Davidhizar and Laurent, 2000).

In short, an environment that facilitates forgiveness may promote experimentation, risk-taking, learning, creativity, etc., therefore fostering radical innovation and improving organizational performance.

6.2 Limitations and future research

Finally, this research has some limitations. On the one hand, when studying the effect of leaders' forgiveness on performance, radical innovation has been focused on as playing the mediating role. Future research must study the effect of other types of innovation, such as incremental, in order to discover whether the results can be extended to other typologies or are limited to radical innovation. Other constructs related to innovation such as firm innovativeness may be studied as mediating variables with the aim of disentangling how innovation is promoted within firms to enhance organizational performance.

Additionally, this study was focused on radical product innovation. Considering that service or process innovation present different features, future research should analyze these typologies in order to compare them with the results obtained in the present study. It is also necessary to analyze the different stages of innovation development.

Moreover, the study was conducted in a sample of Spanish companies. Taking into account that innovation performance varies between countries (European Innovation Scoreboard, 2017), it would be interesting to compare these processes between countries and analyze which factors lead to superior performance.

Furthermore, as this research used the SEM technique to validate the proposed hypotheses, it would be highly interesting to conduct additional studies using qualitative methodologies which could further the conclusions achieved in the present study. By doing so, it would be possible to compare and predict organizational behaviors in companies or countries with different innovative performances.

On the other hand, organizational performance was measured through subjective assessment. Although there is a great deal of research that advocates the use of subjective variables to measure performance, objective indicators should be considered in future studies to confirm the results obtained in the present research.

In addition, there are many other leader behaviors that have not been considered in this study and that may have a positive influence on innovation and performance. In a competitive context that demands new leadership styles and organizational behavior, it is important to widen the knowledge of how prosocial behaviors such as humility or accountability may enhance the results of the organizations, and consequently improving the workplace conditions.

Finally, the sample is heterogeneous regarding firms' turnover, size, and age. Future research could be focused on companies with a similar size, differentiating between large ones and SMEs. In order to disentangle the effect of organizational age, future studies should distinguish between incumbent companies and start-ups. Future research should consider and improve these limitations.

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TABLES

Table 1. Factor correlations, means and standard deviations

	Mean	s.d.	FOR	RI	PER
Leaders' forgiveness	4.11	1.52	1		
Radical innovation	5.16	1.79	0.22**	1	
Performance	4.53	1.12	0.12*	0.51**	1

Notes: For the standard deviations and factor correlations, we used the mean of the items making up each dimension. Cronbach's alpha coefficients are given in parenthesis.
** Significant correlation ($p < 0.05$). Other correlations not marked with an asterisk present a significant correlation at $p < 0.01$.*

FOR=Leaders' forgiveness; RI=Radical innovation; PER= Performance

Table 2. Reliability of the measurement scales

Construct	Composite reliability	Average Variance extracted	Cronbach' salpha
Leaders' forgiveness (3 items)	0.92	0.78	0.92
Radical innovation (6 items)	0.97	0.85	0.97
Performance(4 items)	0.86	0.61	0.86

Table 3. Discriminant validity

	FOR	RI	PER
Leaders' forgiveness	(0.78)		
Radical innovation	0.05	(0.85)	
Performance	0.01	0.26	(0.61)

Notes: In parentheses, average mean extracted. FOR=Leaders' forgiveness; RI=Radical innovation; PER= Performance

