Transformational leadership and horizontal trust as antecedents of team performance in the healthcare context

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Abstract: The present study analyses the mediator role of work-team trust (i.e., horizontal trust) in the relationship between transformational leadership, as a social resource, and team performance (i.e., intra- and extra-role performance), as suggested by the HERO model (HEalthy & Resilient Organizations Model; Salanova, Llorens, Cifre, & Martínez, 2012). The sample corresponds to 388 workers nested in 54 work teams from four organizations in the healthcare sector. Horizontal trust and transformational leadership were assessed by the work teams, and performance was assessed by the supervisors of these teams. Structural Equations models reveal, as expected, that horizontal trust has a fully mediating role between transformational leadership perceived at the team level and team performance assessed by the supervisor.

Keywords: Horizontal trust; transformational leadership; team performance.

Introduction

The healthy organization concept is currently acquiring special relevance in the framework of Positive Occupational Health Psychology, which intends to address the positive aspects of health in organizations, without ignoring the traditional negative aspects. Healthy organizations can be defined as those that make systematic, planned, and proactive efforts to improve employees' health through good practices related to task improvement, the social environment, and the organization (Salanova, 2008; Salanova, Llorens, Cifre, & Martínez, 2012).

Given the consequences of the current socio-economic crisis on the labor setting, the healthcare organization occupies a relevant space that is important to address due to its impact on society's health and well-being as one of the basic pillars of the Welfare State. Currently, we do not have enough scientific evidence about the healthcare organization as a healthy organization. Some studies can be pointed out that are based on the concept of Magnetic Hospitals. The purpose of these studies was to identify the characteristics that functioned as “magnets” in hospitals to capture highly qualified nursing professionals for patient care (McCleer, Poulin, Sovie, & Wandelt, 1983; Salanova, Rodríguez-Sánchez, Del Libano, & Ventura, 2012). The magnetic hospital concept continues to be discussed today, although, considering that we have an active healthcare system that tends to change (Buchan, 1999), it would be interesting to advance the research by addressing the healthy organization concept in the healthcare organization context.

In this context, it is important to highlight the role played by organizational trust as a key construct that is beneficial for the organization’s functioning and for its members (Kramer, 1999). Organizational trust is defined as “an employee’s willingness to be vulnerable to the actions of the organization, whose behavior and actions he or she cannot control” (Tan & Lim, 2009, p. 46). Research has shown the relationship existing between organizational trust and performance and leadership effectiveness (i.e., Aryee, Budhwar, & Chen, 2002; Dirks & Ferrin, 2002; Mayer & Gavín, 2005). The interest in the study of organizational trust at the level of teams has grown considerably as organizations have evolved toward flatter structures based on work teams (Costa & Anderson, 2011). However, more research is necessary using collective-level data.

Thus, the present study evaluates the mediator role of organizational trust (i.e., horizontal trust) between transformational leadership and team performance in the healthcare organization context and at the work-team level, based on the HERO Model (HEalthy & Resilient Organizations Model; Salanova et al., 2012).

HEHealthy and Resilient Organizations Model (HERO)

The HERO concept (HEalthy & Resilient Organization) is emerging as a way to overcome the crises and adversities in today’s organizations. It implies a competitive advantage for companies that believe that taking care of the health of work teams and the organization is fundamental in periods of critical economic and social changes. Healthy and Resilient Or-
organizations make systematic, planned, and proactive efforts to improve the processes and results of both the employees and the organization. They are “resilient” because they know how to draw strength from adverse situations, and in critical circumstances, they are able to maintain their functioning and their results in terms of profitability (Salanova et al., 2012; Acosta, Cruz-Ortiz, Salanova, & Llorens, 2015).

The model assumes that a HERO consists of three interrelated components that include different dimensions evaluated at the collective level: (1) healthy organizational resources and practices to structure and manage the work processes (i.e., conciliation practices, transformational leadership); (2) healthy employees and work teams (i.e., organizational trust, engagement); and (3) healthy organizational results (i.e., performance, company social responsibility). Studies on the HERO model indicate that investments in collective resources (i.e., team work, leadership) and healthy organizational practices (i.e., conciliation, career development) can improve employees’ collective well-being (efficacy, engagement, and resilience) and performance levels assessed by the supervisor (intra- and extra-role) (Salanova et al., 2012); engagement in team work (Acosta, Salanova & Llorens, 2011; Acosta, Torrente, Llorens, & Salanova, 2013; Torrente, Salanova, Llorens, & Schaufeli, 2012); organizational trust (Acosta et al., 2011); and health-service quality (performance, commitment, perceived quality) (Hernández, Llorens, & Rodríguez, 2014).

The present study focuses on the three components of the HERO model (Salanova et al., 2012): healthy organizational resources and practices (i.e., transformational leadership); healthy employees (i.e., horizontal trust); and healthy organizational results (i.e., team performance), through data aggregated at the work-team level, combining the shared perceptions of the workers and the supervisors.

