



Ana Carolina Martini Braz de Mello e Souza

**Unlocking creative solutions to the
purpose and profit ‘paradox’ – Exploring
the influence of leader humility on
creativity toward the common good**

Tese de Doutorado

Thesis presented to the Programa de Pós-graduação
em Administração de Empresas of PUC-Rio in partial
fulfillment of the requirements for the degree of Doutor
em Administração de Empresas.

Advisor: Prof. Flavia de Souza Costa Neves Cavazotte

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Creator of all things,
true Source of light and wisdom,
lofty origin of all being,
graciously let a ray of Your brilliance
penetrate into the darkness of my understanding
and take from me the double darkness
in which I have been born,
an obscurity of both sin and ignorance.
Give me a sharp sense of understanding,
a retentive memory, and the ability to grasp things correctly
and fundamentally.

Grant me the talent of being exact in my explanations,
and the ability to express myself with thoroughness and charm.

Point out the beginning,
direct the progress,
and help in completion;
through Christ our Lord.

Amen.

— *St. Thomas Aquinas*

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Abstract

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Amidst the cutting-edge challenge of reframing organizational success, it is paramount to understand the role of leadership in influencing followers' capability of solving the paradox of purpose and profit dual-goal, as well as in leveraging creativity toward the common good (De Cremer & Moore, 2020; Winkler et al., 2019). By adding the ethical and moral dimensions alongside the economic goal, organizations start to place purpose into organizational strategy, considering multiple stakeholders' interests (He & Ortiz, 2021; Moroz & Gamble, 2021). Therefore, against this backdrop, the present research contends that in terms of the leader's singular behaviors that may help followers navigate the sustainability paradox, leader humility emerges as a relevant attribute to set the stage for creative problem-solving to flourish and thrive. The first paper makes a concerted effort to investigate the business intellectual structure of leader humility and creativity/innovation, integrating past research findings into a synthetic framework composed of three conceptual maps that extend prior academic work (Kelemen et al., 2022). The second paper comprehends two experimental studies that address cause-and-effect concerns on humble leadership and creativity through the paradox perspective. The first study confirmed that leader humility is responsible for followers' creative problem-solving via a paradox mindset, and also for creative process engagement; yielding a marginally significant effect on positive emotions. The second study, in turn, confirmed that humble leadership is responsible for promoting positive emotions and perspective-taking on followers, eliciting fewer negative emotions when compared to the control condition.

Keywords

Purpose-and-profit paradox; leader humility; emotions; paradox mindset; perspective-taking; creative process engagement; creativity.

Resumo

de Mello e Souza, Ana Carolina Martini Braz; Cavazotte, Flávia de Sousa Costa Neves (Orientadora). **Destravando soluções criativas para o paradoxo lucro-propósito – Explorando a influência da liderança humilde na criatividade voltada para o bem comum.** Rio de Janeiro, 2023, 150 p. Tese de Doutorado – Departamento de Administração, Pontifícia Universidade Católica do Rio de Janeiro.

Diante do desafio de se ressignificar sucesso organizational, torna-se primordial compreender o papel da liderança em capacitar os seguidores para resolver o “paradoxo” lucro-propósito, bem como fomentar a criatividade voltada para o bem comum (De Cremer & Moore, 2020; Winkler et al., 2019). Ao incluir as dimensões ética e moral ao lado dos objetivos econômicos, as organizações passam a inserir o propósito na estratégia organizacional, considerando os interesses das diversas partes envolvidas (He & Ortiz, 2021; Moroz & Gamble, 2021). A partir deste pano de fundo, o presente trabalho propõe a humildade do líder como atributo relevante para auxiliar seguidores a navegar o paradoxo da sustentabilidade, criando o cenário adequado para que a criatividade se desenvolva e frutifique. O primeiro artigo investiga a estrutura intelectual dos temas liderança humilde e criatividade/inovação, integrando-os em um *framework* composto de três mapas conceituais, que avançam achados de pesquisas anteriores (Kelemen et al., 2022). O segundo artigo, composto de dois estudos experimentais, avalia relações de causa-e-efeito da liderança humilde e saídas ligadas à criatividade, através da perspectiva do paradoxo. O primeiro estudo confirmou que a humildade do líder é responsável pela resolução criativa de problemas pelos seguidores via mentalidade de paradoxo, bem como pelo engajamento em processo criativo, apresentando resultado marginalmente significativo para as emoções positivas. O segundo estudo, por sua vez, confirmou que a liderança humilde é responsável por níveis mais altos de emoções positivas e tomada de perspectiva dos seguidores, provocando menos emoções negativas quando comparada à condição de controle.

Palavras-chave

Paradoxo lucro-propósito; liderança humilde; emoções; mentalidade de paradoxo; tomada de perspectiva; engajamento em processo criativo; criatividade.

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Humility is the foundation of all the other virtues, hence, in the soul in which this virtue does not exist, there cannot be any other virtue, except in mere appearance.

Saint Augustine

1. Introduction

How can leaders help organizations manage the purpose and profit paradox to drive sustainable development and unlock shared value creation? Should the leader, trying to activate this powerful source of sustainability-oriented creativity, exercise the traditional top-down leadership perspective or a bottom-up style? Should the leader be humble? These are some of the thought-provoking questions behind this research, addressing some of the pressing challenges organizations face nowadays: to contribute to a business shift, where leaders need to go beyond doing no harm to doing some good.

After a long period of unbounded capitalism and irresponsible business exploration, with various ethical flaws, concurrent moral crises, and corporate corruption scandals, it seems inevitable to recognize that sometimes humanity has failed to balance individual freedoms with greater ambitions of social and environmental responsibility and respect toward each other (Bansal & Song, 2017; Bishop, 2013; Geissdoerfer et al., 2018).

If we take historical stock of the trajectory toward what has been sought in terms of sustainable and responsible development, we can trace its origins back to 1972, when the book “Limits to Growth” (Meadows et al., 2018) was launched and discussed the potential negative consequences of unlimited exponential growth. Meadows analyzed, for the sake of an optimal equilibrium, how humans and other living beings could thrive and exist together, shedding light on the urgent need to attain a more sustainable continuance (Schulz et al., 2021).

The so-called “wicked problems” of our society (a term coined by Design theorists Horst Rittel and Melvin Webber), like, hunger, poverty, biodiversity loss, environmental degradation, and food insecurity (Churchman, 1967; Panwar et al., 2015; Rittel & Webber, 1973; Siegner et al., 2018), represent some of the biggest challenges of humankind today (Schulz et al., 2021). Nonetheless, the same harmful consequences of previous misguided choices can now, through human creativity, be reframed into business opportunities and sustainable development by visionary leaders, employees, and organizations.

Therefore, new ways of incorporating societal and environmental concerns into business practice may help envision solutions to harmonize multiple stakeholders’ interests in a prosperous, sustainable, and perennial way (Foss &

Saebi, 2017; Massa et al., 2017; Porter & Kramer, 2011; Shu et al., 2020). This new force placing purpose alongside profit, guaranteeing dignity and the right to flourish for all, thus began to reshape old assumptions and paradigms that used to underpin the way we built our society and economy, and also the way we think of success.

According to this new perspective, a business can and must fulfill a higher role, illuminating the interconnected worlds of organizations, society, living beings, and the environment (Hendry, 2001). An outdated view of business, as a self-sufficient endeavor, should now give place to a more accurate understanding of what it means to do business – an interdependent practice (Frostenson, 2016).

However, to do so, businesses' guiding principles need to shift away from solely creating shareholder profit. The old industrialist dogma of viewing “environmentalism as an obstacle to production and growth” – which suggests that the two systems are mutually exclusive and cannot thrive together (McDonough & Braungart, 2002, p. 6) – must be overcome to harmonize different stakeholders' interests, either individually or organizationally, balancing third sector values and private profit ambition (Battilana, 2018; Dwivedi & Weerawardena, 2018).

Consequently, a worldwide movement driven by the understanding that humankind can benefit, more than succumb, from the interdependence that connects us all, gained traction to restore humanity's purpose and reframe the definitions of profit and success (Churchman, 1967; Panwar et al., 2015; Rittel & Webber, 1973; Siegner et al., 2018). Examples can be found in the B-Lab certification process (B-Corps), hybrid corporations, social enterprises, social purpose organizations, and impact businesses (just to cite a few).

Those movements brought innovative solutions for establishing what has been called a broader concept of success, which entails not only economic but also human, environmental, and social growth (Saebi et al., 2019). Therefore, new business models that seek to balance purpose and profit started to change governance structures and decision-making processes to positively impact all stakeholders (workers, community, suppliers, customers, and the environment).

From an Aristotelian perspective (Aristotle, 1905; Dierksmeier & Pirson, 2009; Porter & Kramer, 2011; Rachmawati et al., 2019; Wijnberg, 2000), a business can and must be used as a force for good. Also, when instigated to reflect upon what would be necessary in terms of individual factors or characteristics to achieve such an ambitious goal, we can recover, for example, some of the Christian philosophical

theology, which suggests that the human virtue of humility should be vital to the achievement of magnanimity (or greatness), thus helping to shift humanity's mindset to a more other-centered and future-oriented perspective, enhancing human's sense of interconnectedness (Aquinas, 1981). Hence, humility, as a human virtue capable of unlocking many positive outcomes, appears as a promising tool to help reframe social relations and create a more sustainable world for present and future generations (Argandona, 2015; Laszlo & Brown, 2014).

It is also well established that effective leadership has been considered a crucial part of the puzzle for solving various societal, political, and organizational problems, past and present. Concerning the challenge of developing and fostering "sustainability-oriented creativity" (Shu et al., 2020) in organizations, it seems relevant to account for morals, virtues, and ethics, since those concepts entail an other-oriented perspective, a consideration for the collective well-being, discouraging egoistic and self-centered mindsets (Belyaeva & Shams, 2019; de Falco & Renzi, 2020; Hill et al., 2014; Siegner et al., 2018).

Consequently, humility seems to be worth exploring in terms of the leader's singular attributes and behaviors that help unleash and harness in followers and teams, creative solutions to the apparent paradox of the purpose and profit dual goal (Belyaeva & Shams, 2019; de Falco & Renzi, 2020; Hill et al., 2014; Siegner et al., 2018).

Following the same rationale, beyond humility, other abilities, characteristics, and behaviors could help organizations reach the outcome of envisioning new solutions for a sustainable world, like the cognitive skill of perspective-taking (Healey & Grossman, 2018; Wang et al., 2017a), the willingness to engage in creative processes that involve multiple divergent interests (Zhang & Bartol, 2010), and the positive emotional state that allows individuals to feel comfortable, energized and uplifted when dealing with contradictory goals – what the literature calls the paradox mindset (Liu et al., 2020; Miron-Spektor et al., 2018; Sleesman, 2019; Yin, 2021).

1.1 The statement of the problem

The challenge of managing innovative solutions to social and environmental problems to encompass social benefits to the already limited organizational fiduciary obligation toward shareholders (Porter & Kramer, 2011) is, therefore, a

real-world problem, as well as the power of leadership, is a reality to help organizations achieve various positive outcomes.

Thus, amidst the cutting-edge challenge of reframing organizational success, it is paramount to understand the role of leadership in influencing individuals and teams' capability of solving the paradox of purpose and profit dual-goal, as well as in leveraging creativity toward social and environmental positive impact generation (De Cremer & Moore, 2020; Fischer et al., 2017; Villela et al., 2019; Winkler et al., 2019). By adding the ethical and moral dimensions alongside the economic and technological ideas, organizations start to place purpose into organizational strategy, considering multiple stakeholders' interests while searching for maximizing value through a sustainable business model (He & Ortiz, 2021; Maak, 2007; Moroz & Gamble, 2021).

However, before businesses can be used as a force for good and help tackle social and environmental problems, organizations and leaders must first manage purpose and profit tensions that emerge from embracing sustainable development – where economic, social, and environmental goals are pursued simultaneously (Chapardar, 2016; Jay, 2013; Luo et al., 2020, 2020; Van Bommel, 2018).

Taking up the environmental and social crisis in its ethical dimension, it seems important to focus on our duty and responsibility toward each other, the planet, and future generations. This ethical consideration of business, for example, was fundamental to helping build the foundations for business ethics research and the studies concerned with the stability of society (Hahn et al., 2018; Smith et al., 2013).

Therefore, the present collection of studies focuses primarily on the individual level of analysis to address specific questions that explore the role of humble leadership in fostering and developing individuals to navigate the sustainability paradox, setting the stage for sustainable innovation and creative problem-solving to flourish and thrive (Mendy, 2019; Mirvis & Googins, 2018; Soderstrom & Heinze, 2021).

1.2 The importance of the problem

1.2.1 Theoretical implications – The research gap

Academic empirical evidence points to individual and team creativity as a relevant component of organizational success and long-term development (Shalley

& Gilson, 2004). Previous studies have also highlighted leadership as a facilitator of creativity, supporting the overall idea that there are a broad number of processes through which leaders can influence followers' and teams' creative outcomes inside organizations (Chen et al., 2021; Wang et al., 2020).

Although leadership research grounded on human values is still at an early stage of development, its ideas and insights have already given rise to interest in humility as an essential attribute of leaders (Mallén et al., 2020). The humble leadership style, i.e., a bottom-up perspective that fosters proactive attitudes in followers by praising their ideas and contributions, while also recognizing and accepting mistakes, seems to positively impact creative outcomes and innovation in organizations (Chen et al., 2021). By pinpointing specific behaviors of the leader, such as acting humbly, empirical research enables specifying the exact leader behaviors that bring about distinctive influence processes and unfolding organizational outcomes (Mallén et al., 2020; Yukl, 2012).

Concerning the interplay between the leadership phenomenon and creativity and innovation in the *milieu* of business, recent academic research followed a similar pattern of focusing on a specific leadership dimension (Yukl, 2012), helping advance the leadership construct knowledge amidst different challenges of today's world. In doing so, previous studies proved that humble leaders facilitate team creativity by enhancing the team's creative efficacy through their understanding and consideration of other points of view, admitting their limitations, viewing optimistically others' limitations, and also fostering teachability (Mallén et al., 2019, Wang et al., 2020). Past research has also called for future works to deeper explore the effect of leader humility on follower creativity (Wang et al., 2018).

Regarding the field of sustainable development, scholars have recently called for new studies to address the gap in exploring the relationship between creativity and sustainable development, suggesting novel research avenues to understand how creative approaches can facilitate sustainable development through different perspectives (Buhl et al., 2019; Shrivastava, 2014; Schulz et al., 2021).

Also, taking stock of previous academic work, future research efforts should help advance knowledge on the relationship between the leader's humble behaviors and individual and team creativity, which requires further exploration of how its effects are channeled (Mallén et al., 2020), especially in a causal way (Wang et al., 2020). Therefore, we still need to develop studies that can establish cause-effect

relations and boundary conditions in the relationship between the leader's humility and creativity – either at the individual level or the team level (Chen et al., 2021; Chen et al., 2021; Ye et al., 2020).

Considering that the paradox perspective to explore phenomena like innovation, creativity, and leadership, is still in its infancy, it does point to a promising research avenue that should be explored to help solve some of the challenges experienced by organizations in today's complex world (Liu et al., 2020; Miron-Spektor et al., 2018; Zheng et al., 2018).

Ultimately, the present research aims to help advance theoretical knowledge on the frontier between humble leadership and sustainable development, focusing on the connections between leaders' humility and managing the purpose and profit paradox, and more specifically on the connections between leader humility and creative problem-solving when purpose and profit clash.

1.2.2 Practical implications

In terms of practical implications, beyond doing the right thing and leaving a positive footprint in the world, companies pursuing sustainable innovation along with profit and purpose objectives tend to experience additional advantages – in their marketing activities, financial activities, meeting new expectations of investors, reputation, improving organizational resilience, human resources management (HRM) activities, business strategies, talent attraction, and retention, among several others (Bocken et al., 2014; Buliga et al., 2016; Greening & Turban, 2000; Schaltegger et al., 2012).

Therefore, the development of an in-depth understanding of the positive implications for organizations pursuing purpose and profit can further support the development of trustworthy organizational policies and HRM guidelines that will improve the chances of the organization succeeding in the migration to a new sustainable business model, as it engages the workforce toward the common good. According to Hester Le Roux and Maggie De Pree to Stanford Social Innovation Review “sustainable business models could open economic opportunities worth \$12 trillion and increase employment by up to 380 million jobs by 2030” (Le Roux & De Pree, 2018).

1.2.3 Social impact of the research

The scientific production that results from academic research should, as an inevitable consequence, produce some sort of social impact, generating social improvement and correspondent benefits for society. The knowledge produced through science, thus, must carry a social value, and when applied by social actors, must foster a beneficial change to the previous *status quo* experienced by the community (Viana-Lora & Nel-lo-Andreu, 2021).

Therefore, demonstrating the social impact of research has become a priority in the academic *milieu*, but also a challenge to higher education practitioners (Lauronen, 2020), since a third mission has been added to the previous academic goals (teaching and research) – which is to demonstrate the social impact of their findings (Bornmann, 2013).

Regarding the present research, since it concludes with some implications, not only for theory, but also for practice, which are intrinsically connected to meeting the above-mentioned research expectations on social impact, we can affirm that business practitioners, leaders, and employees from organizations that are interested in not only producing shareholder profit but also stakeholder value, can benefit from its conclusions regarding the impact of humble leadership on creativity toward the common good.

For-profit hybrid organizations in Brazil, for example, that are interested in developing their followers' skills and abilities to navigate tensions between the dual goal of purpose and profit, should benefit from the present research findings, which point to the knowledge that organizational leaders should be aware of the power of adopting humble behaviors while fostering teams and followers to come up with creative solutions and be innovative while dealing with organizational tensions. Traditional top-down leadership styles, hence, may not be ideal to help Brazilian for-profit organizations shift to a more sustainable business model, since followers seem to benefit from the leader's humility to become social innovators.

Since we still have a small number of enterprises in Brazil that are proactively seeking an active position of change agent regarding the sustainability matter (de Lange, 2019), the research findings indirectly contribute to better management in for-profit hybrid organizations, pointing to the best leadership style that will address the challenge.

Consequently, by seeking a full understanding of the influence of humble leadership, we can dive more deeply into how leader humility can help employees navigate the purpose and profit paradox, which is inherently connected to the challenge of creatively reaching out for new solutions that create shared value to all stakeholders.

1.3 The research questions

Motivated by the highlighted issues above and led by the research gap in empirical studies addressing the influence of leader humility on followers' outcomes amidst the sustainability-oriented creative process, the present research is composed of two stand-alone manuscripts, addressing the following guideline research questions:

(i) What is the state of the art on leader humility and creativity/innovation in the field of business? How a conceptual framework resulting from an integrative review of previous studies would look like? What conclusions could be drawn, and what future research avenues could be suggested?

(ii) How and when would the leader humility predict followers' positive outcomes amidst the purpose and profit paradox challenge (sustainability-oriented creative process)? Would followers under the humble leader more often: (a) experience more positive emotions and less negative emotions? (b) display a paradox mindset? (c) engage in perspective-taking? (d) display higher creative process engagement? and (e) produce more creative solutions to the purpose-and-profit business challenge (sustainability-oriented creative problem-solving)? Would followers' emotions, paradox mindset, perspective-taking, and creative process engagement mediate the path between humble leadership and sustainability-oriented creative problem-solving?

The first question (item "i") was addressed by the first study through the accomplishment of three methodological steps (chapter 2 of the present work) – (i) the first one consisted of mapping and analyzing the academic research field on humble leadership to reach an overarching comprehension of the topic; (ii) the second stage explored the connection between humble leadership and creativity & innovation, identifying the most relevant past academic production in the field of business, taking Fischer and colleagues' leadership process model framework (Fischer et al., 2017) as a classification tool to reach a meaningful understanding of

the process models that have so far been used to explore how the influence of humble leadership works; and finally, (iii) the third stage summarized the main theoretical models and variables tested, reaching a synthetic framework of three conceptual maps that showed the combination of all variables and mediation/moderation mechanisms, from different levels of analysis, amidst the humble leadership phenomenon. This final stage also lays out the main research gaps and suggests a future research agenda.

The second research question (item “ii”) was addressed by the second study, through the attainment of two experimental studies (Chapter 3) – a quasi-experiment and an experiment (to test the hypotheses proposed by the two conceptual models).

1.4 An overview of the literature

To undertake the journey toward answering the above-mentioned questions, it is important to first lay out an overview of the literature that grounds the two studies that compose the present dissertation, worth mentioning that each study has its unique literature review.

1.4.1 The virtue of humility

Organizational studies are increasingly looking to the construct of humility, as well as other human virtues to bring some clarity to relevant questions that haven’t yet been answered by academic research, especially in the business ethics domain (Owens & Hekman, 2016; Qin et al., 2020). Scholars have had a keen interest in understanding ‘virtue’, having at this point articulated some insightful definitions (Hackett & Wang, 2012) such as viewing virtue as (i) a personal quality, capable of enabling individuals to move their behaviors toward a greater good (Arjoon, 2000); (ii) an enabling psychological process toward thinking and acting to promote social well-being (McCullough & Snyder, 2000); and (iii) an individual trait, someone’s character or intellect, which can be considered morally distinguished and admirable (Flynn, 2008).

Since humility is considered the root of all other virtues – also known as the foundational virtue – it sets the stage for other virtues to emerge (McInerney & Clarke, 2018). Concerning humility’s theoretical roots and foundations, some of the origins for the word are: (i) from Old French *umelite* ("humility, modesty,

sweetness"); (ii) from the Latin *humilitatem* (nominative *humilitas*: "lowness, small stature, insignificance, baseness, the littleness of mind"); (iii) concerning the term *humus* ("dirt or earth", literally "on the ground") (*Online Etymology Dictionary*, 2017).

Therefore, humility, as the "quality of being humble", corresponds to assuming to be down to earth, with both feet firmly placed on the ground; also means to keep a very clear and profound consciousness of your limits, and be in constant touch with your truth-self. The Christian value of humility entails the central idea of entire dependence on God, recognizing our humanity, and our creature condition in the face of God (Aquinas, 1981). Consequently, what would most define a humble man, according to Christianity, is that "he will not be thinking about humility – he will not be thinking about himself at all" (C. S. Lewis, 2012).

According to Philosophy, the human being, instinctually seeks others' recognition of their excellence, presenting a natural tendency for showing superiority (Aquinas, 1981). The virtue of temperance, which moderates human inclination to seek mundane pleasures inordinately, when applied to that natural human instinct of searching for others' recognition and fame, is called humility. Therefore, in Philosophy, humility corresponds to what makes man attain himself for what he is (Aquinas, 1981). In Science, humility is not presented as an opposed concept to self-confidence, for example, nor to one's capacity to think independently. On the contrary, when a researcher acts humbly, he will be able to always search for the truth, notwithstanding the circumstances, even if it means going against all of his previous conceptions and beliefs (Gantt, 1967).

1.4.2 Leader humility

When it comes to exploring humility as a practical virtue, the research topic has been mostly scrutinized under the umbrella of business ethics studies (Argandona, 2015; Qin et al., 2019; Throop & Mayberry, 2017). Previous research broadly suggests that is clear the relationship between human virtues and positive outcomes in organizations, revealing virtues as a practical and effective answer to many contemporary business challenges, faced by organizations. The main subjects explored by academia so far include, for example, human virtues (such as humility) and leadership phenomena.

Falling under the umbrella of the school of positive leadership approaches, the leader's humility or the leader's humble behavior, despite being a “vertical style” of leadership (W. Liu et al., 2017) is considered a bottom-up approach to leadership (Qin et al. 2020), and due to its clear moral underpinning, has also been explored amidst the business ethics research (Lee et al., 2020; Qin et al., 2019).

Bradley Owens and David Hekman proposed three behavioral dimensions for the leader-expressed humility construct (that focus on the interpersonal nature of humility): (i) to proactively adopt an accurate view of oneself – personal limits awareness; (ii) to appreciate others' strengths and contributions; and (iii) to be open to discussion, listen to feedbacks and adopt a teachable attitude toward others (Owens, Johnson, & Mitchell, 2013; Owens & Hekman, 2012; Rego et al., 2017).

Hence, it seems natural to conclude that humility entails social signals of a willingness to submit the self to something greater, letting be guided by an other-centered perspective, which, ultimately, involves an accurate view of one's flaws (being down-to-earth and holding a high self-awareness), an appreciation of others' strengths and capacities to contribute (a low self-focus), and also, to be opened to learn, to listen to others' ideas (an intellectual openness) (Mallén et al., 2020; Owens & Hekman, 2012; J. Wang et al., 2017).

