

# Human capital sustainability leadership nei lavoratori: dai tratti di personalità all'empatia e alla compassione

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## Sommario

Questo studio ha esaminato le relazioni tra empatia e *Human Capital Sustainability Leadership* (HCSL) e le relazioni tra compassione e *Human Capital Sustainability Leadership*, controllando per entrambe per i tratti di personalità. Centoquarantatré lavoratori italiani hanno compilato il *Big Five Questionnaire* (BFQ), l'*Interpersonal Reactivity Index* (IRI), la *Compassion Scale* (CS) e la *Human Capital Sustainability Leadership Scale* (HCSLS). I risultati hanno mostrato che sia l'empatia sia la compassione spiegano una percentuale di varianza incrementale in relazione alla HCSL oltre ai tratti di personalità. Questi risultati suggeriscono la rilevanza dell'empatia e della compassione in una leadership orientata alla promozione della sostenibilità del capitale umano.

## Parole chiave

Empatia, Compassione, *Human Capital Sustainability Leadership*, Tratti di Personalità.

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# Human Capital Sustainability Leadership in Workers: From Personality Traits to Empathy and Compassion

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## Abstract

This study examined the relationships between empathy and human capital sustainability leadership, and the relationships between compassion and human capital sustainability leadership, both controlling for the effect of personality traits. One hundred and forty-nine Italian workers were administered the *Big Five Questionnaire* (BFQ), the *Interpersonal Reactivity Index* (IRI), the *Compassion Scale* (CS), and the *Human Capital Sustainability Leadership Scale* (HCSLS). The results showed that both empathy and compassion explained additional variance in HCSL beyond personality traits. These findings suggest the relevance of empathy and compassion in leadership aimed at promoting human capital sustainability.

## Keywords

Empathy, Compassion, Human capital sustainability leadership, Personality traits.

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## Introduction

In recent years, the strategic importance of sustainable development of human resources has increasingly been recognized as a crucial aspect in enhancing healthy organizations (Di Fabio, 2017a, 2024; Di Fabio et al., 2020; Peiró et al., 2019, 2021) also within the current framework of the psychology of sustainability and sustainable development (PSSD) (Di Fabio, 2017b, 2021; Di Fabio & Cooper, 2023; Di Fabio & Peiró, 2018, 2023; Di Fabio & Rosen, 2018, 2020; Rosen & Di Fabio, 2023). This emerging field, embedded within the broader transdisciplinary domain of sustainability science (Komiyama & Takeuchi, 2006; Sahle et al., 2025; Takeuchi et al., 2017), introduces the value of psychological lenses in our understanding of how sustainable development can be effectively achieved and maintained (Di Fabio & Rosen, 2018; Peiró, 2025).

Leadership can play a crucial role in shaping organizational environments that foster human capital sustainability (Di Fabio & Peiró, 2018). Leadership is increasingly viewed as a key aspect through which sustainability principles can be translated into organizational practices (Di Fabio & Peiró, 2023). Within PSSD area, the construct of human capital sustainability leadership (HCSL) (Di Fabio & Peiró, 2018) was developed. The HCSL is centered «on healthy people as flourishing and resilient workers, and on healthy organizations as thriving and successful environments characterized by the positive circle of long-term wellbeing and performance» (Di Fabio & Peiró, 2018, p. 11). The HCSL is a higher order construct that includes: ethical, sustainable, mindful, and servant leadership.

Ethical leadership emphasizes fairness, justice, and integrity, guiding leaders to align their behavior with shared values, make just decisions, and demonstrate respect for others. Sustainable leadership is oriented toward long-term effectiveness, promoting ongoing learning, the development of human resources, and the appreciation of diversity. Mindful leadership highlights awareness of the present moment and emotional regulation, enabling leaders to remain grounded and attentive to their impact, particularly in high-pressure situations. Servant leadership prioritizes the development and wellbeing of followers, being grounded in genuine concern and an ethical commitment that goes beyond the mere pursuit of organizational objectives. HCSL is an advanced kind of leadership worthy as formal leadership for managerial roles but also as informal leadership for other roles in organizations (Peiró et al., 2023). An informal leader refers to a member of a group who gains recognition from others for their capacity to encourage, influence, and guide colleagues in work-related activities despite lacking a formal position of authority (Lawson et al., 2020). Within this perspective, the HCSL framework (Di Fabio & Peiró, 2018) highlights the central role of interpersonal relationships with co-workers in supporting and maintaining informal leader-

ship. HCSL is thus an advanced vertical leadership style for managers but also a horizontal leadership style for other roles in organizations, supporting productive relatedness and performances within organizational contexts (Peiró et al., 2023).