Transformational Leadership and Team Performance

Transformational leadership is a leadership style that has continued to create great interest in the research in recent decades. It is defined as a management style where the leader broadens and elevates the interests of his/her employees and creates awareness and acceptance of the group’s objectives and mission, putting the collective interests ahead of his/her own interests (Bass, 1998). For Salanova, (2008), the transformational leader knows how to lead others toward a goal that is perceived as shared, and he/she achieves the commitment of the work teams and the organization.

This leadership style implies that the leader: (1) manages to satisfy the collaborators’ work needs; (2) knows what the collaborators’ needs are; (3) facilitates the collaborators’ contribution to organizational performance; and (4) considers the performance of the leader as a member of a work team (Bass & Avolio, 1994; Cruz-Ortiz, Salanova, & Martinez, 2013; Llorens, Salanova, & Losilla, 2009; Nielsen, 2014).

According to Rafferty and Griffin (2004), leadership is defined in five dimensions: (1) vision: expression of an idealized vision of the future based on the organization’s values; (2) inspirational communication: positive messages about the organization that build motivation and trust; (3) intellectual stimulation: fostering the employees’ interest in thinking about the problem in different ways; (4) support: the leader’s concern about his/her employees, taking their needs into account; and (5) personal recognition: rewarding the worker with praise and recognition for effort and for achieving specific goals (Cruz-Ortiz et al., 2013).

Studies point out the relationship between transformational leadership and performance of workers and work teams (i.e., Bass, Avolio, Jung, & Berson, 2003; Chun, Cho, & Sosik, 2015; Cruz-Ortiz et al., 2013; Pourbarkhordari, Zhou & Pourkarimi, 2016; Rao & Kareem, 2015; Walumbwa, Avolio, & Zhu, 2008). This leadership style is a variable that can be considered a social resource within organizations, because, according to the literature, it helps to cope with demands and improves performance levels. The present study aims to provide evidence about the importance of transformational leadership as an antecedent of the performance level of work teams.

Transformational Leadership and Organizational Trust

As Kramer (1999) points out, organizational trust has played a leading role in the research, due to its considerable advantages for the organizational environment at both the individual and collective levels. Tan and Lim (2009) define it as “an employee’s willingness to be vulnerable to the actions of the organization, whose behavior and actions he or she cannot control” (p. 46). These authors propose an organizational trust model that focuses on two levels: the co-workers and the organization. In addition, they conceive trust between co-workers (horizontal trust) as “the willingness of a person to be vulnerable to the actions of fellow coworkers whose behavior and actions that person cannot control” (Tan & Lim, 2009, p. 46). At the group level, trust is a collective phenomenon. When interacting within their team, individuals are more likely to develop shared perceptions, expectations, and behavioral norms with their team co-workers, and through these interactions, team members are likely to develop shared perceptions of trust (Costa & Anderson, 2011). In the HERO model (Salanova et al., 2012), organizational trust, a key construct in the “healthy employees” component, includes two dimensions: (1) Vertical trust, the degree to which employees trust the actions of their superiors or the organization where they work; and (2) Horizontal trust, the degree to which employees trust the people they work with, trust what they do, and enjoy being with them.

Trust is one of the most frequently cited constructs in the literature on transformational leadership (i.e., Fulmer, & Gelfand, 2012). However, the research contributes little evidence about the importance of transformational leadership
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in building organizational trust (i.e., Mishra, 1995; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Zhu, Newman, Miao, & Hooke, 2013). Although interest in the study of organizational trust at the team level has increased considerably, most of the research has focused on vertical trust. Therefore, the present study aims to fill this gap by providing evidence about the relationship between transformational leadership and horizontal trust at the work-team level.

Transformational Leadership, Organizational Trust, and Team Performance

Within the research framework, performance is viewed as a significant indicator at the organizational level. Some authors consider that the success of an organization depends on its employees’ good performance (Colquitt, LePine, & Wesson, 2010). Work performance is generally conceptualized as “the actions and behaviors that are under the control of the individual and that contribute to the organization’s objectives” (Rotundo & Sackett, 2002, p. 66). Moreover, Campbell (1990) states that work performance is a multidimensional construct, an opinion that is shared by other researchers (Borman & Motowidlo, 1993; Goodman & Svyantek, 1999; Johnson, 2009).

In the HERO model, team performance is considered an essential element included in the component “healthy organizational results”, where performance is thought to respond to a holistic interpretation that goes beyond strictly work-related aspects. Thus, team performance is understood as an aggregated value in the organization, produced by a set of work-team behaviors that contribute directly or indirectly to the organization’s objectives (Borman & Motowidlo, 1997). In this regard, Goodman and Svyantek (1999) propose two performance dimensions: (1) Intra-role, defined as those activities that contribute directly or indirectly to the technical core of the organization and that vary between diverse jobs within the same organization; and (2) Extra-role, defined as those activities that are not formally part of the job and that employees perform voluntarily.