Since then, several important organizational outcomes have been attributed to humility as an interpersonal characteristic, such as general performance, creativity, satisfaction, learning goal orientation, engagement, and turnover (Owens & Hekman, 2016; Owens, Johnson & Mitchell, 2013).

Leader humility seems of great relevance amidst the exploration of actions and behaviors in favor of the common good, whose attitudes are guided by an other-orientated perspective, and an ongoing learning orientation. The reason to believe in the pertinence of considering the notion of morals and ethics is that “moral and ethical values are more motivating and seen as more universal (Skitka, 2010), and they help to ‘suppress or regulate selfishness and make cooperative social life possible’ (Haidt & Kesebir, 2010, p. 800)” (Smith & Kouchaki, 2021, p. 279).

Therefore, humble behaviors in leaders may potentially enrich our understanding of psychological processes through which leaders influence followers' ongoing moral development, as well as how the interaction between leader and follower shape and foster more ethical attitudes and behaviors, and, consequently, a more ethical workplace (Owens et al., 2019). Not only that, we

contend that humble leadership can be responsible for several other psychological mechanisms that are capable of influencing followers' emotional states, attitudes, and behaviors, which ultimately could lead to a broader array of positive outcomes in the *milieu* of business, including sustainability-oriented creativity and social innovation.

1.4.3 Leader humility and creativity & innovation

Through three key dimensions, leader humility has been also linked to employee creativity (Wang et al., 2017b); since they tend to consider mistakes in the creative process as expected, and cultivate the right mind toward insightful new ideas. Further, through the appreciation of followers' strengths, the humble leader stimulates them to come up with fresh ideas and creative solutions to specific problems or challenges. Because of their openness to novel ideas and constant feedback, humble leaders build the right environment for followers to generate and implement novel solutions and schemes in organizations (Wang et al., 2017b).

However, despite the academic interest growth in the positive implications of the leader's humble behaviors, so far, only a few studies have explored the relationship between the leader's humility and followers' and teams' creativity, which calls for further research on the subject (Chen et al., 2021). The underlying mechanisms through which leader humility affects followers' and teams' creativity and innovation inside organizations can be classified into two broad categories – (i) the leadership process model of fostering resources, and (ii) the leadership process model of developing resources (Fischer et al., 2017).

Falling under the first category, for example, there is social information processing theory (Salancik & Pfeffer, 1978), social cognitive theory (Bandura, 1986), self-efficacy theory (Bandura, 1977), and resource conservation theory (Hobfoll, 2012). At the same time, under the umbrella of the developmental process, the humble leader would influence different outcomes through the development of individual or organizational resources, which could be explained, for example, by the social learning theory (Bandura, 1977).

Moreover, most of the previous scientific studies that have been conducted, used the survey quantitative method, having none, as far as we know, for example, applied an experimental design to assess causal claims between humble leadership and creativity/innovation outcomes, thus pointing to a research gap opportunity to

be filled. Overall, considering the worldwide movement toward using business as a force for good, it seems paramount to understand the dynamics and psychological processes behind the influence of humble leaders over follower and team creativity, especially when an organization is trying to creatively address the purpose and profit paradox challenge (Belyaeva & Shams, 2019; Laudal, 2018; Porter & Kramer, 2011; Rendtorff, 2017).

1.4.4 Sustainability-oriented creativity and the sustainability paradox

Performing sustainable development seems to entail a unique challenge that demands a broader view and perspective, considering its primary goal of solving the so-called wicked problems of society and the environment. Organizations pursuing the dual goal of purpose and profit show that sustainable development is embedded with high complexity levels, pushing creativity forward and demanding additional answers from practitioners and academics, who should pursue research avenues that add knowledge to this novel field (Schulz et al., 2021).

The great challenge of harmonizing environmental, economic, ethical, and social dimensions through sustainable development calls for academic scholars to explore new perspectives within the creative process. There is a pressing need to unfold new solutions to contradictions that may surface in sustainability-oriented decision-making processes. Thus, what should trigger creativity amidst this complex scenario where constant tensions between interests emerge and may prevent creativity from flourishing?

Answering this call, the Journal of Cleaner Production launched 2021 a special issue to address the sustainable development challenges from a creative perspective, bringing creativity as a facilitator in collective practices of sustainable development. Amidst this creative process, the editors highlighted the ongoing process of ideation, characterized by contradictions of understandings and views, diversity of perspectives, and various demands (technology, economy, society, and environment) to achieve new solutions (Schulz et al., 2021).

Therefore, an apparent paradox seems to surface when professionals and organizations decide to engage in the creative process of addressing social and environmental problems, integrating a social and a financial mission into the organization's strategy (Matzembacher et al., 2020; Moroz & Gamble, 2021). That is because it entails the inevitable demand of dealing with constant contradictions,

tensions, and conflicting interests, thus representing new challenges for leaders and teams.

What literature calls ‘paradox’ is defined as “the dynamic tensions of juxtaposed opposites” (Rosen, 1994: xvii), which also marks much of organizational life, including the innovation process (Cropley & Cropley, 2014; Mitroff, 1995). Paradoxes combine various concepts and ideas infused with contradictions and ambiguities (Lado et al., 2006), involving mutually contradictory interests or states (Cropley & Cropley, 2014; Miron-Sspector et al., 2011).

Previous academic research has already recognized that corporate sustainability is an example of a paradoxical phenomenon, where leaders are simultaneously pursuing economic, social, and environmental goals (Hahn et al., 2018; Luo et al., 2020). Many tensions naturally emerge within the challenge of embedding profit and purpose goals, and a balancing act to keep a financially feasible social mission must be reached (Siegner et al., 2018). Organizational leaders and teams, searching for vertical and horizontal coherence (Joyce & Paquin, 2016), try to untangle the paradox in the sustainable business model innovation process (Zeng et al., 2017; Soderstrom & Heinze, 2021) – thus originating a new research avenue, that explores organizational sustainability within the paradox lens (Hahn et al., 2018).

Recalling the paradox theory, which discusses the ways alternative approaches can be pursued to meet contradictory goals simultaneously (Smith & Lewis, 2011), we can foresee that paradoxical tensions and innovative behavior can relate to each other (Ingram et al., 2016) and allow an organizational long-term sustainable development (Smith & Lewis, 2011). The paradox theory (or lens) applied to corporate sustainability (Hahn et al., 2018; Ozanne et al., 2016) suggests that we should avoid the path of eliminating tensions and choosing only one goal (called “either/or” solution), but to embrace, accept, and even benefit from tensions to produce creative insights and innovative solutions that create shared value (Chen et al., 2020; Lewis, 2000; Porter & Kramer, 2011).

Following Audebrand’s bundle of paradoxes rationale for cooperative enterprises (Audebrand et al., 2017), which visually presents the paradoxes faced at the organizational level, we could envision the same challenge for organizations pursuing purpose and profit, and also transpose it at the individual level, where

employees and leaders may experience the same paradox while pursuing the dichotomic dual-objective of serving the others through social innovation and acting as of expected to their traditional role – serving mainly the shareholder profit generation goal (Chapardar, 2016; Lado et al., 2006; Luo et al., 2020; Soderstrom & Heinze, 2021).

Therefore, the employees from organizations pursuing purpose alongside profit may face a challenging paradox, with competing demands and tensions among contradictory states (Pradies et al., 2021). This context organically led to thinking about the construct of the paradox mindset (Miron-Spektor et al., 2018), initially developed to help practitioners promote positive outcomes among employees despite the tensions they were experiencing.

Accordingly, the main contribution of this collection of studies is to theoretically and empirically connect the constructs of the leader's humility, and individual creative problem-solving, focusing on innovative solutions to the challenge of harmonizing different stakeholders' interests, and the apparent paradox of pursuing purpose and profit. The research, therefore, grounds itself on the general proposition that humble leaders can help organizations and professionals navigate the ongoing paradox of creating shared value for all stakeholders, engaging in creative problem-solving when the dual objective of purpose and profit clash.

2. Systematic Literature Review – Paper 1

LEADER HUMILITY AND CREATIVITY & INNOVATION IN BUSINESS: STATE-OF-THE-ART AND FUTURE RESEARCH AGENDA

“You get creative when you
replace fear of the unknown
with love of the unknown”

– Maxime Lagacé

Abstract

What is the state of the art on leader humility and creativity & innovation in the field of business? How a synthetic framework resulting from an integrative review of previous academic research would look like? What conclusions could be drawn, and what future research avenues could be suggested? To address these questions and fill a gap left by previous studies (Chandler et al., 2023; Kelemen et al., 2022), the current work followed three methodological steps: (i) the first stage consisted of mapping and analyzing the academic research field on humble leadership to reach an overarching comprehension of the topic; (ii) the second stage explored the connection between humble leadership and creativity & innovation, identifying the most relevant past academic production in the field of business, taking Fischer and colleagues' leadership process model framework (Fischer et al., 2017) as a classification tool to reach a meaningful understanding of the process models that have so far been used to explore how the influence of humble leadership works; and finally, (iii) the third stage summarized the main theoretical models and variables tested, reaching a synthetic framework of three conceptual maps that show the combination of all variables and mediation/moderation mechanisms, from different levels of analysis, amidst the humble leadership phenomenon. This final stage also laid out the main research gaps and suggested a future research agenda.

2.1 Introduction

After a long period of profound economic, political, social, and ethical crises affecting society, especially amidst the organizational *milieu* (Argandona, 2015; De Cremer & Moore, 2020; Hackett & Wang, 2012), business researchers started to give special attention to the study of morals and human virtues. It is not by chance that business ethics, as a research field, has been growing steadily for the past years.

Defined as the research field that “deals with questions about whether specific business practices are ‘morally’ acceptable” (p. 5, Ferrell et al., 2008), business ethics has gained momentum and space in many relevant business journals, such as *Journal of Management*, *Academy of Management*, and *Journal of Business Research*.

Considering its relevance, the business ethics theme has inspired the creation of journals to intentionally address the topic, like, *Journal of Business Ethics*; *Business Ethics Quarterly*; *Issues in Business Ethics*; *Business Ethics – A European Review*; and *International Journal of Business Governance and Ethics*.

It is quite recent then, that research on humility has stemmed from different intellectual fields of study – religion (Dunnington, 2019; Krause & Hayward, 2015), philosophy (Ballantyne, 2021; Hackett & Wang, 2012), business (Argandona, 2015; Frostenson, 2016), and social sciences (Bhattacharya et al., 2017; Tangney, 2000).

Regarding the business research field, we must account for the leadership phenomena, where humility is receiving the very most attention, since organizational leaders are the protagonists when dealing not only with ethical problems and various financial, economic, and political crises that stem from it (Chan et al., 2011), but also because organizational leaders are most responsible for fostering, developing and promoting creativity and innovation inside organizations.

Business academic production explores a broad array of related subjects that encompass creativity-innovation topics, like individual creativity, team creativity, creative process engagement, innovative work behavior, sustainability-oriented creativity, social innovation, business model innovation, service innovation, product innovation, process innovation, among others (R. Li et al., 2022; Y. Liu et al., 2020; Shu et al., 2020).

Although the academic interest in the subject has grown substantially in the last decade, a more comprehensive understanding of the relationship between leader humility and creativity and innovation is necessary to encourage further advancements in research. Business practitioners and academics shall thus benefit from an in-depth knowledge of what has been produced in terms of research findings on the subject.

Therefore, the present study is anchored in the following research questions: What is the state of the art on leader humility and creativity/innovation in the field of business? How a conceptual framework resulting from an integrative review of previous studies would look like? What conclusions could be drawn, and what future research avenues could be suggested?

Elaborating on what has been said, the main objective of this work is to map the scientific production and knowledge development over time to reach out to an integrative review that summarizes past empirical literature, identifies main research trends, allowing a synthetic framework to be built based on the conclusions reached by the three methodological steps taken. The conclusion also indicates some of the research gaps found and puts forward a future research agenda.

2.2 Theoretical background

Humility in organizational studies and business ethics research

Humility, as a practical virtue, has been mostly scrutinized under the umbrella of business ethics studies (Argandona, 2015; Qin et al., 2019; Throop & Mayberry, 2017). Previous research has broadly demonstrated the positive relationship between human virtues and various desirable outcomes in organizations, revealing a practical and effective answer to many contemporary ethical business challenges faced by organizations today (Argandona, 2015; De Cremer & Moore, 2020; Frostenson, 2016).

One of the fundamental reasons why virtues are relevant in the context of business is that when virtues are present, human values appear repeatedly on several decisions taken by the individual at work. Those values shape one's character and provide the external world with an identifiable pattern of attitudes and behaviors that are consistent with their values (Argandona, 2015).

If we take the virtue of humility, specifically, we verify four different ways in which humility performs an important role regarding the managing task: (i) self-

knowledge as a basis for decision-making, (ii) character stability – being humble will provide a more consistent decision-making process due to the quality of a stable character, (iii) capacity of improvement – being humble will allow the leader to not feel depressed by his limitations or errors, providing the right mindset for improvement, and (iv) human climate, prosocial behavior, and teamwork – the humble behavior is not only capable of removing barriers and building trust but also, through role modeling, humility fosters others to place the collective goal ahead of their personal goals and create the right context for teamwork to thrive (Argandona, 2015).

Positive psychology, which gives special attention to positive traits, like humility, has also argued that to have a positive state of mind, either personally, inter-personally, or organizationally, people need positive traits, like humility, to help them grow from a psychological standpoint (Argandona, 2015; Peterson & Seligman, 2004). As argued by Frostenson, “humility rejects the idea of self-sufficiency” (pg. 96, Frostenson, 2016), in a sense that it recognizes the general individual state of dependency, which also illuminates the business context where organizations perform.

Therefore, it seems relevant to account for humility as a managerial virtue that is key to any business endeavor, truly representing what business fundamentally is – an interdependent venture. Showing respect for others also helps organizations legitimize their performance amidst the community where their operation works (Frostenson, 2016). Regarding the leadership phenomena, researchers argue that humility plays a special role in business due to the pressing contemporary need for more acting, behaving, and thinking that conduct people and organizations toward the common good (what scholars call ‘the normative argument’) (Frostenson, 2016).

Academic researchers also call attention to the fact that humility in leaders is an important antecedent to successful management since humble leaders encourage followers to behave and act in ways that benefit not only the organization but also the leader himself (Morris et al., 2005). The other one is called the ‘instrumental argument of good consequences of humility’, which advocates that humble leaders can promote others to be other-enhancing (instead of self-enhancing), helping followers to build a learning-oriented perspective that fosters a growth process and resilience (Owens & Hekman, 2012; Vera & Rodriguez-Lopez, 2004).

Leader humility and creativity & innovation

Against the aforementioned background, the humble leadership literature falls under the umbrella of the school of positive leadership approaches. Despite being a “vertical style” of leadership (Liu et al., 2017) it is considered a bottom-up approach (Qin et al. 2020), and due to its clear moral underpinnings has also been explored amidst the business ethics research (Lee et al., 2020; Qin et al., 2019).

Bradley Owens and David Hekman proposed three behavioral dimensions for the leader-expressed humility construct (that focus on the interpersonal nature of humility) (Owens et al., 2013; Owens & Hekman, 2012, 2016): (i) to proactively adopt an accurate view of oneself – personal limits awareness; (ii) to appreciate others’ strengths and contributions; and (iii) to be open to discussion, listen to feedbacks and adopt a teachable attitude toward others (Owens, Johnson, & Mitchell, 2013; Owens & Hekman, 2012; Rego et al., 2017).

Hence, it seems natural to conclude that humility entails social signals of a willingness to submit the self to something greater, letting be guided by an other-centered perspective, which, ultimately, involves an accurate view of one’s flaws (being down-to-earth and holding a high self-awareness), an appreciation of others’ strengths and capacities to contribute (a low self-focus), and also, to be opened to learn, to listen to others’ ideas (an intellectual openness) (Owens & Hekman, 2012; J. Wang et al., 2017).

Since the expressed humility construct was launched (Owens & Hekman, 2012), several important organizational outcomes have been attributed to humility as an interpersonal characteristic, such as general performance, creativity, satisfaction, learning goal orientation, engagement, and turnover (Owens & Hekman, 2016; Owens, Johnson & Mitchell, 2013).

Through its three key dimensions and in line with many different underlying theories, leader humility has also been linked to employee creativity and innovation (Wang et al., 2017b; Lee et al., 2020), since humble leaders tend to consider mistakes in the creative process as expected, and cultivates the right mind toward insightful new ideas. Further, through the appreciation of followers’ strengths, the humble leader stimulates them to come up with fresh ideas and creative solutions to specific problems or challenges. Because of their openness to novel ideas and constant feedback, humble leaders build the right environment for followers to

generate and implement novel solutions and schemes in organizations (Wang et al., 2017b).

However, despite the constant growth in academic interest in the positive implications of the leader's humble behaviors, so far, only a few studies have explored the relationship between the leader's humility and the teams' creativity, for example, which calls for further research on the subject (Chen et al., 2021).

Although we have two recent academic works mapping the past academic production on humble leadership (Chandler et al., 2023; Kelemen et al., 2022) we still lack an integrative review and synthesis on the subject of humble leadership combined with creativity and innovation, especially covering more theoretical details concerning the underlying mechanisms through which leader humility affects followers' and teams' creativity and innovation inside organizations (mediating variables), their boundary conditions (moderating variables) and specific context (industry, country, etc). Therefore, the present research tries to fill this gap through the following methodological steps.

2.3 Methodology

Research design

Three methodological steps or research stages were followed to address the research questions. The first stage consists of mapping the academic research field on humble leadership since the first article published in 1997 by Yenming Zhang – “A Humble Leader is Held High” – having the topic increased in importance in organizational studies after the seminal work of Bradley Owens and David Hekman – “Modeling how to grow: An inductive examination of humble leader behaviors, contingencies, and outcomes” – published by The Academy of Management Journal in 2012.

The second methodological stage is dedicated to exploring the connection between humble leadership and creativity & innovation, identifying the most relevant past academic production in the fields of Business, Economics, Psychology, and other intellectually close knowledge fields. Also, taking Fischer and colleagues' leadership process model framework as a classification tool to reach a meaningful understanding of the process models that have been tested so far to explain how the humble leadership influence occurs.

Finally, the third stage summarizes the main variables tested, reaching a synthetic framework of three conceptual maps resuming the combination of all variables and mediation/moderation mechanisms, from different levels of analysis, that past academic research covered. This final stage also lays out the main research gaps and suggests a future research agenda.

First stage

To answer question one, a systematic literature review was conducted, starting with bibliographic research to summarize the results from previous studies using the academic database Scopus' analysis tool, and also relying on keyword co-occurrence analysis using the VosViewer software tool. This methodological stance is supported by previous investigations in synergic inquiry in leadership studies (Epitropaki et al., 2020) to map the research trends across the years. The first stage is resumed through the following methodological steps:

- STEP 1: Data source definition (Scopus).
- STEP 2: First Scopus search → Humble leadership or leader humility.
- STEP 3: Raw data filtration.
- STEP 4: Running Scopus data analysis (for statistics purposes).
- STEP 5: Selection of final sample.
- STEP 6: Analysis via VosViewer software tool.

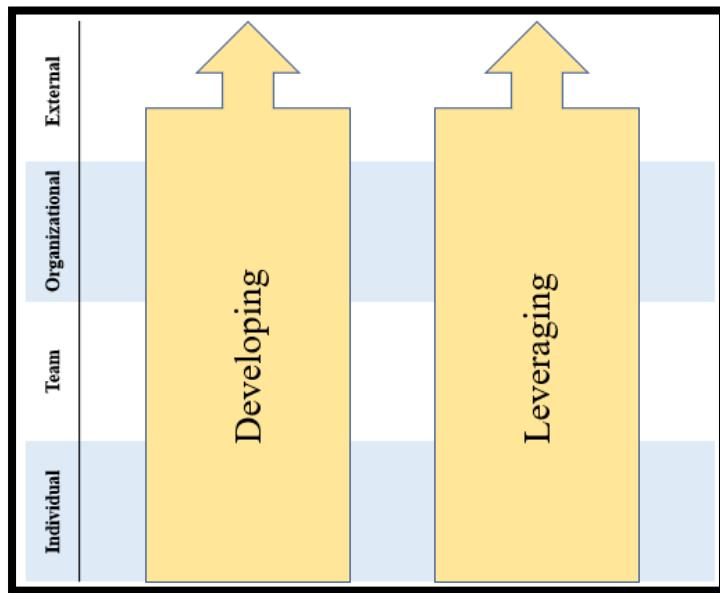
Second stage

The second stage of the research focused on exploring the connection between humble leadership and creativity & innovation to understand more deeply how the influence of humble leadership occurs. To do so, the following steps were taken:

- STEP 1: Reading and analyzing the final sample (abstracts).
- STEP 2: Second Scopus search → “Humble Leader*” or “Leader Humility” and “Creativ*” or “Innov*”.
- STEP 3: Raw data filtration (adopting the threshold of journal impact factor of 1, and excluding off-topic manuscripts).
- STEP 4: Reading and classifying data according to Fischer and colleagues' framework for leadership process models.

According to Fischer, Dietz, and Antonakis, we can classify the leadership process into two types – developing resources and leveraging resources – either from an individual, team, organizational, or external level of analysis (Fischer et al., 2017).

*Figure 1: Leadership process models framework
(Adapted from Fischer et al., 2017)*



Hence, leaders would influence followers either (i) through supporting learning processes that, consequently, would affect new skills development or exploration (Developing), or (ii) through increasing efficacy, which would affect new skills leveraging or exploitation (Leveraging) (Fischer et al., 2017) (Fig. 1).

Third stage

The third stage of the research aims to summarize the main trends across the myriad of humble leadership variables, mediators, and moderators, reaching a synthetic framework that contributes to articulate some insightful conclusions that may help reorient the field, such that future findings will be more robust, and generate meaningful policy implications. This was done as follows:

- STEP 1: Analytical reading of the manuscripts to identify all relevant information and synthesize the main findings in a comprehensive list (Table 4);
- STEP 2: Development of a synthetic framework that summarizes the main theoretical models and relationships, which is presented through three conceptual maps that combine all the research main findings of the most

prominent past academic production: (i) the first map addresses the issue concerning when the influence of humble leadership will vary in each level of analysis; (ii) the second map answers the question of what influences are conditioned on humble leadership and if this moderating role fosters a positive impact or minimize a negative impact; and (iii) the third map puts forth the outcomes that creativity and innovation provoke amidst organizations where leaders are humble; and

- STEP 3: A set of conclusions and future research agenda proposal reached by all the previous methodological steps combined.

2.4 Results

Stage 1 – Mapping the business research trends on leader humility

To address question one, the first stage took the following steps:

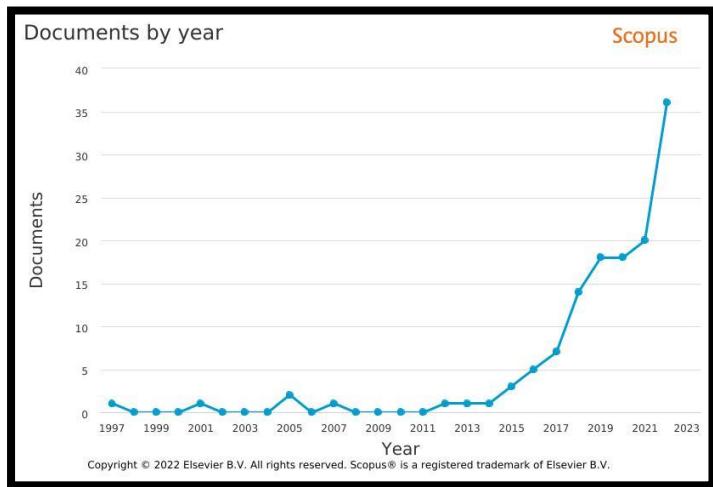
- Search (Title-Abs-Key): “Humble Leader*” OR “Leader Humility”.
- First result: 144 documents (on November, 14th 2022).
- Entering the following limitations:
 - Source type: Journal
 - Language: English
 - Document type: article or review
 - Subject area:
 - Limit to: (i) Business, Management, and Accounting; (ii) Psychology; (iii) Social Sciences; (iv) Arts and Humanities; (v) Economics, Econometrics, and Finance; (vi) Decision Sciences; (v) Environmental Science; and
 - Exclude (i) “Computer Science”; (ii) “Medicine”; (iii) Nursing; (iv) Engineering; (v) “Health Professions”; (vi) “Materials Science”; (vii) “Mathematics”; and (viii) “Physics and Astronomy”.
- Final sample: 124 (on November, 15th 2022).