In the literature, there are studies of HCSL with variables such as workplace relational civility (Di Fabio & Gori, 2021), emotional intelligence (Di Fabio & Svicher, 2021), positive relational management (Di Fabio et al., 2023), and intra-preneurial self-capital (Palazzeschi & Di Fabio, 2025), controlling for the effect of personality traits. Personality traits do not exhaust the explanation of HCSL. Other resources that include relational and emotional aspects could emerge as having an incremental role. For this reason, empathy and compassion could be also introduced as promising resources in relation to HCSL.

Empathy is commonly defined as a multidimensional construct that involves both cognitive and affective processes, enabling individuals to understand and share others' internal states (Davis, 1980). According to this perspective, empathy encompasses the ability to adopt another person's point of view as well as emotional responses oriented toward others' experiences. The *Interpersonal Reactivity Index* (IRI; Davis, 1980) operationalizes empathy through four dimensions: Fantasy, indicating the tendency to imaginatively immerse oneself in the emotions and behaviors of fictional characters portrayed in books, films, and theatrical works; Empathic concern, reflecting other-oriented feelings of compassion and concern; Perspective taking, referring to the cognitive tendency to adopt others' viewpoints; and Personal comfort, capturing self-focused comfort in response to others' suffering.

Research has suggested that empathy can play a beneficial role in leadership (Holt & Marques, 2012; Muss et al., 2025). Empathy enables leaders to understand and respond to the needs of team members, consider diverse viewpoints during problem-solving, and actively involve others in decision-making processes (Tzouramani, 2016). Defined as the capacity to adopt others' perspectives and experience feelings of warmth and concern for them (Davis, 1980), empathy may be positively related to human capital sustainability, which emphasizes a supportive and people-centered orientation that acknowledges and addresses collaborators' needs (Di Fabio & Peiró, 2018).

Regarding compassion, Goetz et al. (2010) emphasized that this construct is multifaceted, and can be distinguished from related states based on differences in cognitive appraisals, emotional experiences, physiological reactions, and the behavioral tendencies activated when responding to others' suffering. Building on this perspective, Strauss et al. (2016), through a comprehensive review of the compassion literature, further underlined the construct's multidimensional nature. Their findings identified five core components of compassion: 1) Recognizing suffering; 2) Understanding the universality of suffering as part of the hu-

man experience; 3) Emotionally connecting with and understanding the feelings of those who suffer; 4) Tolerating uncomfortable emotions elicited by suffering in order to remain open to others' pain; 5) Acting, or being motivated to act, to alleviate suffering. Strauss et al. (2016) also systematically reviewed existing compassion measures, assessing their psychometric properties. They concluded that none of the available scales adequately captured all five dimensions of compassion, and that many instruments demonstrated weak or insufficiently evaluated psychometric qualities. In response to these limitations, Gu et al. (2017) developed the *Compassion Scale* (CS), designed to assess the five fundamental dimensions of compassion identified in the literature and used in this study.

Compassion represents a valuable resource in healthy organizations (Di Fabio & Saklofske, 2021) and also in relation to leadership resource for addressing the complex challenges of the twenty-first century (Ashta et al., 2024; Richard Marcel & Kamalanabhan, 2025; Ramachandran et al., 2024). Compassion (defined as the ability to recognize suffering, acknowledge its universality, emotionally connect with others, tolerate distressing emotions, and take action to reduce suffering, Gu et al., 2017) may be positively related to HCSL. In fact, HCSL refers to leadership behaviors that express care, kindness, and compassion, demonstrate awareness of one's presence and its influence on others, and adopt a servant-oriented approach that identifies and addresses co-workers' needs based on a sense of moral responsibility (Di Fabio & Peiró, 2018).