Evidence shows that transformational leadership has a strong influence on performance (Gang Wang, Oh, Courtright, & Colbert, 2011). However, there is still little understanding of the processes through which leadership exercises this influence, as few studies have focused on the mediating influence of other strategic variables (Bass, 1999; Yukl, 2006; García-Morales, Llorens-Montes, & Verdú-Jover, 2008; Pourbakhshdar et al., 2016).

Different studies support the relationship between trust and organizational performance (Acosta et al., 2015; Mayer et al., 2005; Brown, Gray, McHardy, & Taylor, 2015; Zawawi & Nasurdin, 2016). In other studies, horizontal trust has been associated with improvements in communication, job satisfaction, commitment, learning, decision-making, team work, and performance (Costa, 2003; Kiffin-Petersen & Corder, 2003; Lee, Stajkovic, & Cho, 2011; Salanova, Acosta, Llorens, & Le Blanc, 2017). Furthermore, some studies point out the mediator role of organizational trust in the relationship between resources and performance at the work team level (Palanski, Kahai, & Yammarino, 2011; Tan & Lim, 2009; Zhu et al., 2013).

Based on these arguments, the present study aims to provide evidence about the mediator role of horizontal trust between transformational leadership and performance at the work team level.

The Present Study

Based on the HERO model (Salanova et al., 2012), our objective is to evaluate the relationship between the transformational leadership perceived by the work team and the team performance perceived by the supervisor, taking into account the mediator role of the horizontal trust perceived by the work team in the healthcare organization context.

The novel aspects of this study are the following: (1) It analyzes the relationships among variables from the perspective of different key agents in the organization (work teams and supervisors); (2) It analyzes the mediator role of horizontal trust in the relationship between transformational leadership and performance at the work team level; (3) It focuses on the healthcare context, where the work team plays a key role, and where it is important to more closely examine organizational trust as a strategic variable in the development of healthy and resilient healthcare organizations.

Based on the above, we propose the following hypothesis:

Hypothesis 1. We expect that the horizontal trust perceived by the work team will fully mediate the relationship between transformational leadership perceived by the work team and team performance perceived by the supervisor (see Figure 1).
Method

Participants

The participants in the present study are 388 workers grouped in 54 work teams and the 54 supervisors of these teams, from four healthcare centers (three Hospitals and one Primary Attention Center). The universe of the population is the healthcare context of the Valencian Community, and the sampling was non-probabilistic. In the study, 53% of the total number of workers participated, so that it is a representative sample with a margin of error of .03 and 90% reliability.

Of all the workers who participated in the study, 62% are women, and 78% have a permanent contract and a mean of 5.25 years working in the firm ($SD = 3.6$). Specifically, the workers in Hospitals 1, 2 and 3 have been working for a mean of 4 ($SD = 2.1$), 10 ($SD = 9.8$) and 4 ($SD = 1.2$) years, respectively. The mean number of years working in the Primary Healthcare center is 3.6 ($SD = 3.6$). Finally, the work teams have an average of 7.2 ($SD = 6$) workers.

A criterion for participating in the study, based on McCarthy (1992), is that the workers had to have worked in the firm for at least six months. This criterion provides guarantees about adaptation to the job and the firm after having overcome the first phases of the organizational socialization process. Furthermore, in the present study, the work team is understood as a group of workers who work together under the same supervisor and collectively share responsibilities related to their performance results (George, 1990).

Procedure

Regarding the procedure, the first contact was made with a key agent of the management team of each healthcare center in order to present the research project and request their participation in it. After various initial interviews, and after approval had been received from the management of each healthcare center, the study was carried out. Informative meetings were held with the workers and supervisors of...
each healthcare center to present the objectives of the project, ethical aspects, and the procedure to follow.

The workers and supervisors who agreed to participate in the study filled out either a self-report questionnaire provided in paper format or the online version. The questionnaire takes approximately 30 minutes to complete.

Regarding the ethical aspects of the present study, the researchers guaranteed that the applicable norm would be followed at all times. Specifically, as required by Organic Law 15/1999, of December 13th, on Protection of Data of a Personal Nature, the data were handled with complete confidentiality.