Descriptive analysis of the literature

First, a descriptive analysis of the final sample of articles was carried out. The search results showed increased growth of publications across the years, most since 2012 when the seminal work of Owens and Heckman “Modeling how to grow: An inductive examination of humble leader behaviors, contingencies, and outcomes”

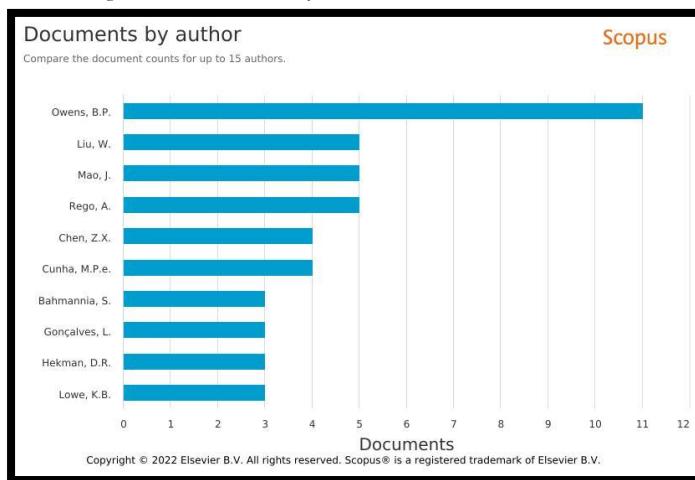
was published in the Academy of Management Journal (Owens & Hekman, 2012) (fig. 2).

Figure 2: Documents by year - SCOPUS search results



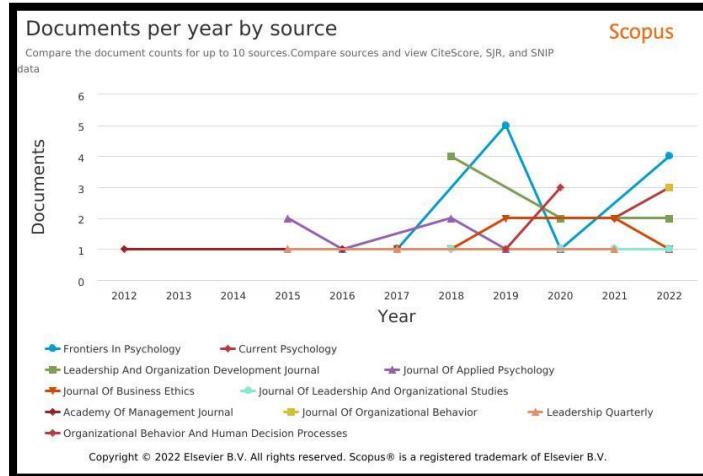
Concerning authorship, the most prominent researcher in the field is Bradley Owens, from Brigham Young University/USA, with 11 studies, followed by Wenxing Liu, from Zhongnan University of Economics and Law/China; Jianghua Mao, from Zhongnan University of Economics and Law/ China; and Armenio Rego, from Catholic University of Portugal, all with 5 occurrences (Fig. 3).

Figure 3: Documents by author - SCOPUS search results



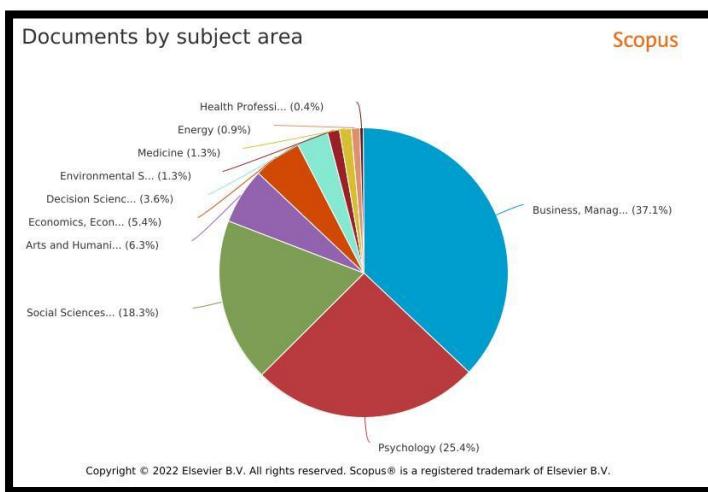
We have an indication of the relevance of the matter given the number of papers published in high-impact factor journals, such as the Academy of Management Journal, Journal of Applied Psychology, The Leadership Quarterly, and Journal of Business Ethics (Fig. 4).

Figure 4: Documents per year by source - SCOPUS search results



Over half of the total amount of published papers covering the topic of humble leadership is distributed among Business and Psychology research areas: 39.3% in Business, Management, and Accounting (corresponding to 83 documents); and 26.5% in Psychology (with 56 documents). The reminiscent amount is distributed as 18.0% in Social Sciences (corresponding to 38 documents), 6.6% in Arts and Humanities (14 occurrences), 5.7% in Economics, Econometrics, and Finance (12 documents), and 3.8% in Decision Sciences (8 documents) (Fig. 5).

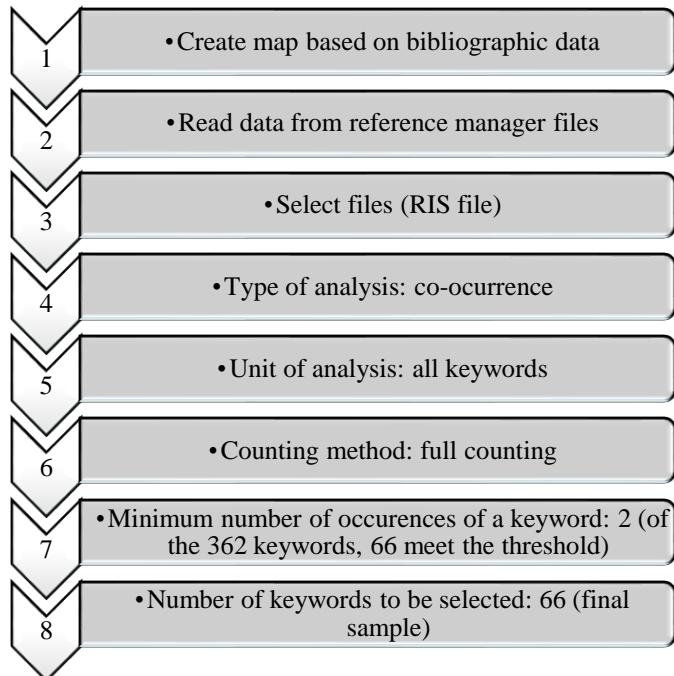
Figure 5: Documents by subject area - SCOPUS search results



Key-word network analysis

After this first frequency analysis, the final sample was analyzed through the VosViewer software, following the methodological procedure adopted by previous studies (Epitropaki et al., 2020). To carry out the co-occurrence analysis with all keywords, the procedural steps below were observed (Fig. 6).

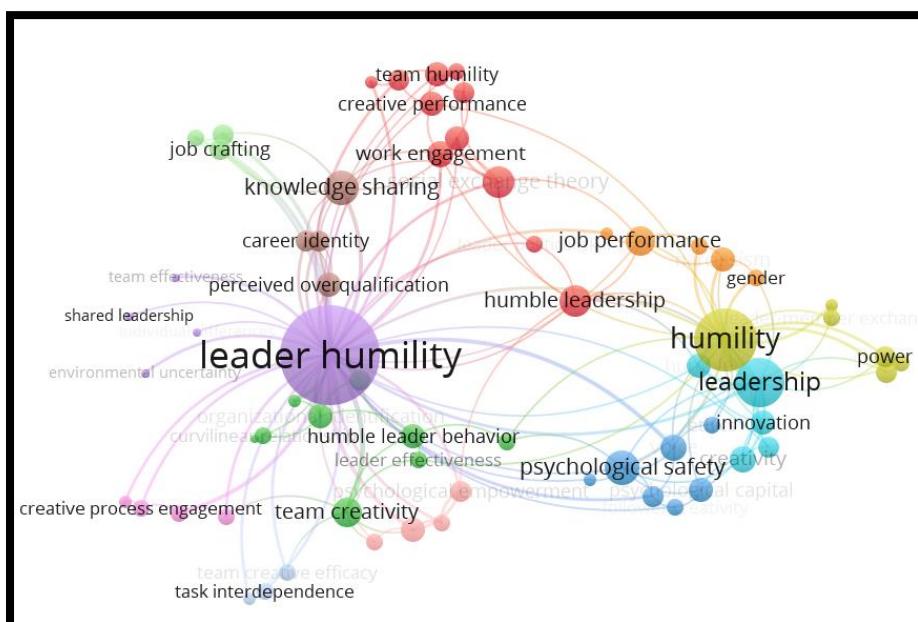
Figure 6: VosViewer Steps



- Normalization: Association strength method.
- Layout: Use default values.
- Clustering: Merge small clusters.
- Result: 66 items; 12 clusters; 166 links; and 231 total link strengths.

After running the first cluster analysis, the software returned the following visualization map (Figure 7) containing twelve clusters, each with its particular related items.

Figure 7: VosViewer Network Visualization



The VosViewer keyword co-occurrence analysis (van Eck & Waltman, 2010, 2019) returned the network visualization map (Figure 7) with the most relevant topics explored by the scientific production on humble leadership in the last ten years (since the leader expressed humility construct was launched by Owens and colleagues in 2013). In VosViewer, the research topics explored by the authors appear as labels and circles, whose size represents the weight of the item (number of documents found for each construct). Lines also link the constructs, and the closer they appear, the stronger their relatedness (van Eck & Waltman, 2010, 2019).

Therefore, the related nodes of the networks formed clusters based on co-occurrence terms, which correspond to a set of closely related topics, and themes that have been explored together by previous academic studies. As we can see, previous studies on leaders' humble behaviors show that creativity and innovation have been of great interest to researchers, representing a promising avenue to receive growing attention for future studies on the subject.

For example, concerning follower creativity and leader humility, the topic has been addressed with connection to follower self-efficacy, leader proactive personality, organization's innovation climate, psychological capital, psychological safety, and growth need strength. Whereas, the team level of analysis: learning, team innovation, team reflexivity, team proactive personality, team creative efficacy, and task interdependence appear as connected topics that past research explored so far. The present research dives deeper into the analysis of the aforementioned scientific production on humble leadership and creativity & innovation within the next methodological step.

Stage 2 – Leader humility and creativity & innovation – Leadership process models

Regarding the scientific production that explored the interplay between leader humility and creativity/innovation in organizations, the bibliographic research conducted in the Scopus database retrieved the preliminary result of thirty-five articles, as follows:

- Search (Title-Abs-Key): “Humble Leader*” OR “Leader Humility” AND “creativ*” OR “innovat*”.
- Entering the following limitations:
 - Source type: Journal

- Language: English
- Document type: article or review
- Subject area:
Limit to: (i) Business, Management, and Accounting; (ii) Psychology; (iii) Social Sciences; (iv) Arts and Humanities; (v) Economics, Econometrics, and Finance; (vi) Decision Sciences.
- Result: 35 (on December, 9th 2022).

To reach the final sample, the threshold of business journals with an impact factor higher than one was considered, following previous systematic literature review research (Y. Zeng et al., 2017) to select the most relevant academic research production in the business field (DuBois & Reeb, 2000). Alongside the exclusion category of journals' impact factor, another criterion was adopted to narrow down the final sample – an analytical reading of the articles' abstracts to rule out manuscripts whose topics did not cover the analysis of the leadership phenomenon. For example, the exclusion of the work “Relationship-Specific (Dyadic) Humility: How Your Humility Predicts My Psychological Safety and Performance” (Journal of Applied Psychology, 2022), that was excluded because of the absence of the phenomenon of leadership – humility was assessed only through peers' relationships, as an individual characteristic.

The above-mentioned selection criteria led to a final sample of 30 (thirty) articles (Table 1), which was used to identify the main underlying mechanisms that researchers relied on to theorize about humble leadership influence, as well as the variables involved, research designs, the business industry of the sample, among others. Based on Antonakis and colleagues' classification of types of leadership processes, we also indicated which level of analysis the study corresponded to and if the process of leadership influence was carried out through leveraging resources or developing resources (Table 1). For example, at the individual level and the team level of analysis, previous academic research on leadership has mostly focused on addressing leveraging processes, which entail either cognitive, affective, behavioral, or mixed processes (Fischer et al., 2017).

Table 1: Final sample – Humble leadership and creativity & innovation papers

	Journal / impact factor	Year	Title	Authors	Business Industry (sample)	Research method	Underlying theory	Leadership process models
1	Journal of Organizational Behavior (8.174)	2022	Leader humility and team innovation: The role of team reflexivity and team proactive personality	Leblanc, P.-M., Rousseau, V., Harvey, J.-F.	A sample of 71 teams in a university-affiliated hospital	Quantitative research method. Survey. Multisource, time-lagged data collected	Social cognitive theory and input-process-output framework	IIb
2	Frontiers in Psychology (4.566)	2022	How Does Leader Humility Influence Team Creativity? The Roles of Team Behavioral Integration and Leader Performance	Zhu, T., Chen, Y., Asante, E.A., Zhu, Y., Xu, T.	A sample of 67 work teams from a variety of industrial companies in Southeast China	Quantitative research method. Survey. A multiple-source research design.	Social learning theory	Ib
3	Frontiers in Psychology (4.566)	2022	Humble Leadership and Team Innovation: The Mediating Role of Team Reflexivity and the Moderating Role of Expertise Diversity in Teams	Lei, X., Liu, W., Su, T., Shan, Z.	A sample of 135 teams within 18 medium-to-large internet technology firms in China	Quantitative research method. The study used both archival and survey data	Social information processing theory	IIb
4	Frontiers in Psychology (4.566)	2022	Eminence of Leader Humility for Follower Creativity During COVID-19: The Role of Self-Efficacy and Proactive Personality	Asghar, F., Mahmood, S., Khan, K.I., Gohar Qureshi, M., Fakhri, M.	A sample of 405 employees and 87 managers working in the banking sector of Pakistan	Quantitative research method. Survey.	Social cognitive theory and Social information processing theory	IIa
5	Journal of Pacific Rim Psychology (1.878)	2022	The indirect effect of leader humility on employee creativity through a growth mindset for creativity	Yang, W., Xu, S.	A sample of 532 employees from companies in a wide range of industries—including technology, manufacturing, consultancy, and finance—in different provinces of China	Quantitative research method. (Survey study). Cross-level (team and individual levels)	Social learning theory	Ia/Ib
6	Psychology Research and Behavior Management (3.974)	2022	Innovation Onset: A Moderated Mediation Model of High-Involvement Work Practices and Employees' Innovative Work Behavior	Li, M., Khan, H.S., Chughtai, M.S., Le, T.T.	A sample of 255-line staff and 119 supervisors working in the textile industry in Pakistan	Quantitative research method. Survey. SEM via PLS.	Componential theory of creativity	IIa

7	Current Psychology (4.297)	2022	The effect of activated resource-based faultlines on team creativity: mediating role of open communication and moderating role of humble leadership	Yao, J., Liu, X.	A sample of 418 employees in 80 teams of 18 high-technology firms in China	Quantitative research method. (Multisource and multi-wave survey data)	Social information processing theory	IIb
8	Asia-Pacific Journal of Business Administration (2.25)	2022	Unraveling the nexus between creative self-efficacy, humble leadership, innovative work behaviour and job performance amongst physicians in public hospitals	Al Wali, J., Muthuveloo, R., Teoh, A.P.	A sample of 173 responses of physicians from Iraq public hospitals	Quantitative research method. Survey. SEM via PLS.	Self-efficacy theory, social exchange theory, and social cognitive theory	IIa
9	Management Decision (4.320)	2022	Humble leadership and career success: A moderated mediation analysis	Chughtai, A.A., Arifeen, S.R.	A sample of 220 employees who were selected from four food and beverage companies based in Pakistan	Quantitative research method. Survey.	Human capital theory	IIa
10	Personnel Review (3.434)	2022	Humble leadership and employee creative performance in China: the roles of boundary spanning behavior and traditionality	Zheng, Z., Ahmed, R.I.	A sample of 276 employees and the supervisors from 8 firms in China, including three banks, three IT firms, one manufacturing firm and one real estate	Quantitative research method. Survey. Two-wave data.	Social exchange theory	IIa
11	Sustainability (Switzerland) (3.251)	2021	Can leaders' humility enhance project management effectiveness? Interactive effect of top management support.	Ali, M., Li, Z., Zhenduo, Z., (...), Ariza-Montes, A., Vega-Muñoz, A.	A sample of 332 persons working in a matrix organization on sustainable information technology projects	Quantitative research method. Survey. Structural Model Testing – SEM.	Resource conservation theory	IIa/IIc
12	Journal of Managerial Psychology (3.303)	2021	Humble leader behavior and team creativity: the team learning perspective.	Chen, L., Liu, S., Wang, Y., Hu, X.	A sample of 77 team leaders and 310 employees were collected in two private-owned technology companies located in South China.	Quantitative research method. Two-time survey. Time-lagged, multisource data analysis.	Social learning theory	Ib

13	Current Psychology (4.297)	2021	Investigating the effect of leader humility on subordinates' service creativity: a moderated dual-path model.	Lei, S., Peng, L., Guo, Y.	A sample of 348 valid data from ten enterprises in mainland China, that are in direct contact with customers in their daily work	Quantitative research method. Survey.	Social learning theory and social exchange theory	Ia/Ib
14	Management Decision (4.320)	2021	The curvilinear relationship between team informational faultlines and creativity: the moderating role of team humble leadership.	Yao, J., Liu, X., He, W.	A sample of 85 R&D teams in companies from China	Quantitative research method. The multisource and longitudinal survey data	Social information processing theory	IIb
15	Human Resource Management Journal (5.039)	2021	Leader humility, team job crafting and team creativity: The moderating role of leader-leader exchange.	Chen, C., Feng, J., Liu, X., Yao, J.	A sample of 286 employees in 59 teams in 13 high-technology firms from Northern China	Quantitative research method. Survey. a multiple-source, time-lagged research design.	Social exchange theory	IIb
16	Journal of Creative Behavior (2.487)	2020	Antecedents and Consequences of Creativity in Teams: When and How Leader Humility Promotes Performance via Team Creativity.	Wang, X., Li, H., Yin, H.	A sample of 341 employees and 104 teams from five different organizations in China. Those work teams involved sales, retail, hotel, and service companies.	Quantitative research method. Survey. A multiple-source and time-lagged study	Social information processing theory	IIb
17	Tourism Management	2020	Leader humility, team humility and employee creative performance: The moderating roles of task dependence and competitive climate	Ye, B.H., Tung, V.W.S., Li, J.J., Zhu, H.	A sample of 76 work teams and 531 employees from the hotel industry in Guangdong Province, China	Quantitative research method. Survey.	Social learning theory	Ia/Ib
18	Organizational Behavior and Human Decision Processes (4.017)	2020	Does being mindful make people more creative at work? The role of creative process engagement and perceived leader humility.	Cheung, S.Y., Huang, E.G., Chang, S., Wei, L.	The first study sample of 280 employees from a large joint venture automobile company located in east China. We randomly selected 80 work units across the entire company to participate in the study. The second study sample of 282 employees from three large privately owned manufacturing companies in a city in northern China	Quantitative research method. Survey. time-lagged designs.	Social information processing theory	IIa

19	Leadership and Organization Development Journal (3.96)	2020	Impact of humble leadership on project success: the mediating role of psychological empowerment and innovative work behavior	Ali, M., Zhang, L., Shah, S.J., Khan, S., Shah, A.M.	A sample of 337 individuals employed in the civil construction sector of Pakistan	Quantitative research method. Survey.	Conservation of resource theory	IIa/IIc
20	Management Decision (4.322)	2020	Does leader humility matter? Effects on altruism and innovation.	Mallén, F., Domínguez-Escríg, E., Lapiedra, R., Chiva, R.	A sample of 568 valid questionnaires were obtained and 284 different Spanish companies	Quantitative research method. Survey. Structural equations	Social information process theory	IIa/IIc
21	Sustainability (Switzerland) (3.251)	2019	How humble leadership influences the innovation of technology standards: A moderated mediation model.	Jiang, H., Liu, W., Jia, L.	A sample of 354 individuals who participated in technology standard innovation activities in China	Quantitative research method. Survey. SEM.	Knowledge-based theory	IIa/IIc
22	Human Systems Management (2.141)	2019	The moderating role of intrapreneurial personality in the relation between leader humility and innovative behavior	Abbas, W., Wu, W.	A sample of 498 respondents in Karachi, Pakistan	Quantitative research method. Survey.	Signaling theory	IIa
23	Frontiers in Psychology (2.990)	2018	Humble leadership, psychological safety, knowledge sharing, and follower creativity: A cross-level investigation.	Wang, Y., Liu, J., Zhu, Y.	A sample of 328 team members nested within 106 teams in fifty software firms in Guangdong province, China.	Quantitative research method. Survey. Using time-lagged data	Social information processing theory	IIa/IIb
24	Leadership and Organization Development Journal (1.977)	2018	When a leader is seen as too humble: A curvilinear mediation model linking leader humility to employee creative process engagement	Yuan, L., Zhang, L., Tu, Y.	A sample of 113 dyads of leaders and subordinates in China	Quantitative research method. Survey.	MOA framework (Motivation, opportunity and ability) and Chinese Zhong-Yong theory	IIa
25	Leadership and Organization Development Journal (1.977)	2018	How does humble leadership promote follower creativity? The roles of psychological capital and growth need strength.	Wang, Y., Liu, J., Zhu, Y.	A sample of 165 matched leader-follower questionnaires from manufacturing organizations in South China	Quantitative research method. Survey. Multiple regression analyses	Self-efficacy theory	IIa

26	Leadership and Organization Development Journal (1.977)	2018	How humble leadership fosters employee innovation behavior: A two-way perspective on the leader-employee interaction.	Zhou, F., Wu, Y.J.	A sample of 169 employee-leader dyads from technology enterprises in China	Quantitative research method. Survey.	Social interdependence theory and self-expansion theory	Ia
27	Journal of Applied Psychology (6.423)	2018	Leader humility and team creativity: The role of team information sharing, psychological safety, and power distance.	Hu, J., Erdogan, B., Jiang, K., Bauer, T.N., Liu, S.	A sample of 72 work teams and 354 individual members from 11 information and technology firms in China	Quantitative research method. Survey. multiple-source, time-lagged research design.	Team climate theory	IIb
28	International Journal of Organizational Analysis (2.74)	2017	The relation between leader's humility and team creativity: The mediating effect of psychological safety and psychological capital	Gonçalves, L., Brandão, F.	A sample of 73 teams and their leaders, from 40 firms operating in different industries.	Quantitative research method. Survey.	Self-efficacy theory	IIa
29	Journal of Applied Behavioral Science (2.325)	2017	Understanding How Leader Humility Enhances Employee Creativity: The Roles of Perspective Taking and Cognitive Reappraisal	Wang, J., Zhang, Z., Jia, M.	A sample of 451 member-leader dyads of 129 emergency medical task forces involved in the Wenchuan earthquake.	Quantitative research method. Survey.	Social information processing theory and the process model of emotion regulation	IIa
30	Frontiers in Psychology (2.990)	2017	Leader humility and team innovation: Investigating the substituting role of task interdependence and the mediating role of team voice climate	Liu, W., Mao, J., Chen, X.	A sample of 90 teams, located in mainland China, from which: 36 R&D teams (40%), 24 production teams (27%), 18 sales teams (20%), and 12 functional departments (13%).	Quantitative research method. Survey.	Social information processing theory and substitutes for leadership theory	IIb

In accordance with Table 1, the vast majority of the data sample was collected in China and Pakistan, and in terms of industry, the sample proved to be quite diverse, despite most collected data being concentrated in the technology sector, like high-technology, internet technology, and sustainable information technology. Other surveyed sectors include medical and hospitals; finance and banking; textile; information technology (IT) and software; manufacturing; food and beverage; real state; service – including sales, retail, and hotel; civil construction; and automobile.