To the best of our knowledge, in the literature, the HCSL has not yet been examined in relation to empathy and compassion. The aim of the present study is thus to examine the relationships between empathy and HCSL on the one hand, and relationships between compassion and HCSL on the other hand, both controlling for the effect of personality traits.

The hypotheses were formulated as follows:

- *H1*. A positive relationship will emerge between empathy and HCSL.
- *H2*. Empathy will account for an additional percentage of variance in HCSL beyond that explained by personality traits.
- *H3*. A positive relationship will emerge between compassion and HCSL.
- *H4*. Compassion will account for an additional percentage of variance in HCSL beyond that explained by personality traits.

## Method

### *Participants*

One hundred and forty-nine Italian workers with a mean age of 50.03 years ( $SD = 10.89$ ). Among them, 47.00% males: 53.00% female.

## Measures

*Big Five Questionnaire* (BFQ; Caprara et al., 1993). It is composed of 132 items on a 5-point Likert scale (from 1 = *Absolutely false* to 5 = *Absolutely true*). The five dimensions are: Extraversion («I think I am an active and energetic person»), Cronbach's alpha .81; Agreeableness («I understand when people need my help»), Cronbach's alpha .71; Conscientiousness («I tend to be very thoughtful») Cronbach's alpha .81; Emotional Stability («I do not often feel tense»), Cronbach's alpha .90; and Openness («I am always informed about what is happening in the world»), Cronbach's alpha .75.

*The Interpersonal Reactivity Index* (IRI; Davis 1980; Italian version Albiero et al., 2006) was used. The IRI is composed of 28 items on a 4-point Likert scale (1 = *Never true* to 4 = *Always true*).

The measure has four dimensions: Fantasy («I really get involved with the feelings of the characters in a novel») Cronbach's alpha .83; Empathic concern («I often have tender, concerned feelings for people less fortunate than me») Cronbach's alpha .86; Perspective taking («I believe that there are two sides to every question and try to look at them both») Cronbach's alpha .84; and Personal comfort («In emergency situations, I feel apprehensive and ill-at-ease» – reverse item), Cronbach's alpha .81.

*Compassion Scale* (CS, Gu et al., 2017; Italian version Di Fabio, 2019). It is composed of 22 items on a 7-point Likert scale response format (1 = *Not at all true of me* to 7 = *Completely true of me*). The scale has five dimensions: Recognizing suffering («I find it easy to recognize when someone is suffering or in need») Cronbach's alpha .80; Understanding the universality of suffering («I know that everyone feels down») Cronbach's alpha .81; Emotional connection («I don't worry about other people's problems» – reverse item) Cronbach's alpha .82; Tolerating uncomfortable feelings («When I see someone feeling upset I feel so overwhelmed by my emotions that I find it difficult to help them» reverse item) Cronbach's alpha .80; and Acting to help/alleviate suffering («One of the activities that provides me with the most meaning to my life is helping others») Cronbach's alpha .83.

*Human Capital Sustainability Leadership Scale* (HCSLS; Di Fabio & Peiró, 2018). It is composed of 16 items on a 5-point Likert scale (from 1 = *Not at all* to 5 = *Very much*). Higher-order construct including four specific leadership styles: ethical («Being correct is important when we perform a task or a job»), sustainable («I leave out the superfluous by focusing the resources on the crucial aspects of work»), mindful («I recognize the value of my self-control to my employees, even in stressful situations»), and servant leadership («I encourage my collaborators when I realize that they encounter difficulties»). The Cronbach's alpha coefficient for the HCSLS was .94.

*Procedure*

The questionnaires were completed in group sessions, with participants giving informed consent before taking part. All procedures adhered to current Italian data protection and privacy regulations. To minimize possible order effects, the order of administration of questionnaires was counterbalanced among participants.

*Data Analysis*

Data analysis was conducted using descriptive statistics, Pearson’s correlation analyses, and hierarchical regression techniques, performed with IBM SPSS Statistics.