Work Team Measures

Transformational leadership, considered as the independent variable, was measured with the questionnaire by Rafferty and Griffin (2004), based on the Multifactor Leadership Questionnaire (Bass, 1985; Bass & Avolio, 1990), and adapted to Spanish and included in the HERO-HOS questionnaire by Salanova et al. (2012) in its versions for employees and supervisors in the healthcare context. This measurement instrument contains 15 items grouped in five dimensions: (1) Vision, three items (alpha = .74) (e.g., “Our immediate boss understands perfectly what the group’s objectives are”); (2) Inspirational communication, three items (alpha = .88) (e.g., “Our immediate boss encourages us to see changes as situations full of opportunities”); (3) Intellectual stimulation, three items (alpha = .84) (e.g., “Our immediate boss encourages us to reconsider some basic questions that we had accepted about our work”); (4) Support, three items (alpha = .93) (e.g., “Our immediate boss thinks about our needs”); (5) Personal recognition, three items (alpha = .96) (e.g., “Our immediate boss congratulates us personally when we do an excellent job”). All the items on the questionnaire are formulated from the perspective of the work team, and they are measured on a seven-point Likert scale ranging from 0 (Strongly disagree) to 6 (Strongly agree).

Horizontal trust, considered as a mediator variable, was measured through the questionnaire by McAllister (1995), adapted and included in the HERO-HOS questionnaire by Salanova et al. (2012), in its versions for employees and supervisors. This instrument (alpha = .75) contains four items (e.g., “In this organization, we can share our ideas, emotions, and hopes”). The workers answered with their own work team in mind, using a seven-point Likert scale ranging from 0 (Strongly disagree) to 6 (Strongly agree).

Supervisors’ Measures

Team performance was the dependent variable. It is a multidimensional variable composed of two dimensions: intra-role performance and extra-role performance. Team performance was evaluated through six items that correspond to an adaptation of the performance scale by Goodman and Svanytek (1999), adapted and included in the HERO-HOS questionnaire by Salanova et al. (2012), in its versions for employees and supervisors. It consists of three items about intra-role performance (alpha = .72) and three others about extra-role performance (alpha = .83). An example of an item from the intra-role dimension is “The team I supervise fulfills all the functions and tasks the job requires”. An example of an item from the extra-role dimension is “The team I supervise performs functions that are not required, but improve the organization’s image. Supervisors answered with their own work team in mind, using a seven-point Likert scale ranging from 0 (Strongly disagree) to 6 (Strongly agree).

Data Analysis

Using version 22.0 of the IBM-SPSS software, and based on the individual databases, an analysis of the internal consistency of the scales was performed by calculating the Cronbach’s Alpha coefficient. Next, and because the study is focused on the work-group level, the agreement indices for the different scales were calculated (Chen, Mathieu, & Bliwise, 2004). For this purpose, two complementary methods were used. The first method was to calculate the Intra-class Correlation Coefficients, CCI1 and CCI2 (Glick, 1985), an approach based on consistency, where agreement between work teams is indicated when the CCI1 and CCI2 values are above .12 and .60, respectively (Bliwise, 2000; Glick, 1985). The second method was to calculate as consensus measures: (1) the Average Deviation Index, ADm, where the criterion for a seven-point scale is that the ADm must be equal to or less than 1.20 (Burke, Finkelstein, & Dusig, 1999; Cohen, Doveh, & Nahum-Shani, 2010), and (2) the Within-Group Interrater Reliability Index, rwg, with index values equal to or above.70 showing good agreement (James, Demaree, & Wolf, 1993).

Finally, an analysis of variance (ANOVA) was carried out to show significant differences between the work teams on the scales evaluated. In addition, descriptive analyses were performed, as well as analyses of the correlations between the scales at the individual level and at the aggregated data level, that is, the work-team level.

To analyze the relationships among the variables transformational leadership, horizontal trust in work teams, and team performance evaluated by the supervisor, Structural Equations analysis (SEM) was performed on the proposed models. For this purpose, the statistical packet used was version 22.0 of Analysis of Moment Structures (AMOS), created by Arbuckle (2003).

We compared two mediation models in order to verify the study hypothesis: M1, the proposed model, in which horizontal trust (at the work-team level) fully mediates the relationship between transformational leadership (at the work-team level) and team performance (evaluated by the supervisor); M3, partial mediation model, which considers the existence of a direct relationship between transformational leadership (at the work-team level) and team performance (evaluated by the supervisor). Therefore, in this model, horizontal trust (at the work-team level) would partially mediate the
relationship between transformational leadership (at the work-team level) and team performance (evaluated by the supervisor).

Because the study is cross-sectional, and following the recommendations by Kline (1998), in order to present all the alternatives compatible with the theory and avoid choosing one of them arbitrarily, two alternative models were analyzed: Model 1, in which the relationship between transformational leadership and horizontal trust, based on the perception of the workers at the team level, is mediated by team performance evaluated by the supervisor; and Model 2, in which the relationship between horizontal trust (at the work-team level) and team performance (evaluated by the supervisor) is mediated by transformational leadership (at the work-team level).