Based on the aforementioned descriptive table, containing the final sample of academic manuscripts on humble leadership and creativity & innovation (Table 1), the following classification was carried out, considering Fischer and colleagues' (Fischer et al., 2017) framework for leadership process models (Table 2):

Table 2: Final sample classification - Type of leadership process

Type of Leadership Process (number of papers identified)		
Level of analysis	Developing resources (I) (6 papers)	Leveraging resources (II) (24 papers)
Individual (a)	<p>➤ 4 Studies:</p> <ul style="list-style-type: none"> - Social learning theory (cross-level) (Papers 5, 13 and 17); - Self-expansion theory (Paper 26). 	<p>➤ 16 Studies:</p> <ul style="list-style-type: none"> - Social information process theory (Paper 18); - Social information process theory and social cognitive theory (Paper 4); - Human capital theory (Paper 9); - Social exchange theory (Paper 10); - Social information process theory (cross-level) (Papers 20, 23); - Self-efficacy theory (Papers 8, 25, 28); - Componential theory of creativity (Paper 6); - Knowledge-based theory (Paper 21); - Signaling theory (Paper 22); - MOA framework and Zhong-Yong theory (Paper 24); - Social information processing theory and the process model of emotion regulation (Paper 29); - Resource-conservation theory (cross-level) (Papers 11, 19).
Team (b)	<p>➤ 5 Studies:</p> <ul style="list-style-type: none"> - Social-learning theory (Papers 2, 12); - Social learning theory (cross-level) (Papers 5, 13 and 17). 	<p>➤ 10 Studies:</p> <ul style="list-style-type: none"> - Social cognitive theory and I-P-O framework (Paper 1); - Social information process theory (Papers 3, 7, 14, 16); - Social exchange theory (Paper 15); - Social information process theory (cross-level) (Papers 20, 23); - Team climate theory (Paper 27); - Social information processing theory and substitutes for leadership theory (Paper 30).
Organizational (c)	<p>➤ 0 Study</p>	<p>➤ 4 Studies:</p> <ul style="list-style-type: none"> - Resource-conservation theory (cross-level) (Papers 11, 19); - Social information process theory (cross-level) (Paper 20); - Knowledge-based theory (Paper 21).
External (d)	<p>➤ 0 Study</p>	<p>➤ 0 Study</p>

Source: Adapted from Fischer et al., 2017

Drawing from the classification above (Table 2), there is a preponderance of studies exploring leveraging resource processes to assess the influence of humble leadership on followers' creative and innovation outcomes. From an individual level of analysis, most of the studies ground themselves on the overarching framework of social information processing theory (Griffin, 1983) to explain and justify the influence process of humble leadership on followers' creative and innovative outcomes.

The social information processing theory proposes that leaders act as social cue providers inside organizations, impacting followers' behaviors, perceptions, and attitudes at the workplace (Griffin, 1983; Salancik & Pfeffer, 1978). Therefore, employees' attitudes and behaviors are consequential outcomes of a process of absorbing, pondering, and reflecting upon the information that was grasped from the social context. At the workplace, humble leaders display three different subsets of behaviors – accurate self-awareness, an appreciation for others' contributions and strengths, and teachability. Hence, humble leaders can, either through affection, behavior, or cognition, provide positive signals that will motivate followers to be more creative and innovative in organizations (Table 3).

However, only four individual-level studies focused on some sort of developing process. Grounding themselves on social learning theory and self-expansion theory, past research hypothesized the positive influence of humble leadership on followers' outcomes connected with creativity and innovation through learning or self-development. However, if we take a closer look, none of them explored, for example, the mediating variables of "mentoring" or "coaching", which are considered some of the "set of resource-enlarging concepts" that are used at the individual and/or team level to assess development (Ellinger & Bostrom, 1999; Ely et al., 2010; Fischer et al., 2017).

Here, we invite the reader to recall the structure of the construct of "leader humility", composed of three dimensions: (i) self-awareness; (ii) appreciation of others' contributions and strengths; and (iii) teachability (Owens & Hekman, 2012). The developing resource process seems to be more closely related to the third dimension of the leader humility construct – teachability – responsible for helping followers learn and develop new skills and abilities at the workplace. However, the other two dimensions are also relevant to the developing process that the humble

leader will engage to help followers grow skills – creating the right environment to learn.

For that reason, there seems to be a lack of academic studies exploring the developing resource processes through which humble leaders help followers and teams develop their creativity and innovation skills – Would it be through cognitive learning or affective learning? How the developing resource process would occur at the individual level, at the team level, and, why not, at the organizational level?

Finally, at the team level, the same pattern was observed, with five studies assessing developing processes, while leveraging processes were tested by ten studies. Concerning the organizational level, only four studies were identified, all concerning leveraging processes – showing a promising research opportunity to explore “organizational-level learning” mediating variables (Fischer et al., 2017). Last but not least, regarding the external level of analysis, no studies have been identified so far.

Stage 3 – Leader humility and creativity & innovation – A synthetic framework

Lastly, to fulfill the final methodological step, a synthesis of main research data concerning the final sample of academic papers on humble leadership and creativity & innovation is laid out, summarizing the information regarding the level of analysis, the independent variables tested, as well as the mediators, the moderators, the dependent variables, and also the main findings (Table 3). The table is divided into three color groups: (i) blue – humble leadership as a causal factor in the promotion of creativity/innovation; (ii) green – humble leadership as a moderating factor of the promotion of creativity/innovation; and (iii) orange – humble leadership as a causal factor in the promotion of organizational outcomes through creativity/innovation (Table 3). As follows:

Table 3: Final sample – Research synthesis

Papers	Level of analysis	Independent variable (IV)	Mediating variable (MEV)	Dependent variable (DV)	Moderating variable (MOV)	Type of moderating variable	Findings
4	Individual	HL	Follower self-efficacy	Follower creativity	Leader proactive personality (IV → MEV)	Leader-related variable	All hypotheses supported
10	Individual	HL	Boundary spanning behavior – BSB	Employee creative performance – ECP	Traditionality (IV → MEV)	Employee-related variable	BSB partially mediated the relationship between HL and ECP.
22	Individual	HL	-	Innovative behavior	Intrapreneurial personality (IV → DV)	Employee-related variable	All hypotheses supported
24	Individual	HL	Perceived organizational support – POS	Creative process engagement – CPE	Leader competence (IV → MEV)	Leader-related variable	Curvilinear relationship between HL and CPE. POS partially mediates this relationship
25	Individual	HL	Psychological capital	Follower creativity	Growth need strength (IV → MEV)	Employee-related variable	All hypotheses supported
26	Individual	HL	Core self-evaluation	Employee innovation behavior	Leader political skill (IV → MEV)	Leader-related variable	All hypotheses supported
29	Individual	HL	Perspective-taking	Employee creativity	Cognitive reappraisal (IV → MEV)	Employee-related variable	All hypotheses supported

1	Team	HL	Team reflexivity	Team innovation	Team proactive personality (IV → MEV)	Team-related variable	All hypotheses supported
2	Team	HL	Team behavioral integration	Team creativity	Leader performance (IV → MEV)	Leader-related variable	All hypotheses supported
3	Team	HL	Team reflexivity	Team innovation	Team's expertise diversity (IV → MEV)	Team-related variable	All hypotheses supported
12	Team	HL	Team learning behavior	Team creativity	Leader effectiveness (IV → MEV) <i>(leader-related variable)</i>	Leader-related variable	All hypotheses supported
15	Team	HL	Team job crafting	Team creativity	LLX (IV → MEV)	Leader-related variable	All hypotheses supported
27	Team	HL	Team information sharing (1) Team psychological capital (2)	Team creativity	Team power distance (IV → MEV1) + (IV → MEV2)	Team-related variable	All hypotheses supported
28	Team	HL	Team Psychological safety (1); Team Psychological capital (2) (sequential paths)	Team creativity	-	-	All hypotheses supported
30	Team	HL	Team voice climate	Team innovation	Task interdependence (IV → MEV)	Organizational-related variable	All hypotheses supported

5	Cross-level (Indiv./team)	HL	Employee growth creative mindset	Employee creativity	Type of team function (IV → MEV)	Team-related variable	All hypotheses supported
13	Cross-level (Indiv./team)	HL	Role modeling (1) LMX (2) (parallel paths)	Employee service creativity	Team relationship conflict (IV → MEV1) + (IV → MEV 2)	Team-related variable	Most of the hypotheses were supported
17	Cross-level (Indiv./team)	HL	Team humility	Creative performance	Task dependence (MEV → DV) Competitive climate (MOV of MOV relationship)	Organizational- related variable	All hypotheses supported
20	Cross-level (Indiv./Org.)	HL	Altruism	Firm innovativeness	-	-	All hypotheses supported
21	Cross-level (Indiv./Org.)	HL	Knowledge exchange and combination	Innovation of technology standard	Job complexity (MEV → DV)	Organizational- related variable	All hypotheses supported
23	Cross-level (Indiv./team)	HL	Team psychological safety	Follower creativity	Team knowledge sharing (MEV → DV)	Team-related variable	All hypotheses supported
6	Individual	High- involvement work practices	Employees' personal initiative	Employees' innovative work behavior	HL (IV → MEV)	Leader-related variable	All hypotheses supported
18	Individual	Mindfulness	Creative process engagement	Employee creativity	Perceived Leader Humility (MEV → DV)	Leader-related variable	All hypotheses supported
7	Team	Activated team resource- based faultlines	Team open communication	Team creativity	HL (IV → MEV)	Leader-related variable	All hypotheses supported

14	Team Team informational faultlines	-	Team creativity	HL (IV → DV)	Leader-related variable	All hypotheses supported	
8	Individual HL (1) + Creative self-efficacy (2)	Innovative work behavior	Job-performance	-	-	All hypotheses supported	
9	Individual HL	Innovative work behavior – IWB	Salary (1) + Carrer satisfaction (2)	Affective commitment to the supervisor (IV → MEV)	Employee-related variable	IWB partially mediated the effects of HL on career satisfaction.	
16	Team HL	Team creative efficacy (1) Team creativity (2) (sequential paths)	Team task performance	Leader conscientiousness (IV → MEV1) Team future orientation (IV → MEV2)	Leader-related variable	All hypotheses supported	
11	Cross-level (Indiv./Org.)	HL	Employee creativity	Project management effectiveness	Top management support (IV → MEV) + (MEV → DV)	Leader-related variable	All hypotheses supported
19	Cross-level (Indiv./Org.)	HL	Psychological empowerment – PE (1) Innovative work behavior – IWB (2) (parallel paths)	Project success	-	-	PE and IWB partially mediate the relationship between HL and project success.

Synthetic framework development

Against this backdrop of a systematic organization of past academic research on humble leadership and creativity & innovation, the present study develops a synthetic framework that is formed by three conceptual maps that together summarize the set of relationships assessed by previous scientific production through which humble leaders influence followers and teams toward creativity and innovation inside organizations.

The first map (Fig. 8) addresses the issue concerning when the influence of humble leadership will vary at each level of analysis. Thus, focusing on studies that explore the humble leadership phenomenon as the independent variable (articles marked in blue in Table 4), the first map consolidates the information about (i) the paths that explain how the influence of humble leaders occurs (mediating variables), and (ii) when this influence will vary (the boundary conditions). The first map is complemented by three additional graphics that break down data regarding the moderating variables, presenting the information according to the level of analysis, whether the moderation effect is either positive or negative (Tables 4 and 5), and also the boundary conditions of the humble leadership influence across multi-level studies (Fig. 9).

The second map aims to answer the question of what influences are conditioned to humble leadership and if this moderating role of the leader fosters a positive impact or minimizes a negative impact (Fig. 10). Therefore, the second map synthesizes the research on humble leadership as a moderating variable (articles marked in green in table 4). The leader's humility here acts as a conditional factor of the influence of a given independent variable on a mediating variable, that will consequently impact creativity or innovation outcomes.

Finally, the third map (Fig. 11) puts forth the outcomes that creativity and innovation provoke when leaders are humble. This final step summarizes the studies where creativity and innovation are the mediating variables between humble leadership and a dependent variable (outcome) (articles marked in orange in Table 4). Thus, it focuses on what creativity and innovation arouse either at the individual, at the team, or the organizational level, in organizations where humble leadership is the primary influence (the independent variable of the proposed model). Moreover, the third map shows the boundary conditions of such influence (Tables 6 and 7) at each level of analysis, and across multi-level studies (Fig. 12).

Figure 8: First map – Nomological network of the humble leadership influence on creativity & innovation outcomes

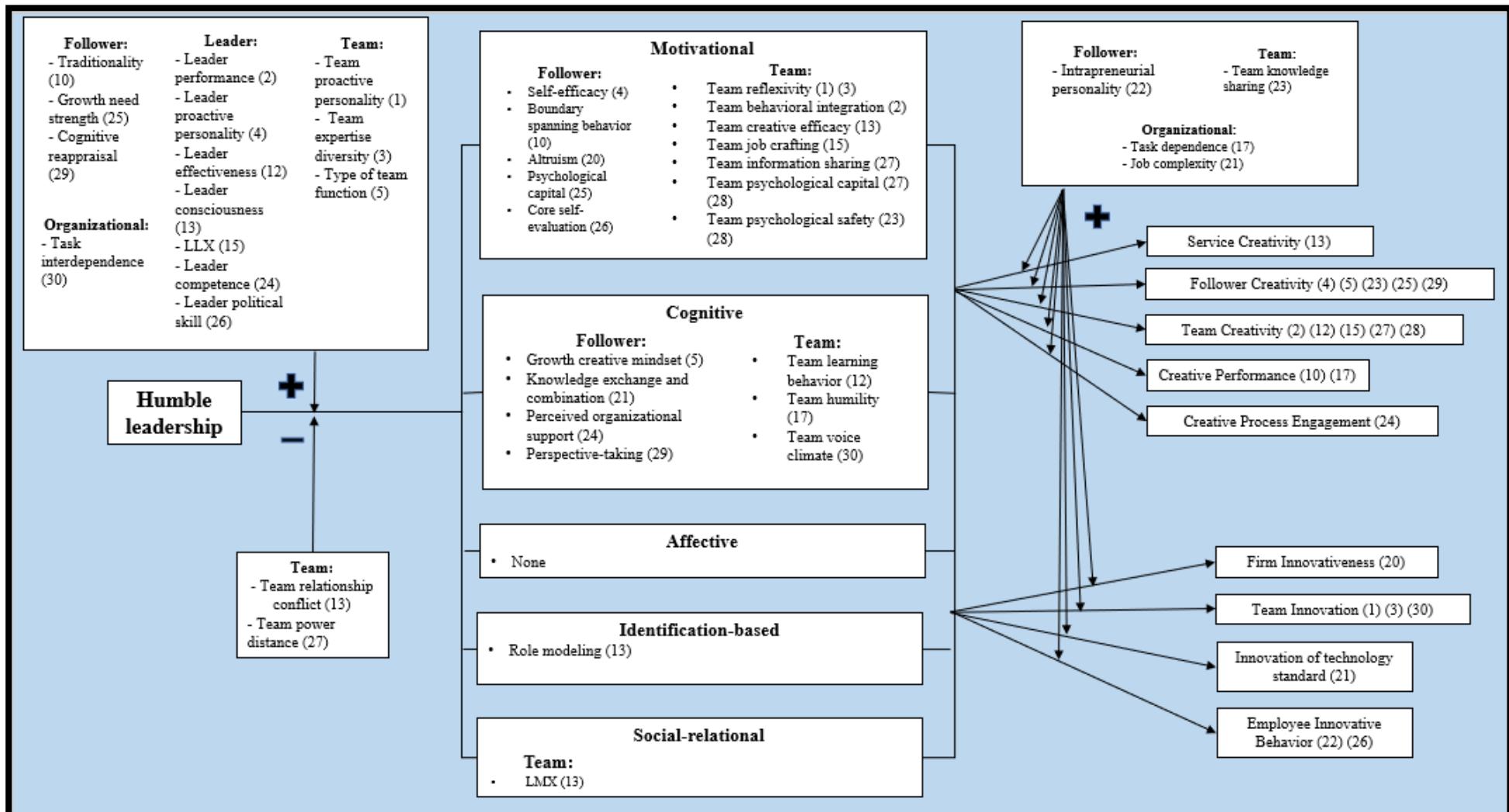


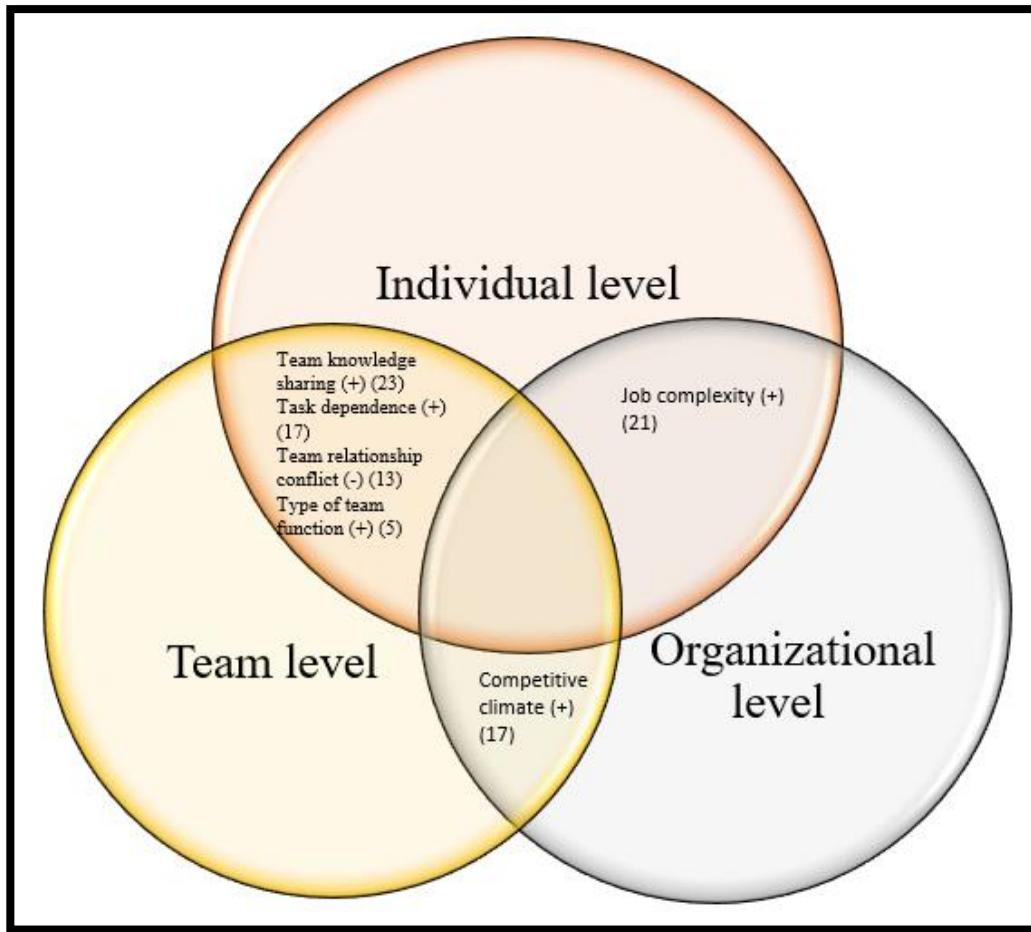
Table 4: Boundary conditions of the effects of humble leadership on mediating variables

INDIVIDUAL LEVEL	TEAM LEVEL
<p>Positive</p> <p>Leader-related:</p> <ul style="list-style-type: none"> • Leader proactive personality (4) (<i>impacting followers</i>) • Leader competence (24) (<i>impacting followers</i>) • Leader political skill (26) (<i>impacting followers</i>) <p>Follower-related:</p> <ul style="list-style-type: none"> • Traditionality (10) • Growth need strength (25) • Cognitive reappraisal (29) 	<p>Positive</p> <p>Leader-related:</p> <ul style="list-style-type: none"> • Leader performance (2) (<i>impacting teams</i>) • Leader effectiveness (12) (<i>impacting teams</i>) • LLX (15) (<i>impacting teams</i>) <p>Team-related:</p> <ul style="list-style-type: none"> • Team expertise diversity (3) • Team proactive personality (1) • Type of team function (5) <p>Task-related:</p> <ul style="list-style-type: none"> • Task interdependence (30) (<i>impacting teams</i>)
<p>Negative</p> <ul style="list-style-type: none"> • None 	<p>Negative</p> <p>Team-related:</p> <ul style="list-style-type: none"> • Team relationship conflict (13) • Team power distance (27)

Table 5: Boundary conditions of the effects of mediating variables on creativity and innovation

INDIVIDUAL LEVEL	TEAM LEVEL
<p>Positive</p> <p>Follower-related:</p> <ul style="list-style-type: none"> • Intrapreneurial personality (22) <p>Task-related:</p> <ul style="list-style-type: none"> • Job complexity (21) 	<p>Positive</p> <p>Team-related:</p> <ul style="list-style-type: none"> • Team knowledge sharing (23) <p>Task-related:</p> <ul style="list-style-type: none"> • Task dependence (17)
<p>Negative</p> <ul style="list-style-type: none"> • None 	<p>Negative</p> <ul style="list-style-type: none"> • None

Figure 9: Boundary conditions of the effects of humble leadership across multi-level studies



The first map consolidates the information about (i) the paths that explain how the influence of humble leaders occurs (mediating variables), and (ii) when the influence of humble leadership will vary (the boundary conditions) regarding the outcomes of creativity and innovation. To better understand the set of relationships that past studies explored, the following classification was used regarding the individual-level and team-level studies: (1) Mediating variables: (i) motivational; (ii) cognitive; (iii) affective; (iv) identification-based; and (v) social-relational. (2) Moderating variables: (i) Affective variable – that addresses the question “how we feel about something”, (ii) Behavioral variable – “what we do about something”, and (iii) Cognitive variable – “how we think about something”. Also: (i) leader-related variable; (ii) follower-related variable; (iii) team-related variable; and (iv) organization-related variable.

Concerning the mediating variables, we can verify that the majority of the studies relied on motivational variables to explain the influence of humble leadership, followed by studies that assessed the influence through cognitive variables. On the other hand, as far as I know, no studies explored the influence of humble leaders through the affective path (evaluating, for example, the emotions as a possible explanation for the impact of leader humility on followers or team outcomes).

A humble leader's influence was found to be submitted to boundary conditions that were responsible either for leveraging its power of influence (positive boundary condition) or for minimizing it (negative boundary condition). Past research shows that cognitive variables can potentialize the humble leader's influence, and also that those variables can be either follower-related or leader-related. The employees' growth need strength (paper 25) and cognitive reappraisal (paper 29), for example, are some follower-related cognitive variables that can leverage the indirect impact of humble leadership on creativity and innovation outcomes inside organizations.

Three leader-related cognitive variables were also identified – the leader's political skills (paper 26), the leader's competence (paper 24), and the leader's consciousness (paper 13). So, to promote the best influence on followers, which in turn will promote more creativity and innovation in organizations, the humble leader should also display political skills, be noticed as competent by followers, and act with consciousness.

Moreover, when followers build an affective commitment to the supervisor (paper 9), the humble leader's influence is potentialized and, consequently, the individual outcomes related to creativity and innovation escalate as well. Therefore, past academic research brings evidence to one affection variable that plays a boundary condition role in the relationship where humble leadership impacts creativity and innovation inside the organizations. Lastly, humble leadership influence was also maximized through some leader behaviors, like leader performance (paper 2), and leader effectiveness (paper 12), showing the importance of humble leaders to deliver performance and effectiveness to promote creativity and innovation in followers.

Regarding the team level, the humble leader influence was found to benefit from the team's proactive personality (paper 1) and team expertise diversity (paper 3) to promote creativity and innovation. Also, leader-leader exchange – LLX (paper 15), a behavioral variable, was found to help leverage the impact of humble leadership.