**Results**

Table 1 shows the correlations among BFQ, IRI dimensions, and HCSSL.

**Table 1**

Correlations among BFQ, IRI Dimensions, and HCSSL

	1	2	3	4	5	6	7	8	9	10
1. BFQ Extraversion	–									
2. BFQ Agreeableness	.36**	–								
3. BFQ Conscientiousness	.33**	.30**	–							
4. BFQ Emotional stability	.17*	.33**	.05	–						
5. BFQ Openness	.47**	.49**	.48**	.15	–					
6. IRI Fantasy	.08	.17*	.15	.09	.06	–				
7. IRI Empathic concern	.03	.41**	.07	.12	.25**	.25**	–			
8. IRI Perspective taking	.14	.45**	.12	.32**	.24**	.10	.58**	–		
9. IRI Personal comfort	.25**	.18*	.31**	.36**	.35**	.33**	.19	.35**	–	
10. HCSSL	.30**	.48**	.26**	.22**	.36**	.02	.41**	.46**	.26**	–

Note. N = 149. \* < .05, \*\* < .01; BFQ = Big Five Questionnaire; IRI = Interpersonal Reactivity Index; HCSSL = Human Capital Sustainability Leadership Scale

A hierarchical regression analysis was conducted with human capital sustainability leadership (HCSSL) as the dependent variable (Table 2). Personality traits

(BFQ) entered at step 1 explained 27% of the variance in HCSL. When empathy dimensions were added at step 2, the model remained significant and accounted for an additional 9% of the variance (total  $R^2 = .36$ ).

**Table 2**

Hierarchical Regression. The Contribution of Personality Traits (BFQ) and Empathy Dimensions to Human Capital Sustainability Leadership

	$\beta$
<i>Step 1</i>	
BFQ Extraversion	.12*
BFQ Agreeableness	.22**
BFQ Conscientiousness	.11*
BFQ Emotional Stability	.10
BFQ Openness	.10
<i>Step 2</i>	
IRI Fantasy	.05
IRI Empathic concern	.20**
IRI Perspective taking	.20**
IRI Personal comfort	.02
$R^2$ step 1	.27***
$\Delta R^2$ step 2	.09***
$R^2$ total	.36***

Note.  $N = 149$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ ; BFQ = Big Five Questionnaire; IRI = Interpersonal Reactivity Index

Table 3 shows the correlations among BFQ, Compassion dimensions, and HCSLS.

**Table 3**

Correlations among BFQ, Compassion Dimensions, and HCSLS

	1	2	3	4	5	6	7	8	9	10	11
1. BFQ Extraversion	–										
2. BFQ Agreeableness	.36**	–									
3. BFQ Conscientiousness	.33**	.30**	–								

4. BFQ Emotional Stability	.17*	.33**	.05	–								
5. BFQ Openness	.47**	.49**	.48**	.15	–							
6. CS Recognizing suffering	.08	.32**	.15	.04	.16*	–						
7. CS Understanding the universality of suffering	.03	.32**	.20*	.08	.12	.43**	–					
8. CS Emotional connection	.04	.43**	.25**	.01	.36*	.43**	.30**	–				
9. CS Tolerating uncomfortable feelings	.10	.11	.20*	.20*	.20*	.07	.01	.28**	–			
10. Acting to help/alleviate suffering	.22**	.47**	.08	.20*	.25**	.36**	.29**	.25**	.20*	–		
11. HCSLS	.30**	.48**	.26**	.22**	.36**	.30**	.24**	.41**	.14	.42**	–	

Note. N = 149. \* < .05, \*\* < .01; BFQ = Big Five Questionnaire; CS = Compassion Scale; HCSLS = Human Capital Sustainability Leadership Scale

A hierarchical regression analysis was conducted with human capital sustainability leadership (HCSL) as the dependent variable (Table 4). Personality traits (BFQ) entered at step 1 explained 27% of the variance in HCSL. When compassion dimensions were added at step 2, the model remained significant and accounted for an additional 10% of the variance (total R<sup>2</sup> = .37).