The method used to estimate the structural models is maximum likelihood. Among the indicators used, the following absolute fit indexes were considered: the Chi-square ($\chi^2$) index, the Chi-square ($\chi^2$/gl), and the Root Mean Square Error of Approximation, (RMSEA). The relative fit measures we used were: The Normed Fit Index, (NFI); Bentler & Bonett, 1980), the Non-normalized Fit Index (also called the Tucker-Lewis Index, TLI or NNFI), the Comparative Fit Index, (CFI; Bentler, 1990), and the Incremental Fit Index, (IFI); Bol- len, 1986). In addition, the Akaike Information Criterion (AIC) was calculated to compare non-nested competitive models. These fit measures were suggested by Marsh, Balla, and Hau (1996). A $p$ value associated with a Chi-square above .05 indicates good fit; likewise, chi square ($\chi^2$/gl), used to reduce the sensitivity of $\chi^2$ to the sample size, indicates a good fit of the model for values below 2. The RMSEA index responds to how well the model would fit the covariance matrix of the population. RMSEA results below .05 indicate very good fit; values between .05 and .08 are considered acceptable fit; values between .08 and .10 indicate a moderate fit; and values above .10 indicate a poor fit and, therefore, suggest that the model should be rejected (Browne & Cudeck, 1993). Regarding the TLI, IFI, CFI and NFI indices, values above .90 are considered indicators of good fit (Hoyle, 1995). With regard to the AIC, the lower the levels of AIC, the better the fit is supposed to be (Akaike, 1987).

Next, in order to test the proposed mediation model, an analysis was performed following Baron and Kenny’s steps (1986). And finally, the Sobel test (1988) was carried out to confirm the indirect effect of transformational leadership evaluated by the team of workers on team performance evaluated by the supervisor, through the horizontal trust of the work team.

Results

Descriptive Analyses and Data Aggregation

Table 1 shows the results for the means, standard deviations, correlations, intraclass correlation indices (CCI1 and CCI2), and ADm and rwg agreement indices for the study variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$M$</th>
<th>$SD$</th>
<th>CCI1</th>
<th>CCI2</th>
<th>ADm</th>
<th>rwg</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TL Vision</td>
<td>4.10</td>
<td>.90</td>
<td>.39</td>
<td>.75</td>
<td>.80</td>
<td>.60</td>
<td>.77</td>
<td>.84</td>
<td>.75</td>
<td>.82</td>
<td>.69</td>
<td>.63</td>
<td>.26</td>
<td>.32</td>
</tr>
<tr>
<td>2. TL Communication</td>
<td>3.93</td>
<td>.98</td>
<td>.79</td>
<td>.92</td>
<td>.29</td>
<td>.93</td>
<td>.58</td>
<td>(.93)</td>
<td>.85</td>
<td>.87</td>
<td>.82</td>
<td>.60</td>
<td>.24</td>
<td>.29</td>
</tr>
<tr>
<td>3. TL Stimulation</td>
<td>3.55</td>
<td>1.04</td>
<td>.82</td>
<td>.93</td>
<td>.27</td>
<td>.94</td>
<td>.51</td>
<td><strong>(.77)</strong></td>
<td>.77</td>
<td>(.95)</td>
<td>.83</td>
<td>.76</td>
<td>.51</td>
<td>.25</td>
</tr>
<tr>
<td>4. TL Support</td>
<td>3.78</td>
<td>1.16</td>
<td>.91</td>
<td>.97</td>
<td>.21</td>
<td>.96</td>
<td>.54</td>
<td><strong>(.72)</strong></td>
<td>.68</td>
<td>(.96)</td>
<td>.83</td>
<td>.58</td>
<td>.28</td>
<td>.27</td>
</tr>
<tr>
<td>5. TL Recognition</td>
<td>3.77</td>
<td>1.09</td>
<td>.94</td>
<td>.98</td>
<td>.15</td>
<td>.98</td>
<td>.55</td>
<td><strong>(.75)</strong></td>
<td>.75</td>
<td>(.78)</td>
<td>.98</td>
<td>.49</td>
<td>.34</td>
<td>.35</td>
</tr>
<tr>
<td>6. Horizontal Trust</td>
<td>4.36</td>
<td>.83</td>
<td>.78</td>
<td>.94</td>
<td>.27</td>
<td>.95</td>
<td>.45</td>
<td><strong>(.46)</strong></td>
<td>.41</td>
<td>(.49)</td>
<td>.49</td>
<td>.66</td>
<td>(.94)</td>
<td>.34</td>
</tr>
<tr>
<td>7. Intra-role Performance</td>
<td>4.40</td>
<td>.87</td>
<td>.41</td>
<td>.67</td>
<td>.41</td>
<td>.80</td>
<td>.38</td>
<td><strong>(.30)</strong></td>
<td>.26</td>
<td>(.31)</td>
<td>.22</td>
<td>.57</td>
<td>(.87)</td>
<td>.67</td>
</tr>
<tr>
<td>8. Extra-role Performance</td>
<td>4.60</td>
<td>.96</td>
<td>.66</td>
<td>.85</td>
<td>.47</td>
<td>.83</td>
<td>.44</td>
<td><strong>(.35)</strong></td>
<td>.34</td>
<td>(.38)</td>
<td>.33</td>
<td>.67</td>
<td>.54</td>
<td>(.66)</td>
</tr>
</tbody>
</table>