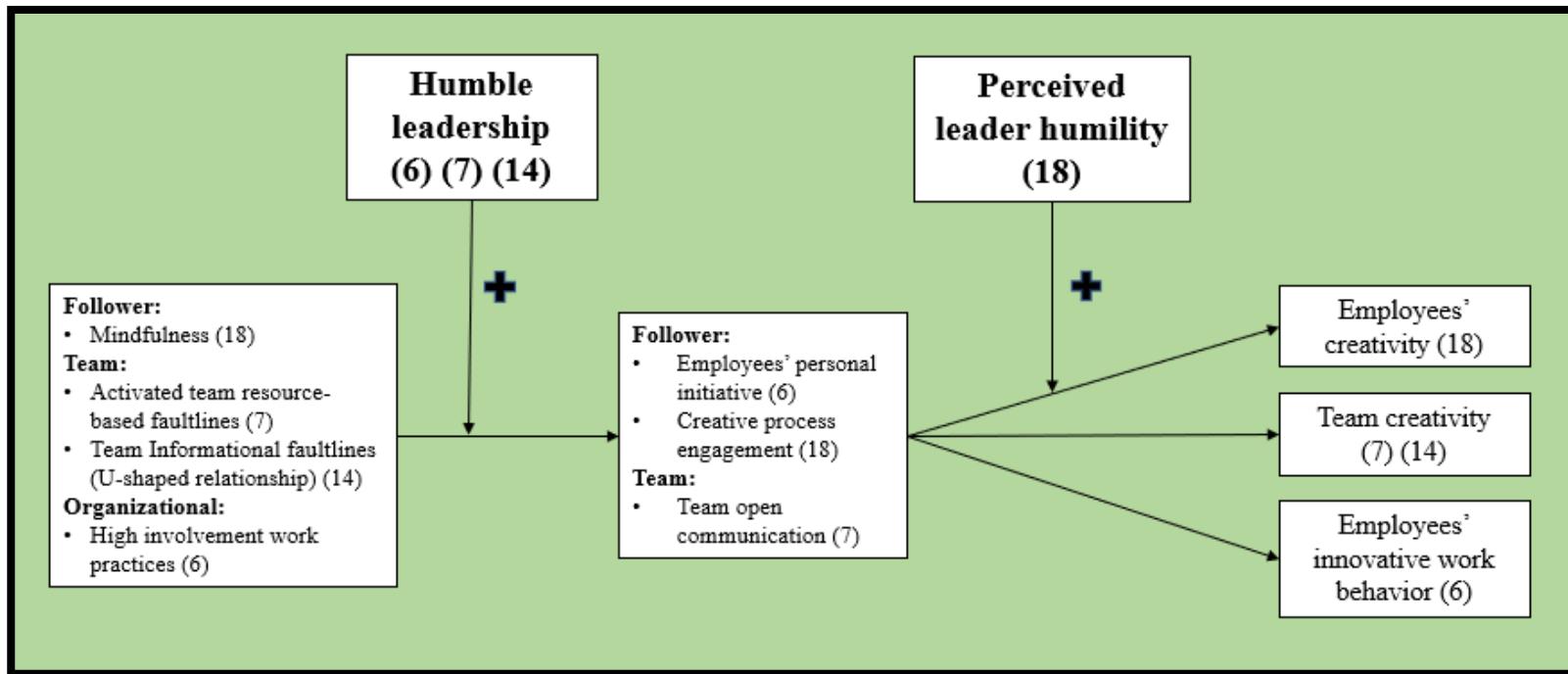
However, the humble leadership influence can be diminished by some team-related behaviors, like team relationship conflict (paper 10) and team power distance (paper 27). Thus, if teams experience high relationship conflict or high power distance, the influence of humble leadership on creativity and innovation will be reduced.

Humble leaders should also be attentive to their followers' intrapreneurial personalities (paper 22) and their own proactive personalities (paper 4), which was also found to be important in enlarging humble leaders' influence over creativity and innovation. Concerning the team level, team knowledge sharing (paper 23) and job complexity (paper 21) acted as relevant behavioral variables responsible for escalating the humble leadership influence over creativity and innovation in teams.

Across multi-level studies, some important boundary conditions to humble leadership can be highlighted as well: the interface of individual and team level showed that team knowledge sharing (paper 23), task dependence (paper 17); and type of team function (paper 5) are relevant to escalate humble leader's influence across individuals and teams. However, team relationship conflict (paper 13) was found to downplay humble leadership influence over individuals and teams regarding creativity and innovation.

Across individual and organizational levels, job complexity (paper 21) and top management support (paper 11) played a relevant role in magnifying the influence of humble leaders on creativity and innovation. Also, in connection with teams and the organizational level, competitive climate (paper 17) appeared to have a positive impact on humble leadership influence, amplifying its influence.

Figure 10: Second map – Nomological network of the humble leadership influence as a boundary condition



The second map shows what types of relationships the humble leadership moderates and if it is a positive or a negative influence that is conditioned to the leader's humility as a moderating variable. Past research shows that to promote employees' innovative work behavior, organizations should invest in high-involvement work practices (paper 6), due to their positive influence on employees' initiative. However, humble leadership proved to boost the positive influence of high-involvement work practices that indirectly led to innovative work behavior through followers' initiative.

Humble leadership also proved to widen the positive influence of followers' mindfulness (paper 18) on creative process engagement, which, consequently, impacts employee creativity. The positive influence of activated team resource-based faultlines (paper 7) on team open communication is another example of a positive relationship that is enlarged by humble leadership, which consequently impacts team creativity. Last but not least, the positive influence of team informational faultlines (paper 14) on team creativity is positively moderated by leader humility.

Figure 11: Third map – Nomological network of the humble leadership influence on performance-related outcomes through creativity & innovation

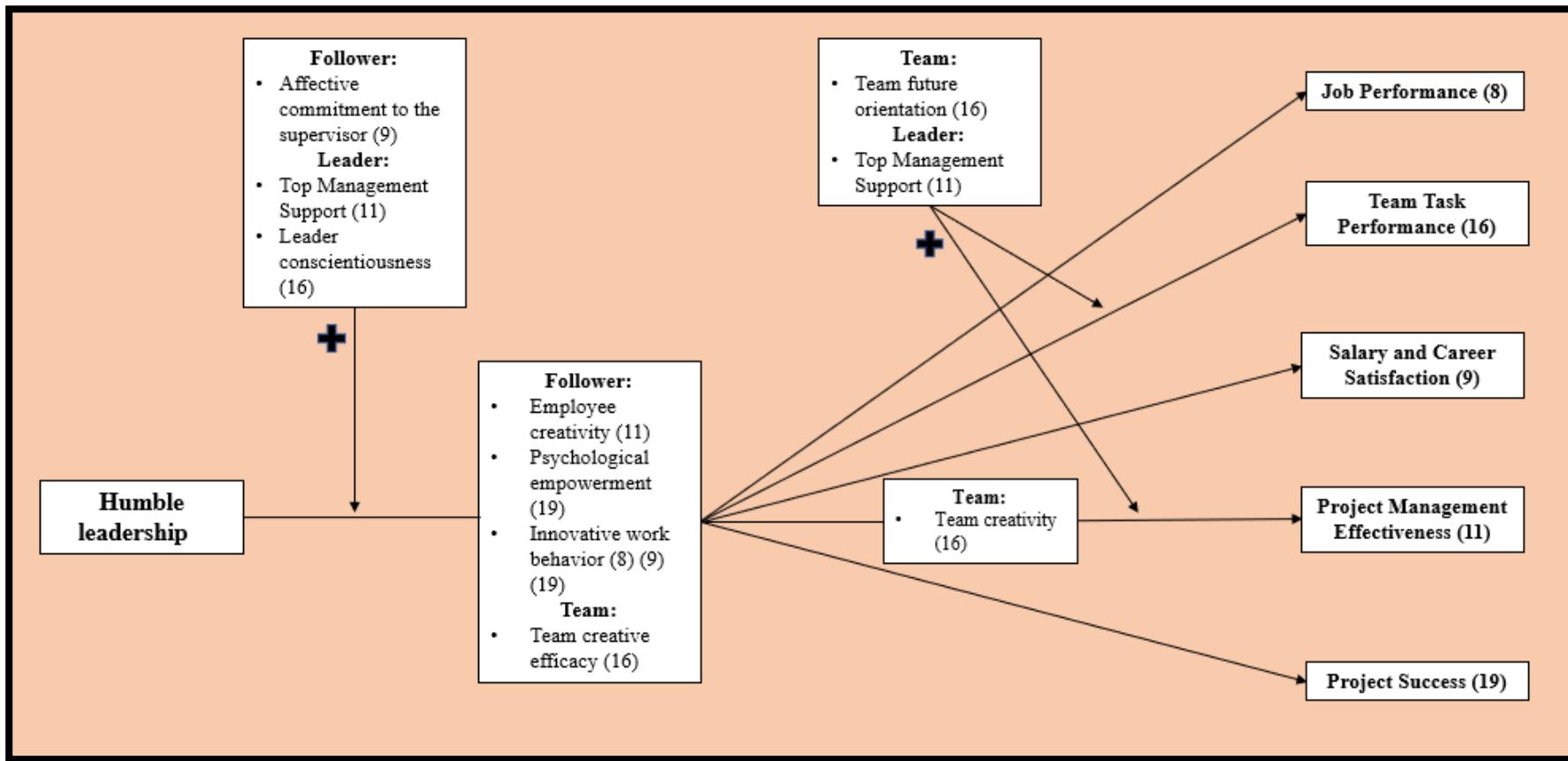


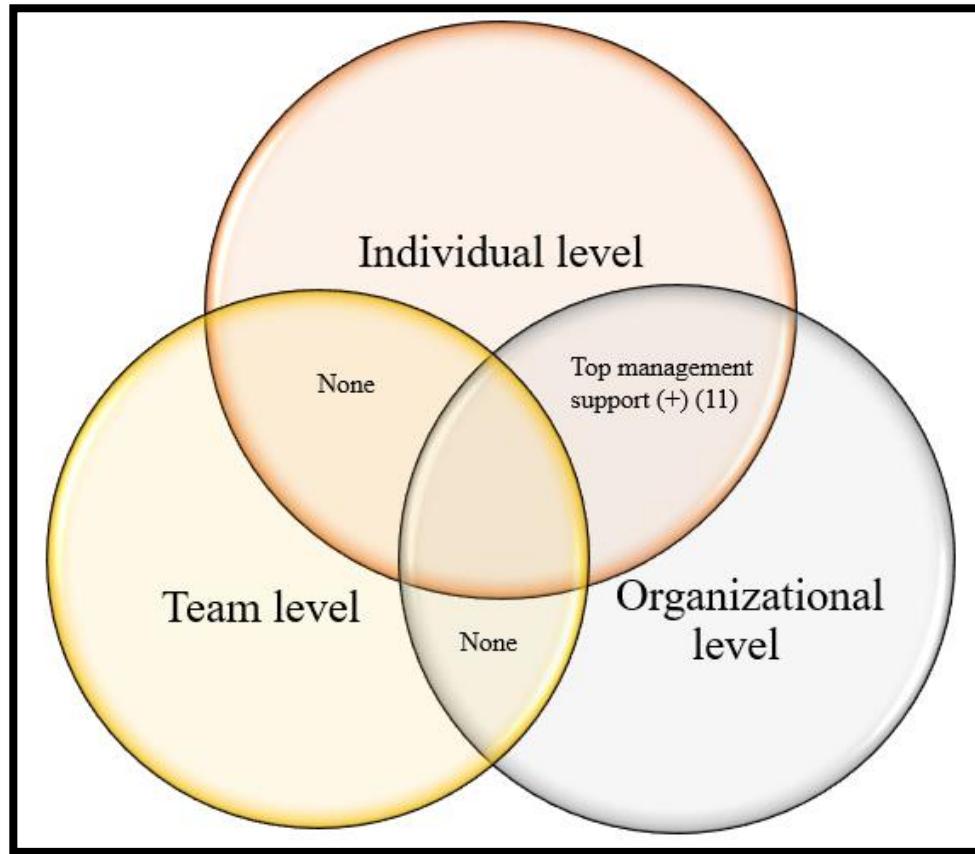
Table 6: Boundary conditions of the effects of humble leadership on creativity & innovation

INDIVIDUAL LEVEL	TEAM LEVEL
<p>Positive</p> <p>Leader-related:</p> <ul style="list-style-type: none"> • Top management support (11) <i>(impacting followers)</i> <p>Follower-related:</p> <ul style="list-style-type: none"> • Affective commitment to supervisor (9) 	<p>Positive</p> <p>Leader-related:</p> <ul style="list-style-type: none"> • Leader consciousness (16) <i>(impacting teams)</i>
<p>Negative</p> <ul style="list-style-type: none"> • None 	<p>Negative</p> <ul style="list-style-type: none"> • None

Table 7: Boundary conditions of the effects of creativity & innovation on performance-related outcomes

INDIVIDUAL LEVEL	TEAM LEVEL
<p>Positive</p> <p>Leader-related:</p> <ul style="list-style-type: none"> • Top management support (11) 	<p>Positive</p> <p>Team-related:</p> <ul style="list-style-type: none"> • Team future orientation (16)
<p>Negative</p> <ul style="list-style-type: none"> • None 	<p>Negative</p> <ul style="list-style-type: none"> • None

Figure 12: Boundary conditions of the effects of humble leadership across multi-level studies



Lastly, the third map brings together information that also helps understand when the influence of humble leadership varies, but now within a direct relationship with creativity and innovation, which now act as mediating variables. Thus, past studies show that through creativity and innovation, humble leaders can promote job performance (paper 8), as well as high salary and career satisfaction (paper 9). At the team level, the outcome of team task performance also benefited from a humble leader's influence through team creative efficacy (paper 16). Finally, at the organizational level, project management effectiveness (paper 11) and project success (paper 19) proved to profit from leader humility through employee creativity and psychological empowerment respectively.

However, the positive influence of humble leadership on the mediating variables related to creativity and innovation is subject to a set of boundary conditions. For example, affective commitment to the supervisor (paper 9) proved to expand the effect of humble leadership on innovative work behavior, as well as top management support (paper 11) on employee creativity. At the team level, leader conscientiousness (paper 16) boosts the impact of humble leadership on team creative efficacy.

The humble leadership influence continued to be subjected to boundary conditions at the second stage – where the mediating variables of creativity and innovation connect leader humility to the final researched outcome. Top management support (paper 11) proved to be a relevant variable to help magnify leader humility's positive influence since it enlarged the impact of employee creativity on project management effectiveness. The same occurred at the team level with team future orientation (paper 16), which was responsible for expanding the influence of team creative efficacy on team task performance.

Concerning the multi-level studies, this research found that top management support (paper 11) was responsible for maximizing the effect of employee creativity (individual level) on project management success (organizational level), providing evidence to the cross-level effects of humble leadership inside organizations in connection to creativity.

2.5 Discussion and future research agenda

This study investigated the impact of humble leadership on creativity and innovation inside organizations, following the methodological stages documented

herein, but not completely flawless or free from research limitations, as described in the following section. To answer the research question “What is the state of the art on leader humility and creativity & innovation in the field of business? How a conceptual framework resulting from an integrative review of previous studies would look like? What conclusions could be drawn, and what future research avenues could be suggested?”, the present work mapped the scientific production and knowledge development over time on leader humility and creativity/innovation in the field of business.

The research analysis led to an integrative review that summarizes past empirical literature and identifies main research trends to finally allow the development of a conceptual map based on the conclusions reached by the three methodological steps taken. The conclusion also indicates some of the research gaps found and puts forward a future research agenda.

Generally, the findings can be resumed by the results achieved from the three methodological stages. As a result of the first stage, it was possible to conclude that academic research on humble leadership has grown in quantity and importance over the last years, mainly in the fields of business and management, psychology, and social sciences, having experienced a significant increase after the publication of the work of Owens and colleagues in the year 2012.

Additionally, the theme of humble leadership was explored in connection with several other topics in the business field, such as engagement at work, psychological safety, psychological capital, psychological empowerment, knowledge sharing, task interdependence, and team effectiveness. Moreover, it was also noticed that creativity and innovation have been constantly receiving growing attention from scholars conducting research on humble leadership, whether assessing the combined topics at the individual level, such as creative process engagement, follower creativity, and innovative work behavior; or at the team level, such as team creativity, team innovation, team creative efficacy; or at the organizational level, such as innovation, organization’s innovative climate, and firm innovativeness.

Therefore, future academic studies should continue focusing on research that explores the combination of leader humility and creativity & innovation, diving more deeply into the matter to not only gain fresher insights but also to establish

the boundaries of the humble leadership influence over creativity and innovation, offering a more refined understanding to the business field.

As a result of the second methodological stage, the study concluded that regarding the intersection of humble leadership and creativity & innovation themes, most of the samples used in the surveys are very diversified, with data being collected from different industries, such as textiles, automotive, real state, food, and beverage, but mainly from the industry of technology. Due to the wide variety of industries, with very specific organizational cultures for each sector, it seems worth recommending that future studies focus more deeply on assessing the impact of humble leadership for each particular business industry, looking for possible impact differences on creativity and innovation, but also pursuing an understanding of each one's distinguishing limits (boundary conditions).

This research also observed that data were collected mostly in China and Pakistan. The studies are mostly quantitative, using the survey data collection method. The vast majority of studies focused on the influence of leadership via leveraging resources and not developing resources to assess the impact on creativity and innovation outputs in organizations, whether at the individual, team, or organizational level. Only a handful of multi-level studies (cross-level) were identified, having, as far as the researcher noticed, no experimental design or qualitative studies being carried out so far, pointing to a promising research avenue to be explored by future studies.

As a result of the third methodological stage, it was possible to identify that research on leadership and creativity & innovation can be divided into three main large groups (which resulted in the consolidation of the three conceptual maps). The first map brought together studies that assessed the leadership phenomenon as an independent variable, which impacts creativity and innovation through one or more mediating variables (whether at the individual, team, or organizational level). All stages of influence are subject to possible limits through the performance of a moderating variable (either positive or negative).

Regarding the conclusions drawn from the first map, it is important to highlight, for example, that most of the studies relied on motivational variables to explain how the humble leader influences followers and teams' outcomes related to creativity and innovation. So, we seem to lack academic studies that explore the affective path between humble leadership and creativity & innovation, which would

address the question of “how followers feel about something” – about humble leadership, in our case. We also lack studies exploring identification-based processes through which humble leadership promotes creativity & innovation outcomes, which dive into the mechanisms through which humility may awaken identification and disidentification with a leader, and thereafter promote/deter creativity and innovation.

As far as this research is concerned, there seem to be no experimental design studies to assess cause-and-effect relationships, as well as no qualitative studies to better explain some unanswered questions about how humble leaders impact followers, teams, and organizations concerning creative-related and innovation-related outcomes. With respect to the boundary conditions, the research verified that at the individual level of analysis, the humble leadership influence is leveraged by several cognitive variables, either leader-related or follower-related. In connection with emotions, only one variable was tested and found to potentialize the humble leadership influence on creativity and innovation outcomes – the follower’s affective commitment to the supervisor.

Regarding the team level, past research showed that the influence of a leader’s humility can be maximized by leader-related, team-related, and also by organization-related variables. On the other hand, humble leadership’s influence can be diminished by some team-related behaviors, like team relationship conflict and team power distance, for example. Cross-level studies also demonstrated that humble leaders should be aware of some team-related and organization-related variables, that can help potentialize their influence, like team knowledge sharing and task dependence, for example.

The second map combined studies in which humble leadership figures as a moderating variable, that is, as a boundary condition of the effect of a given independent variable on creativity and innovation outputs in organizations, whether at the individual or team level. Amidst the main conclusions drawn, the present research highlights the following: there seems to be an underdeveloped research area with very few studies; humble leadership proved to boost the positive influence of high-involvement work practices that indirectly led to innovative work behavior through followers’ initiative; also, humble leadership was responsible for widening the positive influence of followers’ mindfulness on creative process engagement, which, consequently, impacted employee creativity; and there also seems to have a

research gap covering empirical data beyond the US-China context – thus concerned with cultural factors as well, not only interactions with individual, team, and organizational factors.

Finally, the third map addressed studies in which humble leadership appears as an independent variable (as in the first group), but creativity and innovation act as mediators of the relationship between humble leadership and outputs linked to performance (like job performance, team task performance and project management effectiveness), as well as high salary and career satisfaction, bringing information about what creativity and innovation provoke in organizations.

Some findings include that the aforementioned positive influence of humble leaders can be subjected to certain limitations or boundary conditions either at the first stage of the mediation model, like affective commitment to the supervisor, top management support, and leader conscientiousness, or at the second stage, like top management support, team future orientation. We can also conclude that there seems to be an underexplored research avenue that focuses on organizational-level outcomes, particularly associated with performance, productivity, profitability, firm dynamic capabilities, and sustainability targets.

Unfolding each of these groups, the present work presents details about the type of variables that the studies explored (whether cognitive, behavioral, or affective, as well as whether leader-related or not), laying out the limits of action discovered so far by the influence of humble leadership on creativity and innovation in organizations, as well as indicating important gaps to be filled in by future academic research.

Additionally, it seems interesting to invite the reader to engage in a critical reflection on the risks of knowing so little about the influence humble leadership may have on creativity and innovation through the process of developing resources. Despite the existence of a few studies exploring both the social learning theory and the self-expansion theory as the underlying mechanism that explains the influence of humble leadership, none of them assessed the mediating variables of coaching and mentoring, at the individual level, as well as learning, at the organizational level – as indicated by Fischer, Dietz, and Antonakis (Fischer et al., 2017).

We should also seek deeper knowledge of the limits of the positive impact of humble leadership on creativity and innovation in organizations. Some practical implications like leader and CEO selection processes can be listed. A clear bias to

only publish articles that confirmed their proposed hypotheses was also identified amidst the final sample of manuscripts, as well as a lack of qualitative studies. Some theoretical unanswered questions would benefit from a qualitative research approach, for example, the multicultural aspect – so, what does it mean to be humble to each culture?

Therefore, along the lines of what has been indicated above, future research discussions should extend prior work into some new and interesting domains of inquiry, including the cultural dimension, which is a promising perspective to be undertaken by academic scholars to potentially enrich our understanding of the limits of humble leadership in different cultural settings. Also, previous studies broadly suggest that the relationship between humble leadership and creativity & innovation in organizations is mainly positive, having, as far as we know, no past academic research reported negative effects and only a few explored the nonlinear relationship (U-shaped effect) of humble leaders on creativity and innovation. Thus, pointing to an interesting research domain to be explored by future studies.

Limitations

The present study has the following limitations. First, following previous studies that shared similar research objectives regarding the business field (Al-Khoury et al., 2022; Ng et al., 2023; Robles-Elorza et al., 2023), research data were collected only from the Scopus database, which is one of the most complete academic databases in the business research area.

Future studies could consider including more databases as resources to select the final sample, as well as academic works that were not published in high-impact factor journals, such as dissertations and thesis, allowing a more complete understanding of the research findings on the topic intersection of humble leadership and creativity/innovation.

Second, the present study investigated the leadership phenomenon focusing only on scientific production in the business field. Future research could also explore data across other knowledge fields, like tourism, medicine, etc.

Third, regarding the keywords used to carry out the bibliographic research. Although the majority body of academic work that covers the phenomenon of humble leadership can be found under the construct of “leader humility” or “humble leadership”, the researcher can not affirm that there is no other academic work

published in high-impact journals that addresses the phenomenon but not used the two expressions above as key-words.

Future studies could consider broadening the research parameters to narrow down the possibility of other academic works that addressed the humble leadership phenomenon without expressly using the keywords of leader humility or humble leadership.

Fourth, the choices made regarding the exclusion criteria to reach the final sample. Future research could consider including all scientific production in the business field, despite the journal impact factor, for example.

Finally, another limitation is that this research used a specific methodological structure that combined different but complementary steps to unravel the findings that have been reached. Considering the growing interest in the subject, future studies should carry out different research methodologies, like meta-analysis or a more in-depth bibliometric design study to reach additional findings to the present research.

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Disclosure

The author reports no conflicts of interest for this work and declares that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

3. Experimental Design Studies – Paper 2

LEADER HUMILITY AS A BRIDGE TO HELP INDIVIDUALS NAVIGATE THE PURPOSE AND PROFIT ‘PARADOX’ CREATIVELY: EXPLORING CAUSAL EFFECTS OF HUMBLE LEADERSHIP

“You can’t solve a problem on the same level that it was created. You have to rise above it to the next level”

– Albert Einstein

Abstract

The great challenge of harmonizing economic, social, and environmental dimensions through sustainable development calls for academic scholars to explore new perspectives within the creative process. Organizational leaders, followers, and teams try to untangle the purpose and profit paradox (Zeng et al., 2017; Soderstrom & Heinze, 2021) to unfold new solutions that create shared value (Porter & Kramer, 2011). The present work is composed of two experimental design studies that addressed cause-and-effect concerns on humble leadership and creativity through the paradox perspective. The first study followed the methodological steps of a quasi-experiment research design, manipulating leadership using both video clips and vignettes, and was carried out following a laboratory in-person experience condition with 107 graduate and undergraduate students from two public universities in Rio de Janeiro. Results confirmed that leader humility is responsible for higher levels of paradox mindset and sustainability-oriented creative problem-solving, showing a marginally significant effect on positive emotions. Also, the results showed that humble leadership leads to sustainability-oriented creative problem-solving only via a paradox mindset. The second study followed the methodological steps of an experiment research design, manipulating leadership using video clips and was carried out on-line with 74 graduate and undergraduate students from a public and a private university in Rio de Janeiro. Results confirmed that humble leadership is responsible for promoting positive emotions and perspective-taking on followers, eliciting less negative emotions when compared to the control condition.

3.1 Introduction

Against the backdrop of the sustainability-oriented business literature, where academics started to dive more deeply into this new business phenomenon of placing purpose alongside profit, old assumptions and paradigms that used to underpin the way we thought about doing business, began to be somehow reshaped.