FIGURES

Figure 1. Conceptual model and hypotheses

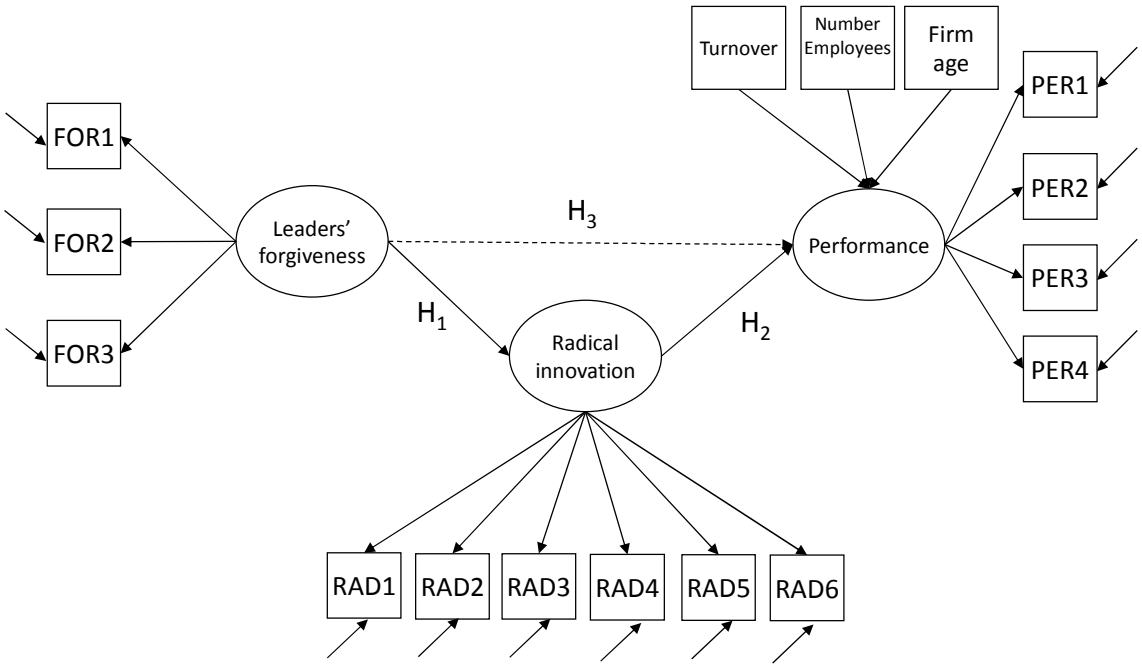
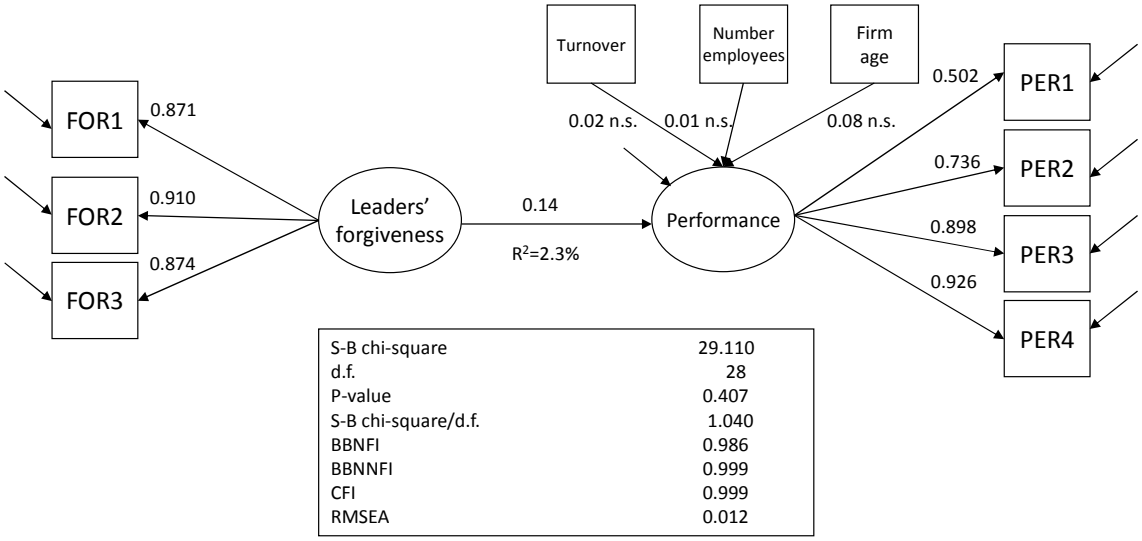


Figure 2. Total effect model (without mediator)



S-B chi-square	29.110
d.f.	28
P-value	0.407
S-B chi-square/d.f.	1.040
BBNFI	0.986
BBNNFI	0.999
CFI	0.999
RMSEA	0.012

Figure 3. Mediation model