Note. The correlations are presented at the individual level (under the diagonal) and at the team level (above the diagonal); internal consistency (Cronbach’s alpha on the diagonal in parentheses). * $p < .05$; ** $p < .01$

Given that the study focuses on the work-team level, and taking into account the two approaches chosen to calculate the scales’ agreement indices used to justify the data aggregation (Chen et al., 2004), the results obtained were: (1) For the consistency indices using Intraclass Correlation Coefficients, CCI1 ranged from .39 to .94, and the CCI2 values were maintained in a range from .67 to .98; (2) The agreement indices using the Average Deviation Index, ADm, ranged from .15 to .80, and using the Within-Group Interater Reliability, rwg, the indices met the criterion of being above .70 (James et al., 1993), except in the case of the variable Transformational leadership (TL Vision), which obtained a result of .60. Therefore, we can conclude that the inter-group agreement fulfills the criteria for aggregating the group members’ perceptions at the work-team level.

The results of the ANOVA show significant differences between groups on the scales evaluated, supporting the validity of the measures: TL Vision, $F (53, 334) = 3.29$, $p < .001$; TL Communication, $F (53, 334) = 2.41$, $p < .001$; TL Stimulation, $F (53, 332) = 2.78$, $p < .001$; TL Support, $F (53, 331) = 2.29$, $p < .001$; TL Recognition, $F (53, 332) = 2.52$, $p < .001$; Horizontal Trust, $F (53, 327) = 2.76$, $p < .001$; Intra-role Performance, $F (53, 81) = 2.87$, $p < .001$ and Extra-role Performance, $F (53, 82) = 2.04$, $p < .002$.

The results of the analysis of the correlations between the scales show that all the dimensions of transformational leadership (at the work-team level) correlate positively and
significantly with each other, with values ranging from .69 to .87 (p < .01). The horizontal trust variable (at the work-team level) correlates positively and significantly with the dimensions of leadership (at the work-team level), with values ranging from .49 to .62 (p < .01), and with the dimension of team performance (evaluated by the supervisor), with values ranging from .31 to .34 (p < .05). The dimensions of team performance evaluated by the supervisor show a positive and significant correlation of .67 (p < .01) with each other. However, the dimension of intra-role performance (evaluated by the supervisor) does not correlate significantly with the vision, communication, or intellectual stimulation dimensions of transformational leadership (at the work-team level), and there is no significant correlation between the extra-role performance and intellectual stimulation dimensions of transformational leadership.

**Model Fit**

To perform the analysis of the Structural Equations Models (SEM), we used the data aggregated at the team level (N = 54) (see Table 2). The transformational leadership variable has five indicators: vision, communication, intellectual stimulation, support, and recognition; the horizontal trust variable has only one indicator, and the team performance variable has two indicators: intra-role performance and extra-role performance.

The results obtained for the proposed model, M1, in which horizontal trust (at the team level) fully mediates the relationship between transformational leadership (at the team level) and team performance (evaluated by the supervisor) are the following: $\chi^2(19) = 25.28$; $p = .15$; $\chi^2/g = 1.33$; TLI = .97; IFI = .98; CFI = .98; NFI = .93 and RMSEA = .07; AIC = 75.27. Regarding M2, the partial mediation model, which considers a direct relationship between transformational leadership (at the team level) and team performance (evaluated by the supervisor), the following values were obtained: $\chi^2(18) = 24.99$; $p = .12$; $\chi^2/g = 1.40$; TLI = .96; IFI = .98; CFI = .98; NFI = .93 and RMSEA = .09; AIC = 77.00. The Chi-squared tests between M2 and M1 did not show significant differences between the two models, Delta $\chi^2(1) = .29$, ns. However, the results obtained support the proposed model, M1, because: (1) It is more parsimonious than M2 as M1 showed lower AIC values; (2) In the case of M2, partial mediation, the relationship between horizontal trust and team performance was no longer significant, $\beta = .34, p = .13$; (3) In the partial mediation model, M3, the results show that the relationship between transformational leadership and team performance was not significant, $\beta = .11, p = .59$. Therefore, the proposed model, M1, fits the data better, supporting the hypothesis of full mediation.