According to this new perspective, a business can and must fulfill a higher role, illuminating the interconnected worlds of organizations, society, living beings, and the environment (Hendry, 2001). An outdated view of business, as a self-sufficient endeavor, begins now to give place to a more accurate understanding of what it means to do business – an interdependent practice (Frostenson, 2016).

However, to do so, businesses' guiding principles need to shift away from solely creating shareholder value. The ability to alleviate, navigate, and creatively resolve the tensions arising from an organizational dual-objective that seeks purpose alongside profit has already been addressed by business model innovation literature in the context of sustainability studies (Joyce & Paquin, 2016; Matzembacher et al., 2020; Moroz & Gamble, 2021).

It is also well established that effective leadership has been considered a crucial part of the puzzle for solving various societal, political, and organizational problems, past and present (Mumford et al., 2000). Over the last ten years, huge efforts have been made to develop a thorough understanding of the positive impacts of leader humility on several organizational outcomes (Chandler et al., 2023; Cho et al., 2021; Peng et al., 2022).

The virtue of humility entails social signals of a willingness to submit the self to something greater, to adopt an other-centered perspective, which, ultimately, involves an accurate view of one's flaws (being down-to-earth and holding a high self-awareness), an appreciation of others' strengths and capacities to contribute (a low self-focus), and also, to be opened to learn, to listen to others' ideas (an intellectual openness) (Owens & Hekman, 2012; J. Wang et al., 2017).

Considering the complex challenge of reframing business and its processes sustainably and responsibly, the present research argues that leader humility appears as a propitious tool to help followers expand their attitudes, abilities, and behaviors to effectively navigate the purpose and profit bundle of paradox.

Consequently, this article draws from a diversity of literature sources to explore the potential nexus between humble leadership and the purpose-and-profit paradox enclosed in a sustainability-oriented business challenge, where creative solutions are sought to help organizations balance social, environmental, and economic ambitions.

But how and when would the leader humility predict followers' positive outcomes amidst the purpose and profit paradox challenge (sustainability-oriented creative process)? Would followers under the humble leader more often: (a) experience more positive emotions and less negative emotions? (b) display a paradox mindset? (c) engage in perspective-taking? (d) display higher creative process engagement? and (e) produce more creative solutions to the purpose-and-profit business challenge (sustainability-oriented creative problem-solving)? Would followers' emotions, paradox mindset, perspective-taking, and creative process engagement mediate the path between humble leadership and sustainability-oriented creative problem-solving?

Inspired by the aforementioned questions, the present research, through two experimental studies set on a fictional sustainability-oriented business challenge, aims to answer recent calls for research efforts to help advance knowledge on the relationship between the leader's humble behaviors and individual creativity (Mallén et al., 2020; Wang et al., 2020), addressing the research gap in assessing the cause-effect relationship between these two variables (Chen et al., 2021; Wang et al., 2018).

Hence, studies 1 and 2 ground themselves on the general proposition that humble leaders will have a positive effect on followers' sustainability-oriented creativity (study 1), positive emotions (studies 1 and 2), paradox mindset (studies 1 and 2), perspective-taking (studies 1 and 2), and creative process engagement (studies 1 and 2); but will have a negative effect on followers' negative emotions (studies 1 and 2). The first study also contends that sustainability-oriented creative problem-solving (creativity) will be achieved by followers of humble leaders through positive emotions, less negative emotions, paradox mindset, perspective-taking, and creative process engagement.

Therefore, the present work aims to extend the current research on humble leadership in three fundamental ways. Firstly, by addressing the call of Wang and colleagues (Wang et al., 2018) for enhanced exploration of humble leadership's

causal effects on creativity and related outcomes (at the individual level). Secondly, this research also aims to address the call for a deepened understanding of sustainability-oriented creativity (Schulz et al., 2021), which is a brand new research field that is still in need of robust empirical research. Thirdly, the study tests specific hypotheses that bring together these two fields of inquiry (humble leadership and sustainability-oriented creativity) by applying the paradox perspective and conducting two experimental studies. To the best of my knowledge, this is the first study to test the combination of the two aforementioned research topics within the context of experimental design research.

To answer the research questions, the following steps were undertaken. First, the relevant literature is presented through a theoretical background development, grounding the explanatory logic behind hypotheses. Secondly, an overview containing the methodological explanation, how the two experimental studies were formulated, research design, and general information that is common to both studies. Thirdly, each study is presented with its analysis, report of major findings, and discussion, to finally lay out general conclusions, presenting practical and theoretical implications, further investigation research suggestions, and limitations.

3.2 Theoretical grounding and hypotheses development

Humble leadership

Falling under the umbrella of the school of positive leadership approaches, the leader's humility or the leader's humble behavior, despite being a “vertical style” of leadership (W. Liu et al., 2017) is considered a bottom-up approach to leadership (Qin et al. 2020), and due to its clear moral underpinnings, has also been explored amidst the business ethics research (Lee et al., 2020; Qin et al., 2019).

Bradley Owens and David Hekman proposed three behavioral dimensions for the leader-expressed humility construct (that focus on the interpersonal nature of humility): (i) to proactively adopt an accurate view of oneself: the first one grasps the constant desire to seek a true and honest vision of the self (personal limits awareness); (ii) to appreciate others' strengths and contributions: the second one brings about the recognition of value on what others can bring to the discussion, their contributions and capacity to develop new solutions, bring advancements and build perspectives that the leader could not figure out by himself; and (iii) to be open to discussion, listen to feedbacks and adopt a teachable attitude toward others:

the last one, teachability, entails openness to the new, a willingness to learn, to listen to feedback, and recalculate the route accordingly (Owens et al., 2013; Owens & Hekman, 2012, 2016).

Since then, several important organizational outcomes have been attributed to humility as an interpersonal characteristic, such as general performance, creativity, innovation, satisfaction, learning goal orientation, engagement, and turnover (Owens & Hekman, 2016; Owens, Johnson & Mitchell, 2013). Thus, the humble behaviors of the leader are deemed to enable a competitive advantage over time, since they are responsible for promoting adaptability, higher performance, creativity, an ongoing learning orientation, and many other positive organizational outcomes that are important for business survival (Owens, Johnson, & Mitchell, 2013; Owens & Hekman, 2012; Rego et al., 2017).

Humble leadership and sustainability-oriented creativity (creative problem-solving)

Past empirical evidence points to individual and team creativity as a relevant component of organizational success and long-term development (Shalley & Gilson, 2004). Previous studies have also highlighted leadership as a facilitator of creativity, supporting the overall idea that there are a broad number of processes through which leaders can influence followers' and teams' creative outcomes inside organizations (Chen et al., 2021; Wang et al., 2020).

Although leadership research grounded on human values is still at an early stage of development, its ideas and insights have already given rise to interest in humility as an essential attribute of leaders. The humble leadership style, i.e., a bottom-up perspective that fosters proactive attitudes in followers by praising their ideas and contributions while also recognizing and accepting mistakes, seems to positively impact creative outcomes and innovation in organizations (Chen et al., 2021).

By pinpointing specific behaviors of the leader, such as acting humbly, empirical research enables specifying the exact leader behaviors that bring about distinctive influence processes and unfolding organizational outcomes (Mallén et al., 2020; Yukl, 2012). Concerning the interplay between the leadership phenomenon and creativity and innovation in the *milieu* of business, recent academic research followed a similar pattern of focusing on a specific leadership

dimension, such as humility, helping advance the leadership construct knowledge amidst different challenges of today's world. In doing so, previous studies observed that humble leaders facilitate team creativity by enhancing the team's creative efficacy through their understanding and consideration of other points of view, admitting their limitations, viewing optimistically others' limitations, and also fostering teachability (Mallén et al., 2019, Wang et al., 2020). Past research has also called for future works to deeper explore the effect of leader humility on follower creativity (Wang et al., 2018).

However, an additional variable has been recently added to the puzzle – the need to innovate, to produce creative solutions inside the organizations, but creativity and innovation that equalize different and, not rarely, contradictory interests from several stakeholders (Scuttari et al., 2021; W. K. Smith et al., 2013; Van der Byl & Slawinski, 2015; Walker et al., 2020).

Organizations are now pursuing what literature calls an Aristotelian perspective of doing business (Aristotle, 1905; Dierksmeier & Pirson, 2009; Porter & Kramer, 2011; Rachmawati et al., 2019; Wijnberg, 2000), where the endeavor of running a corporate initiative should also address social and environmental problems – generating common good benefits. Amidst this complex scenario, leaders and followers must be able to manage purpose and profit tensions to achieve what has been called “sustainability-oriented creativity” (Chuang & Lee, 2023; Shu et al., 2020; Souto, 2022).

But how to enable this inside organization? How can professionals act as social innovators and create a more sustainable world for present and future generations (Argandona, 2015; Laszlo & Brown, 2014)? According to the psychological theory of self-expansion, all human beings are deemed to have an intrinsic desire to self-expand, to increase their “physical and social resources, perspectives, and identities that facilitate achievement of any goal that might arise” (Aron et al., 2001, p. 478”).

Because self-expansion “can be viewed as a precursor to self-development” (Dansereau et al., 2013, p. 800), and self-development here is comprised in its broad definition, including emotional, cognitive, and social development, this research proposes that humble leaders would trigger followers willing to self-expand, helping them overcome and manage the initial barrier of tensions, embracing them instead of ignoring or moving apart from them, to explore different ideas, and,

ultimately achieve the desirable creative solutions that harmonize the different perspectives.

Hence, humility, as one of the leader's singular behaviors and attributes, is proposed to motivate followers to change, to equip them with the necessary tools and resources to allow their expansion, which will let them manage the inherent tensions of the sustainable creative process. When humble leaders praise followers' contributions, recognize their abilities and achievements, publicly admit their limitations and mistakes, seek feedback, and show a willingness to learn, they provide their followers with the necessary psychological change that will trigger their self-expansion (Mao et al., 2019).

Consequently, followers would be able to tolerate tensions, allowing themselves to exercise their creative thinking to come up with creative solutions to the apparent paradox of the purpose and profit dual goal – unleashing and harnessing their sustainability-oriented creativity (Mirvis & Googins, 2018; Soderstrom & Heinze, 2021). Therefore, the present research grounds itself on the general psychological theory of self-expansion (Aron et al., 1991, 2007) to theorize about the relationship between humble leadership and sustainability-oriented creativity, as follows:

H1 – Humble leadership will have a positive effect on followers' sustainability-oriented creative problem-solving.

Humble leadership and followers' positive and negative emotions

The scientific interest in human emotions is not recent, as we can trace its theoretical roots back to Darwin's 1872 work "The expression of the emotions in man and animals", which inspired the theoretical foundations of most current psychological studies on emotions (Gendron & Barrett, 2009). Darwin claimed that "many movements and gestures in humans, including sets of coordinated facial and body movements, are caused by internal mental states that are seeking expression and hence are called 'emotional expressions'" (Gendron & Barrett, 2009, p. 321-322).

Subsequent psychological research explored those internal mental states, as they could be strongly connected to several human behaviors (Gendron & Barrett, L, 2009; Kuroda & Kameda, 2019; Pizarro et al., 2021). Positive emotions,

like as feeling alert, inspired, determined, attentive, and active, have been usually connected to positive human behaviors, while negative emotions, like as feeling upset, hostile, ashamed, nervous, and afraid, have been commonly associated with negative human behaviors (Pizarro et al., 2021; Thompson, 2007; Watson et al., 1988).

Psychological researchers argue that the reason behind every emotion impacting social interactions is that emotional experiences act as a motivator to promote or disrupt human efforts toward something (Pizarro et al., 2021). If we take negative affect, for example, we realize that to maximize gain and avoid punishment, individuals usually will not engage in some sort of collective action if they fear something (Kuroda & Kameda, 2019). This points, thus, to a clear relevance to organizational studies to develop a deeper understanding of the impact of emotions in the workplace.

Therefore, it is not recently that business scholars have started to show a keen interest in understanding the impact of positive and negative emotions on many organizational outcomes (Staw & Barsade, 1993; Watson & Tellegen, 1985). Taking stock of business research on positive emotions at the workplace, which can be defined as the “affective states, processes, and functions regarded as valuable in themselves” (Diener et al., 2020, p. 455), we realize that positive emotions can be a cause of many desirable workplace behaviors that are responsible for companies’ success, such as creativity, work engagement, and collaboration (Diener et al., 2020).

According to past empirical evidence, for example, positive emotions can foster psychological resilience, providing the individual with more tools to cope with negative emotions, and being able to put negative emotions in a broader context, thus allowing emotion regulation to occur (Hughes et al., 2018). Positive emotions would, thus, help individuals leave some sort of “survival mode” and start to see more like the “big picture” of the problem, improving their ability to cope with challenging situations, and increasing distress tolerance, among others (Hughes et al., 2018). Because positive emotions can enhance employees’ coping resources, it can increase, for example, employees’ creativity and innovation (Zhou et al., 2014).

Previous empirical studies have also turned their attention toward understanding, for example, the influence of leader affective displays – either

positive or negative – and its effectiveness (van Knippenberg & van Kleef, 2016), and also the relationship between leadership and followers' positive emotions (Sy et al., 2018). Additionally, business scholars have also explored the role of followers' emotions as a mediation variable that connects charismatic leadership to organizational outcomes (Sy et al., 2018). Only more recently, though, have researchers attempted to start seeking a deeper understanding of the connection between leader humility and followers' emotions, for example, as responsible for fostering the emotions of empathy and gratitude in followers (Naseer et al., 2020).

That being considered, leadership appears as one of the possible organizational sources that can evoke affective events among followers, either positive emotions or negative emotions (Dasborough, 2006; Dasborough & Ashkanasy, 2002; Vianello et al., 2010). However, as far as I know, we lack past academic research on leader humility and negative emotions, and we also lack experimental design studies linking humble leadership to emotions (either positive or negative).

The affective events theory (Weiss & Russell Cropanzano, 1996) contends that employees react with their emotions to organizational events (including leadership), which directly influence the way they behave, their attitudes, and so forth. Relying also on the preponderant understanding of positive constructs leading to positive organizational outcomes, and of negative constructs paving the way to negative outcomes (Lindebaum & Jordan, 2014), the present research contends that leader humility will elicit more positive emotions in followers than negative emotions.

Along the same lines, past academic research found empirical evidence of the mediating effect of follower moral emotions in the relationship between ethical leadership and follower discretionary work behavior (extra effort and helping) (Eisenbeiss & van Knippenberg, 2015), and also the mediating role of employee emotions in the relationship between authentic leadership and employee innovation (Zhou et al., 2014).

This work also relies on the positive psychology theory of broaden-and-build theory (Fredrickson, 1998), which was developed to move forward the previous studies on negative emotions carried out in Psychology, to suggest that positive emotions can broaden one's awareness and response to events, extending one's potential, building resiliency, and encouraging novel exploratory thoughts and

actions (Fredrickson, 1998; Van Cappellen & Rimé, 2014), and consequently, fostering creativity and innovation (Leung et al., 2018; Y. Liu et al., 2020). Consequently, the present research proposes the following hypotheses:

H2 – Humble leadership will have a negative effect on followers' negative emotions (reducing them).

H2a – Humble leadership will have an indirect effect on followers' sustainability-oriented creative problem-solving via its negative effects on followers' negative emotions.

H3 – Humble leadership will have a positive effect on followers' positive emotions.

H3a – Humble leadership will have an indirect effect on followers' sustainability-oriented creative problem-solving via its positive effects on followers' positive emotions.

Humble leadership and paradox mindset

In a highly complex world, where social and environmental problems begin to be part of the organizational objectives, leaders embark on the quest to use the power of business for good, alongside generating profits for shareholders. That is when tensions and paradoxes begin to emerge. This challenge generally brings about some difficulties, whether at the organizational level or the individual level, putting pressure on companies and professionals to develop specific skills and mindsets that provide them with the ability to overcome tensions and contradictions emerging from the work environment.

Consequently, adopting an attitude of embracing and accepting tensions, of feeling energized by them, should help professionals leverage those tensions and produce creative solutions and innovation in organizations (Miron-Spektor et al., 2018). This attitude of accepting tensions allows the individual to reframe negative events and adopt a positive approach, where difficulties are seen as an opportunity for growth and learning (Liu et al., 2020; Miron-Spektor et al., 2018).

The humble leader entails social signals of a willingness to submit himself to something greater, letting be guided by an other-centered perspective, which, ultimately, involves an accurate view of one's flaws (being down-to-earth and holding a high self-awareness), an appreciation of others' strengths and capacities to contribute (a low self-focus), and also, to be opened to learn, to listen to others' ideas (an intellectual openness) (Owens & Hekman, 2012; J. Wang et al., 2017).

Thus, followers of the humble leader would be more likely to accept the tensions inherent in situations where different interests collide and, notwithstanding, must be pursued simultaneously within a sustainability-oriented creative process. Followers of the humble leader would be willing to deal with uncertainty and process ambiguous information, make the best of the situation, and act objectively and impartially (Naseer et al., 2020). The humble leader would serve as an instrument to help followers expand themselves to not succumb to those tensions, but to flourish, developing a paradox mindset that will foster more creative solutions for organizations that are pursuing the dual goal of purpose and profit (Aron et al., 2007).

Therefore, humble leaders would help followers to feel and think about paradoxical situations from a different perspective, modifying the way the follower selects information, and deals with information and data. Followers will no longer need an obvious and objective answer, accepting ambiguous and paradoxical contexts better, showing a greater willingness to process less stereotyped and ready-made information, and increasing their resilience to ambiguity and uncertainty, typical of a creative challenge that seeks to equate opposing interests that seems to be mutually exclusive.

Consequently, humble leadership would foster a paradoxical mindset in followers, which would enable them to have a more positive attitude while dealing with processes that require tensions' reconciliation, for example. Previous academic research has already explored the effect of humble leadership in research and development teams, inspiring followers to embrace a growth-creative mindset, which leads to follower creativity (Yang & Xu, 2022).

Therefore, humble leaders would be able to make followers expand themselves (Aron et al., 2007) to develop the necessary attitude, skills, and mental state to navigate paradoxical challenges, thus, reducing tensions and freeing up "cognitive space" for reflection. Consequently, it makes them enjoy, feel comfortable, uplifted, and energized when managing conflicting demands and tension between ideas (Miron-Spektor et al., 2018). As a result, followers would achieve higher levels of sustainability-oriented creative problem-solving.

H4 – Humble leadership will have a positive effect on followers' paradox mindset.

H4a – Humble leadership will have a positive indirect effect on followers' sustainability-oriented creative problem-solving via followers' paradox mindset.

Humble leadership and perspective-taking

Academic research on motivation and creativity started to explore other-focused psychological and cognitive processes, like perspective-taking, to better understand the underlying mechanisms that bridge these two constructs (Grant & Berry, 2011; J. Wang et al., 2017).

As defined by Grant and Berry (2011), perspective-taking is the “internal psychological process of adopting another’s viewpoint” (Grant & Berry, 2011). Prosocial motivation, for example, was deemed to act as a driver of creativity and innovation, as so perspective-taking, which is the ability one has to take others’ perspective, put themselves into others’ shoes, assimilate their way of seeing things, and to understand not only their motivations but also their fears (Hoever et al., 2012; C.-R. Li, 2016).

Humble leadership has already been linked to followers’ perspective-taking in past research (J. Wang et al., 2017). As we have already highlighted before, when humble leaders place a high value on followers’ contributions and recognize their achievements, they avoid the spotlight, encouraging their followers to prioritize others’ interests and needs, thus engaging in perspective-taking (Naseer et al., 2020).

Building on social cognitive theory (Bandura, 1986), humble leadership can be understood as a social cue that influences followers’ cognitive processes, like perspective-taking, which ultimately would foster followers’ creativity (J. Wang et al., 2017). Therefore, by scoring high in perspective-taking, followers have greater chances of developing novel solutions that are useful to others, since they can adopt others’ viewpoints (Grant & Berry, 2011).

H5 – Humble leadership will have a positive effect on followers’ perspective-taking.

H5a – Humble leadership will have a positive indirect effect on followers’ sustainability-oriented creative problem-solving via followers’ perspective-taking.

Humble leadership and creative process engagement

Literature has already indicated that the employee's engagement in the creative process is an important factor in creativity (Gilson & Shalley, 2004; Henker et al., 2015). Creativity, in its turn, is deemed a relevant antecedent of organizational success (Henker et al., 2015; Oldham & Cummings, 1996), thus being of significant relevance to academic research to understand what promotes employee creativity, including the leadership phenomena (Baas et al., 2008; Henker et al., 2015).

The general idea of how engagement in creative processes can be structured brings three major groups or dimensions. The first, called problem identification, explores, for example, the time the individual dedicates to understanding the nature of the problem presented, as well as how much he/she dedicates to thinking and reflecting on the problem from different points of view and the ability to break this problem down into several parts to gain a deeper understanding.

The second dimension, called information searching and encoding, corresponds to the process of consulting, researching, and retaining the greatest possible variety of information for the problem, seeking different perspectives and sources. Finally, the third dimension is known as idea generation, which concerns the effective consideration of this diverse set of information gathered to generate new ideas (Zhang & Bartol, 2010).

Therefore, creative process engagement entails the initiative to go aboard on a voluntary journey toward searching for connections and possible correspondence within previous solutions developed by different research fields, embarking on a multidisciplinary road that drinks from multiple sources of knowledge to build a brand-new perspective or solution. Their players consciously put themselves into a place that is far from traditional old ways of solving things, which naturally takes them to somewhere else less comfortable and less secure than the opposed alternative (Zhang & Bartol, 2010).

Although we already have some studies dedicated to understanding the interplay between humble leadership and creativity, the body of academic work that exists is very recent, starting in 2017, and gaining momentum in 2020 (Gonçalves & Brandão, 2017; X. Wang et al., 2020; Zhu et al., 2022). Concerning creative process engagement, only a handful of studies, if any, have examined its connection with humble leadership.

One study, for example, has tested the curvilinear relationship between humble leadership and employee engagement in the creative process (Yuan et al.,

2018), while another study has assessed perceived leader humility as a boundary condition for the association between mindfulness and employee creativity via creative process engagement (Cheung et al., 2020), which suggests a promising research gap to be tackled, since the inexistence, as far as I know, of a causal inference research connecting humble leadership to creative process engagement.

Therefore, this research argues that humble leaders would encourage followers to deeply involve themselves in the problem, and into the proposed challenge, despite the ambiguity of the task. But, to be willing to engage in a creative process that seeks to equate conflicting interests, the follower needs to tolerate ambiguities, withstand tensions of divergent interests, to be able to develop creative thinking and think outside the box.

Against this conceptual backdrop and drawing upon the cognitive influential process of social cognitive theory (Bandura, 1986) the present research contends that humble leadership will promote followers' creative process engagement, which will positively impact followers' sustainability-oriented creative problem-solving.

H6 – Humble leadership will have a positive effect on followers' creative process engagement.

H6a – Humble leadership will have a positive indirect effect on followers' sustainability-oriented creative problem-solving via followers' creative process engagement.

3.3 Overview of the studies

Based on the aforementioned theorizing, the present research foresees that leader humility will positively impact followers' sustainability-oriented creative problem-solving (H1), and will negatively impact followers' negative emotions (H2) (reducing them). This study also predicts that humble leaders will increase followers' positive emotions (H3), paradox mindset (H4), perspective-taking (H5), and creative process engagement (H6). Moreover, study 1 goes further and proposes that leader humility is also expected to positively impact followers' sustainability-oriented creative problem-solving through the promotion of less negative emotions (H2a), more positive emotions (H3a), paradox mindset (H4a), perspective-taking (H5a), and creative process engagement (H6a) (figure 13).

The first study followed the methodological steps of a quasi-experiment research design, manipulating leadership using both video clips and vignettes

(humble leadership versus transactional leadership) and was carried out following a laboratory in-person experience condition, where students who accepted to participate in the research were asked to turn off their cell phones, received each one the brochure containing the fictitious business challenge task and questionnaire, and watched the video clip that was played by the researcher using the classroom projector. Here, participants were also exposed to a second wave of stimulus, with vignettes, that followed previous experimental research with humble leadership and transactional leadership scenarios (Rego et al., 2019a) (Appendix A).

The second study aimed to expand the findings of the quasi-experiment through an experimental design that was carried out online utilizing a Qualtrics link that was made available to students who accepted to participate in the research. Each participant was randomly assigned automatically to one of the two experimental conditions. Here, the stimulus appeared just once – using the video clip – no vignettes were used.