**Table 4**

Hierarchical Regression. The Contribution of Personality Traits (BFQ) and Compassion Dimensions to Human Capital Sustainability Leadership

	β
<i>Step 1</i>	
BFQ Extraversion	.12*
BFQ Agreeableness	.22**
BFQ Conscientiousness	.11*
BFQ Emotional Stability	.10
BFQ Openness	.10
<i>Step 2</i>	
CS Recognizing suffering	.06
CS Understanding the universality of suffering	.01

CS Emotional connection	.21**
CS Tolerating uncomfortable feelings	.07
CS Acting to help/alleviate suffering	.23**
$R^2$ step 1	.27***
$\Delta R^2$ step 2	.10***
$R^2$ total	.37***

Note.  $N = 149$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ ; BFQ = Big Five Questionnaire; CS = Compassion Scale

## Discussion

The present study aimed to analyze the associations between empathy and HCSL on the one hand, and relationships between compassion and HCSL on the other hand, both controlling for the effect of personality traits.

Empathy was positively associated with HCSL (H1) and added incremental variance beyond personality (H2). The finding of the present study suggests that empathy contributes to HCSL beyond personality traits, highlighting empathy as a socio-emotional resource for workers who possess an advanced leadership style (Di Fabio & Peiró, 2018). More specifically, in the present study, the dimensions of empathic concern and perspective taking emerged as the most relevant components of empathy in relation to HCSL. Empathic concern, reflecting other-oriented feelings of care and compassion, may foster behaviors aimed at supporting employees' well-being and long-term development (Albiero et al., 2006; Di Fabio & Peiró, 2023). Perspective taking, as a cognitive component of empathy, may enable workers to better understand others' needs, expectations, and challenges, thereby helping to promote sustainable environments (Albiero et al., 2006; Di Fabio & Peiró, 2023). Together, these findings underline that in this study both affective and cognitive empathic processes seem to promote leadership styles oriented toward the sustainability of human capital in organizations (Di Fabio & Peiró, 2023).

Compassion was positively associated with HCSL (H1) and added incremental variance beyond personality (H2). These results showed that individuals with higher levels of compassion are more likely to demonstrate behaviors that promote the sustainable development of human capital resources, independently of their personality traits. Examining the specific dimensions in the present study, both emotional connection and acting to help/alleviate suffering proved to contribute to HCSL. The emotional connection dimension underscores the importance of establishing empathetic relationships with team members, while acting to help/alleviate suffering highlights the behavioral aspect of compassion,

reflecting a proactive approach to addressing others' needs and challenges (Di Fabio, 2019; Di Fabio & Peiró, 2023; Gu et al., 2017).

Although this study showed promising results, limitations should be noted. One limitation concerns the participants, who were drawn from central and southern Italy and therefore do not represent the wider Italian workforce. Future research could explore the relationship between empathy, compassion, and HCSL among employees from other regions of Italy. Another limitation regards the cross-sectional nature of this study that does not permit causal relationships between the examined variables to be assumed. Future studies should employ longitudinal designs for analyzing also causal relationships among these variables. Furthermore, conducting studies in other countries would provide valuable opportunities for cross-cultural comparisons.

If future research confirms these findings, they could open new opportunities within the context of prevention-oriented approaches, particularly primary prevention (Di Fabio & Kenny, 2016; Kenny & Hage, 2009; Hage et al., 2017) and strengths-based prevention perspectives (Di Fabio & Saklofske, 2021). Unlike personality traits, which are generally considered stable over time (Costa & McCrae, 1992), empathy and compassion can be actively nurtured and enhanced through specific interventions. On the one hand, fostering empathy and compassion may play a crucial role in promoting human capital sustainability leadership. On the other hand, enhancing HCSL could be a strategic lever for promoting healthy organizations (Di Fabio, 2017a, 2024; Di Fabio et al., 2020; Peiró et al., 2019, 2021), aimed at enhancing employee well-being, resilience, and engagement both in leaders and workers, contributing to a more sustainable workplace (Di Fabio & Cooper, 2023; Di Fabio & Peiró, 2023).

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