Based on model M1, and to show that the model was not chosen arbitrarily (Kline, 1998), two other alternative models were analyzed (M3 and M4) with the following results: (1) In M3, the team performance variable (evaluated by the supervisor) fully mediates the relationship between transformational leadership (at the team level) and horizontal trust (at the team level), $\chi^2(19) = 43.03$; $p = .01$; $\chi^2/g = 2.30$; TLI = .89; IFI = .93; CFI = .93; NFI = .88 and RMSEA = .15; AIC = 93.03; (2) In the case of M4, the variable transformational leadership (work team) fully mediates the relationship between horizontal trust (work team) and team performance (evaluated by the supervisor), $\chi^2(19) = 27.30$; $p = .09$; $\chi^2/g = 1.44$; TLI = .96; IFI = .93; CFI = .97; NFI = .92 and RMSEA = .10; AIC = 77.30. The Chi-squared tests performed between the models M1-M1, M1-M2, M1-M3, M4-M2 and M4-M3 showed non-significant results. Even though M4 offers a generally good fit (leading to the idea that the relationship between trust and leadership could be longitudinal), the results obtained continue to support model M1, proposed from the beginning of the study, as this model continues to be more parsimonious and has a lower AIC value.

**Table 2. Fit indices for Structural Equations Models (N = 54)**

<table>
<thead>
<tr>
<th>Modelos</th>
<th>$\chi^2$</th>
<th>$g^2$</th>
<th>$p$</th>
<th>$\chi^2/g$</th>
<th>TLI</th>
<th>IFI</th>
<th>CFI</th>
<th>NFI</th>
<th>RMSA</th>
<th>AIC</th>
<th>$\Delta \chi^2$</th>
<th>ATLI</th>
<th>AIFI</th>
<th>ACFI</th>
<th>ANFI</th>
<th>ARMSA</th>
<th>AAIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>25.28</td>
<td>19.15</td>
<td>1.33</td>
<td>.97</td>
<td>.98</td>
<td>.98</td>
<td>.93</td>
<td>.07</td>
<td>75.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>24.99</td>
<td>18.12</td>
<td>1.40</td>
<td>.96</td>
<td>.98</td>
<td>.98</td>
<td>.93</td>
<td>.09</td>
<td>77.00</td>
<td>.29</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>1.73</td>
<td></td>
</tr>
<tr>
<td>Diff. M2-M1</td>
<td>43.03</td>
<td>19.01</td>
<td>2.30</td>
<td>.89</td>
<td>.93</td>
<td>.93</td>
<td>.88</td>
<td>.15</td>
<td>93.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>17.75</td>
<td>18.04</td>
<td>1.07</td>
<td>.05</td>
<td>.05</td>
<td>.05</td>
<td>.05</td>
<td>.06</td>
<td>17.76</td>
<td>.02</td>
<td>.01</td>
<td>.05</td>
<td>.01</td>
<td>.01</td>
<td>.03</td>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td>Diff. M3-M2</td>
<td>27.30</td>
<td>19.09</td>
<td>1.44</td>
<td>.96</td>
<td>.93</td>
<td>.97</td>
<td>.92</td>
<td>.10</td>
<td>77.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>2.02</td>
<td>2.31</td>
<td>0.07</td>
<td>.04</td>
<td>.04</td>
<td>.04</td>
<td>.05</td>
<td>.15</td>
<td>15.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: $\chi^2 =$ Chi-square; $g^2 =$ degrees of freedom; TLI = Tucker-Lewis Index; IFI = Incremental Fit; CFI = Comparative Fit Index; NFI = Normed Fit Index; RMSEA = Root Mean Square Error of Approximation; AIC = Akaike Information Criterion; Diff. = difference; $\Delta = $ difference.

Next, we evaluated the mediation of M1, following Baron and Kenny’s four steps (1986): (1) Transformational leadership (at the team level) is positively and significantly related to team performance (evaluated by the supervisor) ($\beta = .36, p < .05$); (2) Transformational leadership is significantly related to horizontal trust ($\beta = .68, p < .001$); (3) Hor-
Horizontal trust (at the team level) is significantly related to team performance (evaluated by the supervisor) ($\beta = .43, p < .01$); (4) The relationship between transformational leadership (at the team level) and team performance (evaluated by the supervisor) is no longer significant when controlled by horizontal trust (at the team level) ($\beta = .11, p = .59$). Therefore, the four conditions proposed by Baron and Kenny (1986) are met, showing that the results are consistent with the full mediation hypothesis, proposed in M1.

The Sobel test (1982) confirms the indirect effect of transformational leadership perceived by the work team on team performance evaluated by the supervisor, through the horizontal trust of the work team (Sobel test = 2.40, $p < .01$). The results show that this relationship is statistically significant, and that the mediation is full.

Consequently, the results of the SEM analysis provide evidence in favor of M1. Figure 2 shows the representation of the final proposed model.

All the scales used score significantly in the corresponding latent factors, with factorial weights ranging from .79 to .95. The review of the regression estimators for the proposed model, M1, reveals that transformational leadership (at the team level) is positively and significantly related to horizontal trust (at the work team level), $\beta = .70, p < .001$, and this, in turn, is positively and significantly related to team performance (evaluated by the supervisor), $\beta = .45, p < .01$. In addition, transformational leadership explains 47.4% of the variance in horizontal trust, $R^2 = .47$, which explains 20% of the variance in team performance, $R^2 = .20$ ($R^2_{\text{intra}} = .72, R^2_{\text{extra}} = .63$).