All participants in both studies were presented with one of the two video clips containing a presentation from Lucas Santos, the CEO of Liberlux (a fictional solar energy start-up) of approximately 3 minutes each (treatment condition = 3:22 minutes; and control condition = 2:43 minutes) (video clips' scripts – Appendix C).

Experimental studies on humble leadership have used the transactional perspective as a basis for contrast (experimental control) in investigating the causal effects of leader behaviors on followers (Rego et al., 2019b; Y. Zhu et al., 2019). The reason to do so is that, in contrast to humble leadership, transactional leadership can be understood as an exchange process or as a 'neutral' or 'non-leadership' style, in which the behavior of the leader is based on monitoring tasks, granting rewards, and applying punishments based on the results achieved (Bass, 1985a).

Thus, the transactional leader elicits followers' motivation through punishment fear, and reward desire (Kark et al., 2018). The transactional leader is also focused on establishing the 'rules of the game', clearly communicating the norms and the standards to be followed. The leader only interferes reactively with actions that he/she observes to be contrary to the issued commands, in an attempt to correct and avoid followers' deviations. Therefore, transactional leadership is pointed out in the literature as a 'style' of leadership that does not promote or motivate followers to develop anything new, only establishing a dependence of

followers on the leader concerning compliance with pre-established norms and rules – maintenance of the *status quo* (Kark et al., 2018).

Both the experimental and the control conditions were created with two actors playing the role of the CEO and his subordinate, who were trained following the script that was given for each condition (treatment and control) and recruited for the experiment. The actors rehearsed the scene before the video clips were recorded when the CEO performed the two different roles: as a humble leader and as a transactional leader. The scripts for the humble leader and the transactional leader included statements based on the theory (Appendix C).

Manipulation checks were carried out based on the application of the 9-item humble leadership scale developed by Bradley Owens (Owens et al., 2013). Sample items include “This leader actively seeks feedback, even if it is critical”, “This leader acknowledges when others have more knowledge and skills than himself/herself” and “This leader admits when he/she doesn’t know how to do something”.

To measure transactional leadership, a 3-item scale was used following previous studies (Jung & Avolio, 2000). Sample items include “This leader clarifies responsibilities to subordinates, monitoring their performance and taking corrective actions if necessary”, “This leader insists that his subordinates meet certain performance standards despite mistakes and shortcomings”, and “This leader rewards subordinates if their performance is satisfactory”. In the transactional leadership condition, the actor performing the leader: (i) emphasized what needed to be done to accomplish the desired task goals; (ii) assured tangible outcomes would be derived from accomplishing the task goal (either positive or negative – punishment); and (iii) provided the specific goals that needed to be achieved (Jung & Avolio, 2000).

When arriving at the laboratory room (university classroom, for the first study) or when opening the Qualtrics research link (for the second study), the participants were asked to confirm their willingness to participate in a sustainable development challenge task for a company called Liberlux (Appendix B). The task was carefully created to allow the emergence of tensions between different stakeholders’ interests and tensions between purpose and profit organizational goals. The task had no clear right answer. The two studies followed very similar research packages (Appendix B, C, and D), which consisted of (i) introduction and

contextual briefing, (ii) leadership scenarios (video clips), (iii) brochure task, and (iv) dependent variables questionnaire (also containing demographic questions).

While the first study explored the influence of a humble leader (through video clips and vignettes) on individual outcomes through a non-aleatory designation process that occurred in person with undergraduate and graduate students (quasi-experiment), the second study addressed the same influence (but only through video clips' stimuli) using the online aleatory designation of participants to one of the two conditions. All measures were assessed, following best practices in experimental designs (Fig. 9). Afterward, participants were asked to answer a few questions containing the scales of the dependent variables (demographics).

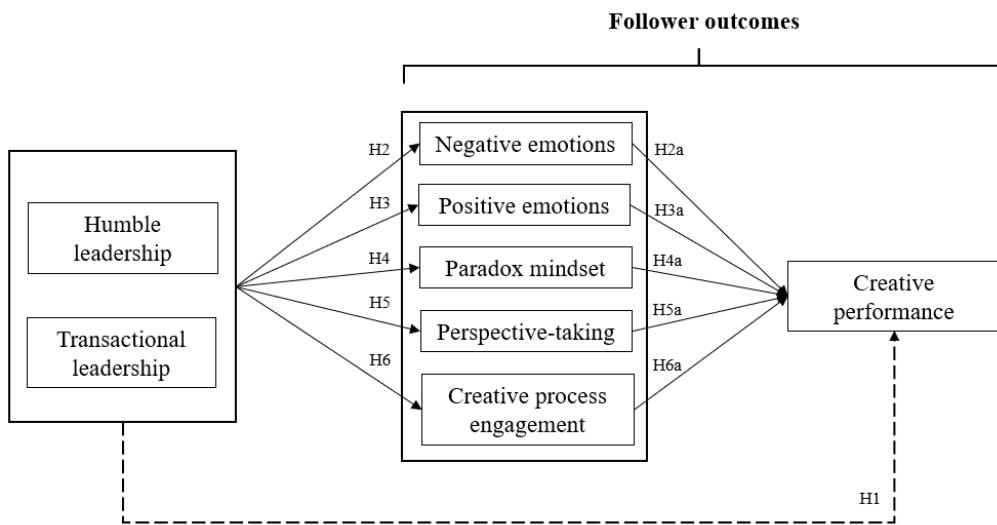
Both experimental packages were formulated in Portuguese, due to all the research participants being Brazilians, and, therefore, followed the back-translation method concerning the scales used, to assure that the overall quality and accuracy of the constructs have been fully met and perfectly understood by participants.

Study 1 – Quasi-experiment

Summary and research model – Study 1

The model exhibited below (Figure 13) summarizes the set of relationships proposed by the first study as a result of the in-depth literature review. It depicts how humble leadership affects followers' sustainability-oriented creative problem-solving via emotions, paradox mindset, perspective-taking, and creative process engagement. In this model, humble leadership is the independent variable, while the followers' emotions, paradox mindset, perspective-taking, creative process engagement, and sustainability-oriented creative problem-solving are the dependent variables.

Figure 13: Proposed research model – Study 1



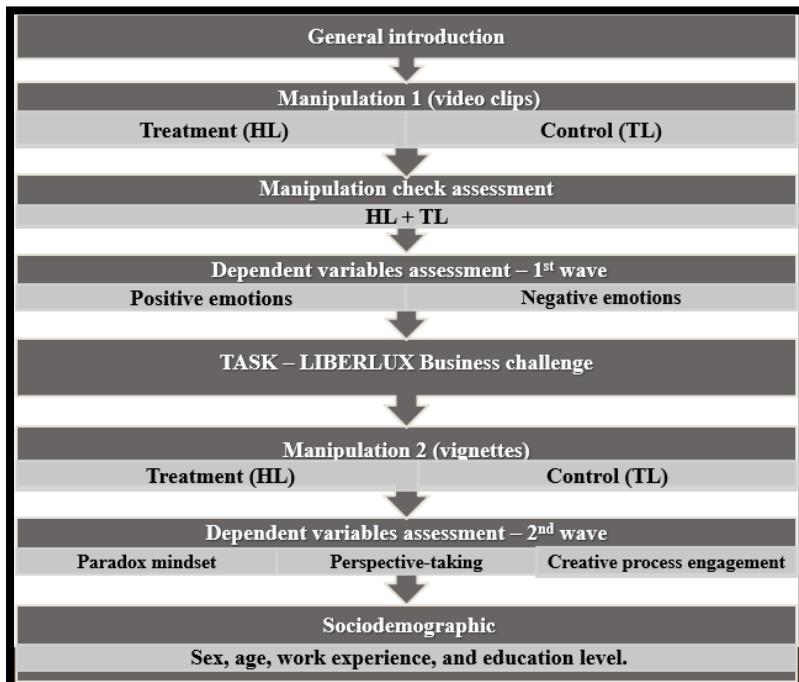
Method – Study 1

Design and procedure

After watching the video and answering the manipulation check and short-PANAS scale, participants experienced a purpose and profit paradox challenge that demanded a creative problem-solving task. Before providing their solutions to the proposed task, participants were asked to read a vignette remembering the CEO leadership style (treatment or control) and were informed that they should think about what solution they would give if they were working for that specific leader.

The vignettes for both humble leader (treatment condition) and transactional leader (control condition) followed previous academic research that carried out experimental studies with the same leadership styles (Rego et al., 2019a) (Appendix A). Individual participation took up to forty minutes in each session, which was found to be a relevant amount of time for them to watch the video clip, read the case and the vignettes, engage in meaningful decision-making processes, and answer the questions (Kenny, 2004). The sequence of measures can be found in Figure 14:

Figure 14: Sequence of Measures – Study 1



Participants

The study was conducted with a sample of undergraduate and graduate students from two different prestigious public universities in Rio de Janeiro (Business and Public Administration programs). Participants (who volunteered to participate in exchange for course credit) were assigned to one of the two experimental conditions (humble leader *vs.* transactional leader).

Based on the number of students attending each class for both graduate and undergraduate programs from the two universities, the researcher randomly designated each class to watch one of the two videos, trying to reach a balanced proportion of undergraduate and graduate classes for each condition at both universities. Differences in these numbers were due to normal classroom absences that the researcher could not control, having it not been known before the data collection date.

The sample included 107 students, of which 47.7% were male, 51.4% were female and .9% preferred to not declare. A total of 77.4% (82 participants) were between the ages of 18–30 years, 14.2% (15 participants) were between 31–40 years, 5.7% (6 participants) were between 41–50 years, and 2.8% (3 participants) were between 51–60 years. One participant did not inform her age (the reason why the total “N” of the sample was reduced to 106 when the hypotheses tests were run,

controlling for age, sex, and education level). A total of 61.7% held an incomplete undergraduate-level qualification and 38.3% held an incomplete graduate degree. In terms of work experience, 30.8% had 0–1 year, 34.6% had 1–5 years, 10.3 % had 5–10 years, and 23.4 % had 10 or more years of experience. The demographic statistics data can also be found below divided by groups (treatment and control conditions) (Table 8):

Table 8: Demographic and descriptive statistics by conditions – Study 1

Variables	Treatment (HL)	Control (TL)	Total
Sex	27 (43.5% female) 34 (54.8% male) 1 (1.6% did not declare)	28 (62.2% female) 17 (37.8% male)	107 (100%)
Age (years)	25.35 (M)	28.77 (M)	106 (100%) <i>(one missing)</i>
Education level	41 (66.1% undergrad. school) 21 (33.9% grad. school)	25 (55.6% undergrad. school) 20 (44.4% grad. school)	107 (100%)
Work experience (years)	16 (25.8% 0-1) 27 (43.5% 1-5) 10 (16.1% 5-10) 9 (14.5% >10)	17 (37.8% 0-1) 10 (22.2% 1-5) 1 (2.2% 5-10) 16 (35.6% >10)	106 (100%) <i>(one missing)</i>
Participants	62	45	107

According to the information above (Table 8), despite participants having not been randomly allocated to each condition, no significant differences were found between the two groups concerning the participants' sex, age, education level, and work experience.

Measures

After presenting their solution to the business challenge, participants answered a group of questions assessing the dependent variables proposed by the conceptual model (Fig. 13). The questionnaire consisted of two main parts. The first part covered questions about the leader (manipulation check) and about how the participant felt while and after watching the video (positive and negative emotions). The second part was about the business challenge (Liberlux case), and the third part contained the scales of paradox mindset, perspective-taking, and creative process engagement, as well as some demographic questions about the participants. The items of all variables were evaluated on a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Nine questions from Owens, Johnson, & Mitchell's (2013) nine-item scale were asked as a manipulation check for the treatment condition. Sample items include: This leader... "admits when he doesn't know how to do something", "shows appreciation for the contributions of others", and "is willing to learn from others". The Cronbach's alpha for this scale was 0.910.

To measure transactional leadership, a 3-item scale was used, based on the MLQ scale (Bass, 1985b). Sample items include: This leader... "clarifies the responsibilities for his subordinates, monitoring their performance and taking corrective actions if necessary", "makes sure that you achieve certain standards of performance despite mistakes and failures", and "rewards his subordinates if their performance is satisfactory". The Cronbach's alpha for this scale was 0.769.

To measure positive and negative emotions, a 10-item scale (Thompson, 2007) was used. Sample items include "In this moment/right now, how much do you feel:" "upset", "hostile", and "alert". The Cronbach's alpha for the negative emotions scale was 0.686 and for the positive emotions scale was 0.809.

To measure the paradox mindset, a 9-item scale (Miron-Spektor et al., 2018) was used. Sample items include "I am comfortable dealing with conflicting demands at the same time", "Tension between ideas energizes me" and "I feel uplifted when I realize that two opposites can be true". The Cronbach's alpha for this scale was 0.773.

To measure perspective-taking, a 9-item scale (Davis, 1980) was used. Sample items include "I believe that there are two sides to every question and try to look at them both", "When I am upset at someone, I usually try to "put myself in his shoes" for a while", and "I try to look at everybody's side of a disagreement before I make a decision". The Cronbach's alpha for this scale was 0.666.

To measure creative process engagement, an 11-item scale (Zhang & Bartol, 2010) was used. Sample items include "I spent considerable time trying to understand the nature of the problem", "I consulted a wide variety of information", and "I generated a significant number of alternatives to the same problem before I chose the final solution". The Cronbach's alpha for this scale was 0.815.

Demographics

The study also collected demographic data from participants, who answered questions on sex (male, female, or preferred not to declare), age (in years), work

experience (in years), and education level (undergraduate or graduate programs). The demographics can be checked by groups in Table 8.

Results – Study 1

Manipulation Check

Participants in the treatment condition (humble leader) rated their leaders to be significantly humbler ($M = 4.1989$; $SD = 0.540$) than those in the control condition ($M = 3.2654$; $SD = 0.750$), $t(104) = 7.450$, $p < 0.001$). Also, participants in the control condition (transactional leader) rated their leaders to be significantly more transactional ($M = 4.0681$; $SD = 0.824$) than those in the treatment condition (humble leader) ($M = 3.1129$; $SD = 0.591$), $t(104) = -6.950$, $p < 0.001$. Thus, these results suggest that the manipulations were successful.

Preliminary Analyses

SPSS version 29 was utilized for statistical analysis. SPSS is beneficial for statistical analysis, especially in social sciences. The means, standard deviations, and correlational coefficients of the variables adopted are shown in Table 9 below.

Table 9: Descriptive statistics, Pearson correlations, and Cronbach's alphas (N= 106) – Study 1

	Condition, M (SD)		Correlations							
	Contr.	Treat.	Ca	1	2	3	4	5	6	7
	(n= 44)	(n= 62)								
1. TL	4.068 (.824)	3.113 (.591)	.76	1						
2. HL	3.265 (.750)	4.198 (.540)	.91	-.040	1					
3. Neg. Em.	1.668 (.672)	1.664 (.716)	.70	-.170	-.365**	1				
4. Pos. Em.	2.672 (1.094)	3.016 (.792)	.81	.299**	.528**	-.297**	1			
5. PM	3.435 (.706)	3.745 (.579)	.80	.048	.261**	-.226*	.235*	1		
6. PT	3.803 (.776)	3.833 (.573)	.70	.145	.148	-.209*	.162	.448**	1	
7. CPE	3.324 (.729)	3.665 (.597)	.81	.073	.197*	-.091	.117	.475**	.320**	1

** $P < .01$ (the correlation is significant at the .01 level)

* $P < .05$ (the correlation is significant at the .05 level)

Table 9 shows descriptive statistics for each construct measured in this first study, including means, standard deviations, Cronbach's alpha, and inter-

correlations among variables. The study had adequate levels of reliability for all scales.

Hypothesis testing – Binary logistic regression (H1)

Logistic regression was used to analyze the relationship between the two groups (treatment and control conditions) and creative problem-solving or creative solutions presented by the participants to the business challenge – the hypothesis one (H1) test of the theoretical model (fig. 13).

At the moment of data analysis, we classified the answers that each participant gave to the business challenge either as creative (1) or not creative (0) (reaching a binary answer). Participants who did not answer were classified as not creative, as well as participants who chose only one straightforward answer, without showing any effort to seek an alternative solution that could equalize and balance the different stakeholders' interests involved in the business challenge.

Participants who chose to seek a brand-new solution (and developed it using the blank space offered) were classified as creative, as well as those who combined two or more solutions to the case, showing a certain amount of effort to seek a more complex solution that required combining alternatives to solve the case. The final answers could be summarized as follows:

Table 10: Creative problem-solving per group (N= 106) – Study 1

	Condition	
	Contr. (TL) (n= 44)	Treat. (HL) (n= 62)
1. Creative (1)	18 (40.9%)	50 (80.64%)
2. Not creative (0)	26 (59.09%)	12 (19.35%)

In order to test the odds of participants under each condition giving a creative or a not creative solution to the task challenge, the researcher ran the model using groups as the independent variable (categorical= treatment group (1) and control group (0)) and the binary answer to creativity as the dependent variable (categorical= creative (1) and not creative (0)). The significance of the full model was evaluated using the Omnibus Test ($\chi^2= 17.881$, $p= < 0.001$), which showed that the full model is significantly different from a constant-only or null model

(even odds), concluding that the model is a significant predictor of the dependent variable.

The strength of the association between the model (groups as independent variables) and the dependent variable (creative solution) can be evaluated using Nagelkerke's test ($R^2= 0.213$). Therefore 21.3% of the variation in the dependent variable is attributed to the model. The results confirmed the hypothesis that participants who were allocated to the treatment condition (humble leader) would provide more creative solutions to the business challenge (H1) than participants who were allocated to the control condition (transactional leader).

Hypotheses testing – H2, H3, H4, H5, H6

A series of t-tests were conducted with the group (experimental/humble leadership and control/transactional leadership) as the independent variable and hypothesized dependent variables: followers' negative and positive emotions, paradox mindset, perspective-taking, and creative process engagement were the dependent variables.

Negative emotions. The independent sample t-test for the effects of humble leadership on followers' negative emotions yielded a non-significant result: $t(106) = -0.027$, $p= 0.979$. Not confirming the hypothesis, the participants had similar (low) negative emotions under the transactional leader ($M= 1.668$, $SD= 0.6723$) as under the humble leader ($M= 1.664$, $SD= 0.7167$), and that difference was not significant.

Positive emotions. The independent sample t-test for the effects of humble leadership on positive emotions yielded a marginally significant result: $t(106) = 1.875$, $p= 0.064$. In line with the hypothesis, the participants of the treatment condition had more positive emotions ($M= 3.016$, $SD= 0.792$) than participants of the control condition ($M= 2.672$, $SD= 1.094$), and that difference was marginally significant.

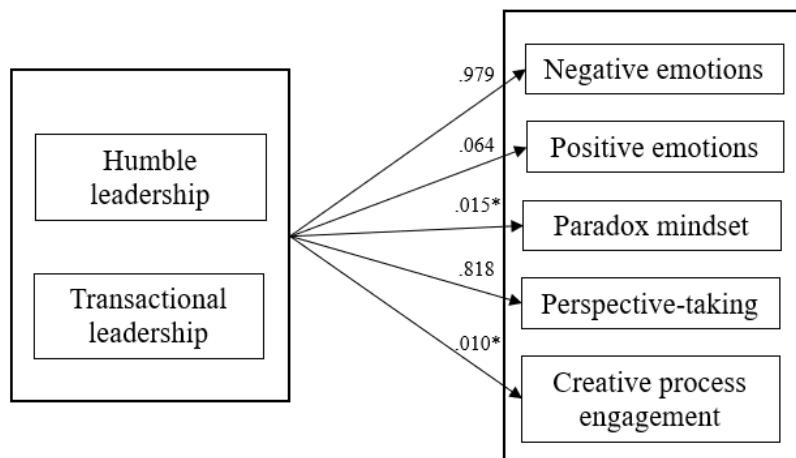
Paradox mindset. The independent sample t-test for the effects of humble leadership on followers' paradox mindset yielded a significant result: $t(106) = 2.478$, $p= 0.015$. In line with the hypothesis, the participants that were under the treatment condition (humble leader) scored higher on paradox mindset ($M= 3.745$, $SD= 0.579$) than participants that were under the control condition ($M= 3.435$, $SD= 0.706$), and that difference was significant.

Perspective-taking. The three inverted items were excluded from the final scale to guarantee better internal consistency. The independent sample t-test for the effects of humble leadership on followers' perspective-taking did not yield a significant result: $t(106)= 0.231$, $p= 0.818$. The hypothesis that the participants under the humble leader ($M= 3.833$, $SD= 0.573$) would display higher levels of perspective-taking than participants under the control condition ($M= 3.803$, $SD= 0.776$) was not confirmed.

Creative process engagement. The independent sample t-test for the effects of humble leadership on creative process engagement yielded a significant result: $t(106) = 2.642$, $p= 0.010$. In line with the hypothesis, the participants had more creative process engagement under the humble leader ($M= 3.665$, $SD= 0.597$) than under the control condition ($M= 3.324$, $SD= 0.729$), and that difference was significant.

Generally, the findings supported most of the proposed hypotheses, as shown below (Figure 15).

Figure 15: Result of SPSS direct path analysis ($N=106$) – Study 1



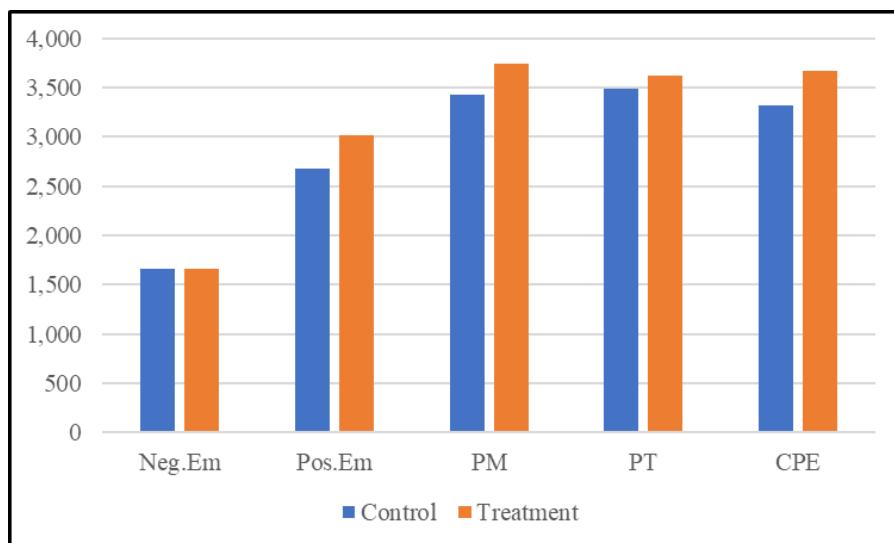
The variables' means for each condition, together with the correspondent effect result and the difference between control and treatment means can be summarized as follows (Table 11):

Table 11: Means differences between groups (N= 106) – Study 1

	Control - TL (M)	Treatment - HL (M)	Result (sig, marg. sig, or non-sig)	Difference (HL/TL)
Neg. Em	1.666	1.664	non-sig	-0.2000
Pos. Em	2.684	3.016	marg. sig	0.3320
PM	3.427	3.745	sig	0.3180
PT	3.496	3.629	non-sig	0.1330
CPE	3.321	3.666	sig	0.3450

Figure 16 below shows the means observed for all five variables (negative emotions, positive emotions, paradox mindset, perspective-taking, and creative process engagement) for the two groups (control and treatment).

Figure 16: Means per group – Study 1



Note: Means did differ significantly for paradox mindset at $p < .05$ and for creative process engagement at $p < .01$. It was marginally significant for positive emotions at $p < .05$.

The differences between the two groups were significant in two cases – paradox mindset (PM) and creative process engagement (CPE). It was marginally significant in one case – positive emotions, and non-significant in the other two cases – negative emotions and perspective-taking (PT) (Figure 16).

Full mediation model – H2a, H3a, H4a, H5a, and H6a hypotheses tests

Lastly, the present research tested the mediation path for hypotheses 2a, 3a, 4a, 5a, and 6a. A series of path analyses using Stata software and SPSS Process Macro (bootstrapping technique) were performed to examine whether there were any mediating effects between the groups (manipulations) and creative problem-

solving via followers' emotions, paradox mindset, perspective-taking, and creative process engagement. The mediating effects were tested through models 1 to 3 below (Table 11).

The path analytic procedures to test hypothesis 2a (H2a) consisted of two steps. In the first path, the mediator variable (negative emotions) is regressed on the independent variable (groups), which resulted in coefficient= 0.023 and p= 0.869, showing a non-significant effect. The second path predicted the dependent variable (creative problem-solving) from the mediator (negative emotions) and the results yielded a coefficient= 0.041 and a p= 0.901 (also a non-significant effect).