**Figure 2.** SEM analysis of transformational leadership (TL), organizational trust, and team performance using aggregated data ($N = 54$).

* ***$p < .001$; **$p < .01$; ns = non-significant.*
Discussion

Using the HERO model as a base, our aim was to evaluate the mediator role of organizational trust (i.e., horizontal trust) between transformational leadership and performance at the team level in the healthcare organization context. We expected that the shared perception of horizontal trust by the work team would fully mediate the relationship between transformational leadership perceived by the work team and team performance perceived by the supervisor. The results of the Structural Equations Models showed, as expected, that horizontal trust perceived by the work team fully mediates the relationship between transformational leadership perceived by the work team and team performance perceived by the supervisor.

In the organizational context, this common perception of transformational leadership, as a social resource of the organization, can cause interaction processes to emerge in workers that increase this shared vision of trust among team members. The workers have a common scenario in which to interact both consciously and unconsciously (Torrente, Salanova, Llorens, & Schaufeli, 2015), in order to reciprocally influence and trigger a positive shared state, as in the case of horizontal trust (Bakker, Van Emmerik, & Euwema, 2006).

The results obtained contribute evidence to the previous research on the importance of horizontal trust as a strategic mediator variable between transformational leadership at the team level and team performance (i.e., Costa & Anderson, 2011; Palanski, et al., 2011; Tan & Lim, 2009).

In addition, the present study provides evidence for the three elements that make up the HERO model (Salanova et al., 2012), which are: healthy organizational resources and practices (i.e., transformational leadership); healthy employees (i.e., horizontal trust); and healthy organizational results (i.e., team performance), through aggregated data at the team level taken from different information sources (i.e., workers and supervisors). The results obtained at the level of work teams and the supervisors of these teams show how resources such as transformational leadership fosters horizontal trust, viewed as one of the dimensions that the model interprets as healthy workers, which in turn increases the level of intra- and extra-role performance, dimensions the model regards as healthy results (Salanova, Martínez, & Llorens, 2014).

The present study advances the research, given that: (1) It considers the work-team level; (2) It considers the relationships that can be maintained between the perceptions of different key agents, as in the case of the work team and the supervisor; (3) It analyzes the mediator role of horizontal trust in the relationship between transformational leadership and team performance, whereas most of the research on organizational trust has focused on the analysis of vertical trust; (4) It focuses on the healthcare context because of its specific characteristics, where the work team plays a protagonist role, and due to the importance of further examining organizational trust as a strategic variable in the development of healthy and resilient healthcare organizations.

We can conclude that when teams are the main work structure in a certain organization, the healthcare organization in our case, the promotion of policies oriented toward teams will be the most efficient management behavior. Along these lines, the results of our study show the need for social resources and organizational practices that can trigger positive consequences in the professionals and produce the desired outcomes. Therefore, the results support the hypothesis proposed in this research.

Theoretical and Practical Implications

From a theoretical point of view, the present study extends the current knowledge about the key role of horizontal trust between the social resources of the organization (i.e., transformational leadership perceived by team members) and the supervisor’s perception of team performance, taking into account data aggregated at the team level in four healthcare centers in Spain. Moreover, the results obtained support the HERO model, and they provide evidence of its theoretical validity in explaining team-level processes in a socially important sample like the healthcare context.

Among the current tendencies in the area of healthcare organizations, there is special interest in new management models characterized by multi-professional and multi-disciplinary work teams, where professionals have a more autonomous, participatory, and committed role, and they are more involved in decision-making processes and resource management. Therefore, from a practical point of view, the results of our study contribute knowledge that allows Human Resources Management in healthcare organizations to: (1) launch strategies that foster organizational trust, in terms of horizontal trust in work teams, taking into account the need for transformational leaders who encourage horizontal trust; and (2) consider the impact that these practices, through the trust built, can have on team performance and, therefore, on improving healthy results.

Limitations and Future Research

Some of the main limitations of our study are the following: (1) We use a non-probabilistic, convenience sample, which could affect the possible generalization of the results. However, it is a heterogeneous sample because it includes different teams from different healthcare firms and different healthcare levels, which allows us to obtain a view of the reality of the organization; (2) The data were obtained through self-report measures. However, we have to consider that the data were considered as shared perceptions at the level of work teams belonging to different firms within the healthcare sector. In addition, two sources of information were used (i.e., workers and supervisors), in order to increase the validity of the scores obtained and reduce the effects of common variance; (3) The design is cross-sectional,
References


and so it is not possible to draw conclusions about causality between the variables included in the model. Therefore, future research should conduct longitudinal studies to discover causality. In fact, through different scientific studies, Salanova, Llorens, Acosta, and Torrence (2013) show the relevance of carrying out positive interventions based on practical research and a professional scientific model.

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