The path analytic procedures to test hypothesis 3a (H3a) consisted of two steps. In the first path, the mediator variable (positive emotions) is regressed on the independent variable (groups), which resulted in coefficient= 0.349 and p= 0.075, showing a marginally significant effect. The second path predicted the dependent variable (creative problem-solving) from the mediator (positive emotions) and the results yielded a coefficient= -0.161 and a p= 0.274 (a non-significant effect).

The path analytic procedures to test hypothesis 4a (H4a) consisted of two steps. In the first path, the mediator variable (paradox mindset) is regressed on the independent variable (groups), which results in coefficient= 0.316 and p= 0.018, showing a significant effect. The second path predicts the dependent variable (creative problem-solving) from the mediator (paradox mindset) and the results yielded a coefficient= 0.617 and a p= 0.007 (a significant effect).

The path analytic procedures to test hypothesis 5a (H5a) consisted of two steps. In the first path, the mediator variable (perspective-taking) is regressed on the independent variable (groups), which resulted in coefficient= 0.0788 and p= 0.565, showing a non-significant effect. The second path predicted the dependent variable (creative problem-solving) from the mediator (perspective-taking) and the results yielded a coefficient= 1.345 and a p= 0.002 (a significant effect).

The path analytic procedures to test hypothesis 6a (H6a) consisted of two steps. In the first path, the mediator variable (creative process engagement) is regressed on the independent variable (groups), which results in coefficient= 0.354 and p= 0.010, showing a significant effect. The second path predicts the dependent variable (creative problem-solving) from the mediator (paradox mindset) and the results yielded a coefficient= 0.318 and a p= 0.137 (a non-significant effect).

Table 12: Full mediation model – Path analyses – Study 1

	Average mediation effect	First path (coeff., p)	Second path (coeff., p)	95% CI
1. Groups → Negative emotions → Creative problem-solving (H2a)	.0010	.023 p=0.869	.041 p=0.901	(95% CI = -.0935, .1433)
2. Groups → Positive emotions → Creative problem-solving (H3a)	-.016	.349 p=0.075	-.161 p= 0.274	(95% CI = -.061, .016)
3. Groups → Paradox mindset → Creative problem-solving* (H4a)	.058	.316 p= 0.018	.617 p= 0.007	(95% CI = .0061, .1314)
4. Groups → Perspective-taking → Creative problem-solving (H5a)	.1060	.0788 p=0.565	1.345 p= 0.002	(95% CI = -.3071, .6722)
5. Groups → Creative process engagement → Creative problem-solving (H6a)	.034	.354 p= 0.010	.318 p= 0.137	(95% CI = -.0107, .1018)

** $P < .01$ (the difference between groups is significant at the .01 level)

* $P < .05$ (the difference between groups is significant at the .05 level)

Therefore, the results showed that leader humility has promoted sustainability-oriented creative problem-solving in followers through paradox mindset (H4a), but not through negative emotions (H2a), positive emotions (H3a), perspective-taking (H5a) or creative process engagement (H6a). Thus, to make followers navigate the purpose and profit paradox creatively, the humble leader fosters followers' paradox mindset, equipping them with the necessary emotional state to creatively thrive amidst paradoxical challenges in organizations that involve multiple stakeholders' interests.

Discussion – Study 1

This study reports the results of a quasi-experiment research that investigated the effect of humble leadership on individuals' positive and negative emotions, paradox mindset, perspective-taking, creative process engagement, and creative problem-solving, after participating in a purpose-and-profit business challenge. In a two-group design, both conditions (control – transactional leadership, and treatment – humble leadership) were manipulated through video clips and vignettes. Consistent with the expectations of Hypothesis 1, results showed that participants who were under the treatment condition were able to give a more sustainability-oriented creative solution to the business challenge than participants under the control condition (H1).

Followers of humble leader (treatment condition) did not experience significantly lower levels of negative emotions when compared to the control condition (H2), but the study found a marginally significant difference between the two groups regarding positive emotions (H3), having the participants under the treatment condition reported higher levels of positive emotions than participants under the control condition. Results also confirmed that humble leaders were responsible for higher levels of paradox mindset if compared to the control condition and that the difference was significant (H4).

Humble leadership did not have a significant effect on followers' perspective-taking (H5) but yielded a significant effect on followers' creative process engagement (H6). Also, results indicate that creative problem-solving was not achieved via negative emotions (H2a), positive emotions (H3a), perspective-taking (H5a), or via creative process engagement (H6a), but via followers' paradox mindset (H4a), which yielded a significant effect in both paths.

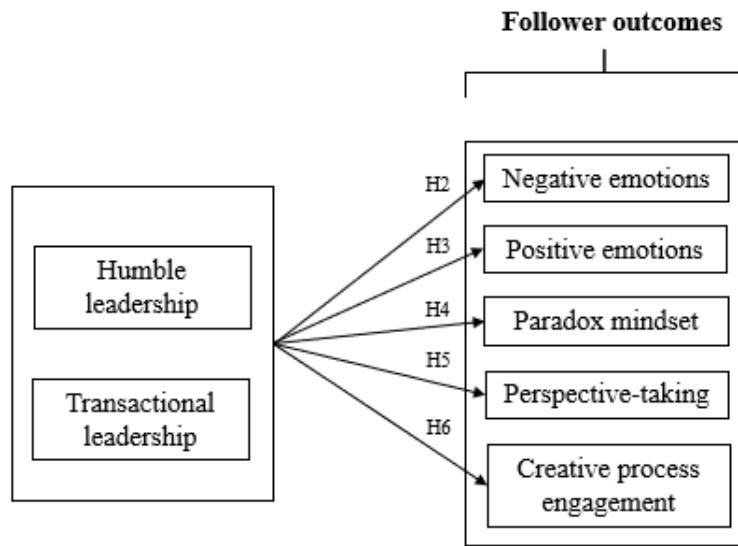
This suggests that humble leaders engage the paradox mindset mechanism in followers, which explains the leadership effect on followers' creative problem-solving. Regarding the full mediation model tested, due to the different types of assessments for mediating variables (interval-scaled self-rated variables) and dependent variable (solution given to the business challenge), it seems reasonable to affirm that common method variance did not play a relevant role in the present findings in the context of the mediation model.

Study 2 – Experiment

Summary and research model – Study 2

The model exhibited below (Figure 17) summarizes the set of relationships proposed by the present research as a result of the in-depth literature review. It depicts how humble leadership affects the followers' emotions, paradox mindset, perspective-taking, and creative process engagement. In this model, humble leadership is the independent variable, while the followers' emotions, paradox mindset, perspective-taking, and creative process engagement are the dependent variables.

Figure 17: Proposed research model – Study 2

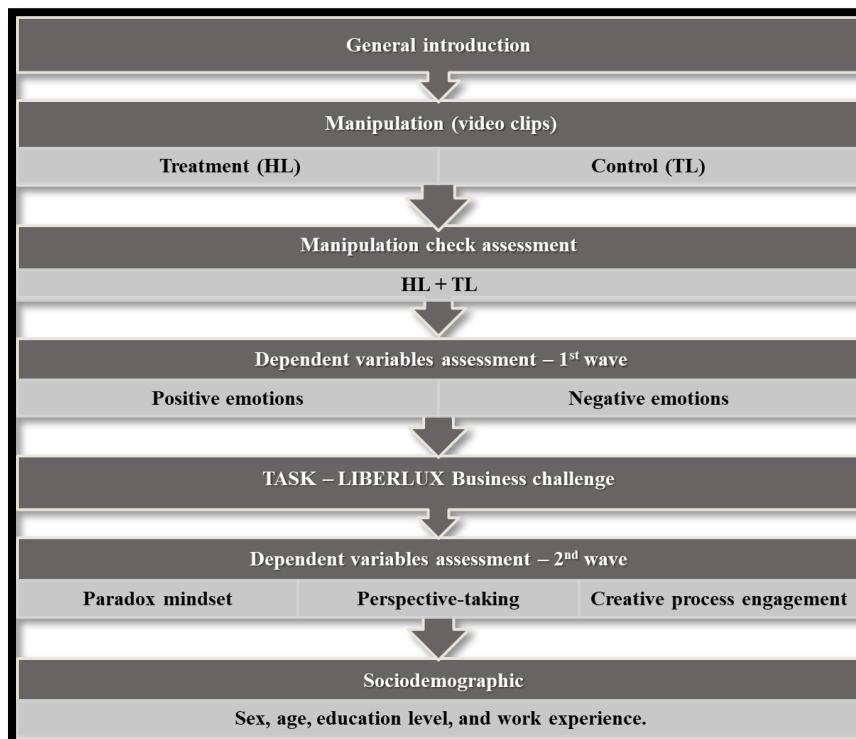


Method – Study 2

Design and procedure

After watching the video and answering the manipulation check and short-PANAS scale, participants moved forward to the screen where a purpose and profit paradox challenge that demanded a creative problem-solving task was proposed. The sequence of measures can be found in Figure 18:

Figure 18: Sequence of Measures – Study 2



Participants

The study was conducted with a sample of undergraduate and graduate students from two different prestigious public and private universities in Rio de Janeiro, who volunteered to participate in exchange for course credit. They were randomly assigned by the Qualtrics software to one of the two experimental conditions (humble leader *vs.* transactional leader).

The sample comprised 74 students, of which 41 were females, 32 males, and 1 did not inform. A total of 89.0% (65 participants) were between the ages of 18–30 years, 5.5% (4 participants) were between 31–40 years, 5.5% (4) were between 41–50 years, and 0% (0 participants) were between 51–60 years. A total of 86.3% held an incomplete undergraduate degree and 13.7% held an incomplete graduate degree. In terms of experience, 74.0% had 0–1 years, 15.1% had 1–5 years, and 11.0% had 10 or more years of experience. The demographic statistic data was also divided by groups (treatment and control conditions), which can be found below (Table 13):

Table 13: Demographic and descriptive statistics by conditions – Study 2

Variables	Treatment (HL)	Control (TL)	Total
Sex	23 (56.1% female) 17 (41.5% male)	18 (54.5% female) 15 (45.5% male)	73 (100%) (one missing)
Age (years)	21.20 (M)	23.64 (M)	73 (100%) (one missing)
Education level	34 (82.9% undergrad. school) 6 (14.6% grad. school)	29 (87.9% undergrad. school) 4 (12.1% grad. school)	74 (100%) (one missing)
Work experience (years)	32 (80% 0-1) 4 (10% 1-5) 3 (7.5% 5-10) 1 (2.5% >10)	22 (66.7% 0-1) 7 (21.2% 1-5) 0 (0% 5-10) 4 (12.1% >10)	73 (100%) (one missing)
Participants	41	33	74

As observed above (Table 12), and meeting the research expectations, there were no significant differences between the two groups concerning the participants' sex, age, education level, and work experience, since participants were randomly assigned by the Qualtrics software to one of the two conditions.

Measures

The brochure questionnaire consisted of two main parts. The first part covered questions about the leader (manipulation check) and about how the participant felt while watching the video (positive and negative emotions). The second part consisted of the business challenge (Liberlux case), and the third contained the scales of paradox mindset, perspective-taking, and creative process engagement, as well as some demographic questions about the participants. All variables were evaluated on a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Owens, Johnson, & Mitchell's (2013) nine-item scale was used to test the manipulation for the treatment condition. Sample items include: This leader... “admits when he doesn't know how to do something”, “shows appreciation for the contributions of others”, and “is willing to learn from others”. The Cronbach's alpha for this scale was 0.90.

To measure transactional leadership, a 3-item scale was used, based on the MLQ scale (Bass, 1985b). Sample items include: This leader... “clarifies the responsibilities for his subordinates, monitoring their performance and taking corrective actions if necessary”, “makes sure that you achieve certain standards of performance despite mistakes and failures”, and “rewards his subordinates if their performance is satisfactory”. The Cronbach's alpha for this scale was 0.63.

To measure positive and negative emotions, a 10-item scale (Thompson, 2007) was used. Sample items of the final scale include “In this moment/right now, how much do you feel: “upset”, “nervous”, and “ashamed”; “inspired”, “determined”, and “active”. The Cronbach's alpha for the negative emotions scale was .79 and for the positive emotions scale was 0.70.

To measure the paradox mindset, a 9-item scale (Miron-Spektor et al., 2018) was used. Sample items of the final scale include “I am comfortable dealing with conflicting demands at the same time”, “Tension between ideas energize me” and “I feel uplifted when I realize that two opposites can be true”. The Cronbach's alpha for this scale was 0.67.

To measure perspective-taking, a 9-item scale (Davis, 1980) was used. Sample items include “I believe that there are two sides to every question and try to look at them both”, “When I am upset at someone, I usually try to “put myself in his shoes” for a while”, and “I try to look at everybody's side of a disagreement before I make a decision”. The Cronbach's alpha for this scale was 0.69.

To measure creative process engagement, an 11-item scale (Zhang & Bartol, 2010) was used. Sample items include “I spent considerable time trying to understand the nature of the problem”, “I consulted a wide variety of information”, and “I generated a significant number of alternatives to the same problem before I chose the final solution”. The Cronbach’s alpha for this scale was 0.79.

Demographics

The study also collected demographic data from participants (but did not use it as a control variable, as we did in Study 1), who answered questions on sex (male, female, or preferred not to declare), age (in years), work experience (in years), and education level (undergraduate or graduate programs). The demographics can be checked by groups in Table 12 above.

Results – Study 2

Manipulation Check

Participants in the treatment condition (humble leader) rated their leaders to be significantly humbler ($M = 4.387$; $SD = 0.5644$) than those in the control condition ($M = 3.710$; $SD = 0.6229$), $t(74) = 4.898$, $p < 0.001$. Also, participants in the control condition (transactional leader) rated their leaders to be significantly more transactional ($M = 4.202$; $SD = 0.6505$) than those in the treatment condition (humble leader) ($M = 3.617$; $SD = 0.7093$), $t(74) = -3.653$, $p < 0.001$. Thus, these results suggest that the research manipulations were successful.

Preliminary Analyses

The SPSS version 29 was utilized for statistical analysis. SPSS is beneficial for statistical analysis, especially in social sciences. The means, standard deviations, and correlational coefficients of the variables adopted are shown in Table 14 below.

Table 14: Descriptive statistics, Pearson correlations, and Cronbach's alphas (N= 74) – Study 2

	Condition, <i>M</i> (<i>SD</i>)		Correlations							
	Contr. (n= 33)	Treat. (n= 41)	Ca	1	2	3	4	5	6	7
1. TL	4.202 (.650)	3.617 (.709)	.63	1						
2. HL	3.710 (.622)	4.387 (.564)	.90	.103	1					
3. Neg. Em.	2.218 (.689)	1.814 (.593)	.79	.041	-.675**	1				
4. Pos. Em.	3.737 (.758)	4.065 (.764)	.70	.280*	.702**	-.561**	1			
5. PM	3.535 (.567)	3.711 (.542)	.67	-.049	.061	.100	-.139	1		
6. PT	3.747 (.630)	3.987 (.413)	.69	-.115	.286*	-.024	.281*	.090	1	
7. CPE	3.438 (.575)	3.441 (.552)	.79	.052	.140	-.020	.173	.137	.346**	1

***P* < .01 (the correlation is significant at the .01 level)

* *P* < .05 (the correlation is significant at the .05 level)

Table 14 shows descriptive statistics for each construct measured in this second study, including means, standard deviations, Cronbach's alpha, and inter-correlations among variables. The study had adequate levels of reliability for all scales.

Hypotheses testing

A series of t-tests were conducted with the group (experimental/humble leadership and control/transactional leadership) as the independent variable and hypothesized dependent variables: followers' negative and positive emotions, paradox mindset, perspective-taking, and creative process engagement were the dependent variables. Detailed results can be found as described below, as well as the corresponding p-values as summarized in Figure 19.

Negative emotions. Two items were excluded from the final positive emotions scale to guarantee better internal consistency: "1. Alert, and 4. Attentive". The independent sample t-test for the effects of humble leadership on followers' negative emotions yielded a significant result: $t(74) = -2.703$, $p= 0.009$. In line with the hypothesis, the participants felt less negative emotions when exposed to a humble leader ($M= 1.814$, $SD= 0.593$), than to the transactional leader ($M= 2.218$, $SD= 0.689$), and that difference was significant.

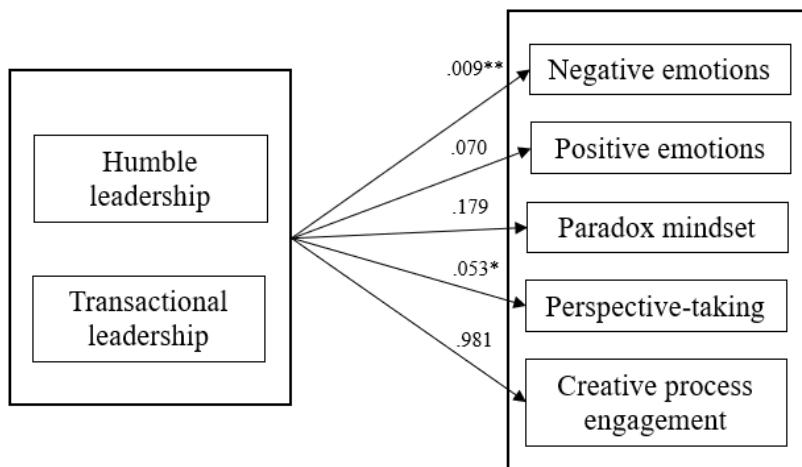
Positive emotions. The independent sample t-test on positive emotions yielded a marginally significant effect of the humble leadership: $t(74) = 1.839$, $p = 0.070$. In line with the hypothesis, the participants had more positive emotions after being exposed to the humble leader ($M = 4.065$, $SD = 0.764$) than in the control condition ($M = 3.737$, $SD = 0.758$), and that difference was marginally significant.

Paradox mindset. Three items were excluded from the final scale to guarantee better internal consistency: 1. “When I consider conflicting perspectives, I gain a better understanding of an issue”, 3. “Accepting contradictions is essential for my success”, and 6. “I often experience myself as simultaneously embracing conflicting demands”. The independent sample t-test for followers’ paradox mindset yielded a non-significant effect of the humble leadership: $t(74) = 1.359$, $p = 0.179$. Although participants under the treatment condition (humble leader) reported higher levels of paradox mindset ($M = 3.711$, $SD = 0.542$) than participants that were under the control condition ($M = 3.535$, $SD = 0.567$), that difference was non-significant, thus not confirming the hypothesis.

Perspective-taking. The three inverted items were excluded from the final scale to guarantee better internal consistency. The independent sample t-test for followers’ perspective-taking yielded a significant effect of the humble leadership: $t(74) = 1.970$, $p = 0.053$. The hypothesis that the participants exposed to a humble leader ($M = 3.987$, $SD = 0.413$) would display higher levels of perspective-taking than participants under the control condition ($M = 3.747$, $SD = 0.630$) was confirmed.

Creative process engagement. An independent sample t-test for differences in creative process engagement yielded a non-significant effect of the humble leadership: $t(74) = 0.024$, $p = 0.981$. The participants had slightly more creative process engagement under the humble leader ($M = 3.441$, $SD = 0.552$) than under the control condition ($M = 3.438$, $SD = 0.575$) but that difference was not significant.

Figure 19: Result of SPSS direct path analysis ($N = 74$) – Study 2



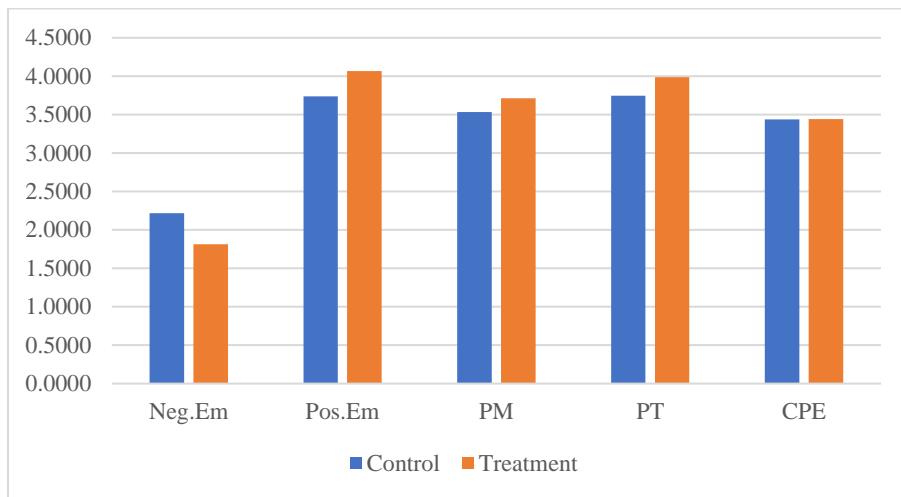
The variables' means for each condition, together with the correspondent effect result and the difference between control and treatment means can be summarized as follows (Table 15):

Table 15: Means differences between groups ($N= 74$) – Study 2

	Control - TL (<i>M</i>)	Treatment - HL (<i>M</i>)	Result (<i>sig</i> , <i>marg. sig</i> , or <i>non-sig</i>)	Difference (<i>HL/TL</i>)
Neg. Em	2.2181	1.8146	sig	-0.4035
Pos. Em	3.7374	4.0650	marg. sig	0.3276
PM	3.5353	3.7113	non-sig	0.1760
PT	3.7474	3.9878	sig	0.2404
CPE	3.4380	3.4412	non-sig	0.0032

Figure 20 below shows the means observed for all five variables (negative and positive emotions, paradox mindset, perspective-taking, and creative process engagement for the two groups (control and treatment).

Figure 20: Means per group – Study 2



Note: Means did differ significantly for negative emotions at $p < .01$, for perspective-taking at $p < .05$, but it was only marginally significant for positive emotions at $p < .05$

The differences between the two groups were significant for negative emotions and for perspective taking (PT). It was marginally significant for positive emotions, but non-significant for paradox mindset (PM) and creative process engagement (CPE) (Figure 20).

Discussion – Study 2

This study reports the results of a randomized online experiment research that investigated the effect of humble leadership on individuals' positive and negative emotions, paradox mindset, perspective-taking, and creative process engagement, after participating in a purpose-and-profit business challenge. In a two-group design, the research manipulated both conditions (control– transactional leadership, and treatment– humble leadership) through video clips.

Differently from Study 1, concerning individual participation, the researcher here had no control over the moment or the environment where the participant took the experiment, nor how much time they dedicated to each section of the experiment. It was not, thus, possible to guarantee that a relevant amount of time, for example, has been dedicated to reading the case, engaging in a meaningful decision-making process, and answering the questions, as previous literature recommends (Kenny, 2004) and as was observed by Study 1.

Consistent with the expectations of Hypothesis 2, results revealed that participants who were under the treatment condition reported less negative

emotions than participants from the control condition, and that difference was significant – thus confirming H2. Another finding was that participants who were exposed to the treatment condition did experience higher levels of positive emotions when compared to the control condition (H3), but that difference was marginally significant.

Also, there were no significant differences between the two groups regarding paradox mindset, despite participants exposed to the treatment condition having displayed slightly higher levels of paradox mindset if compared to the control condition – thus, not confirming H4. Results also evidenced a marginally significant difference between the two groups regarding followers' perspective-taking (H5).

Although followers of the humble leader reported slightly higher levels of creative process engagement when compared to the control condition, that difference was not significant, not confirming the sixth hypothesis (H6). This suggests that humble leaders can trigger positive emotions and perspective-taking on followers, but not paradox mindset and creative process engagement, considering the circumstances and limitations of an experimental design study carried out online and without the proper control of the ambient, typical of a laboratory setting (as we did in Study 1).

Because in study 2 there was no relevant amount of creative answers to the business challenge (less than 20% in all conditions), and there were some participants who did not solve the case, the study did not have enough responses to run the binary logistic regression, as was done in Study 1. Therefore, the researcher chose to not include the first hypothesis in the research model of Study 2.

3.4 General discussion

This paper aimed to provide insights into the different mechanisms through which humble leadership affects followers' creative outcomes amidst the dual-goal challenge of pursuing purpose and profit. The two experimental studies explored five different variables that should account for sustainability-oriented creativity through humble leadership influence at the individual level, which were: followers' positive and negative emotions, paradox mindset, perspective-taking, and creative process engagement.

The path analysis results revealed several interesting patterns, either individually (for each study taken separately) or in combination (the two studies

taken together). The research findings of Study 1 pointed to the importance of humble leadership as a predictor of followers' creative problem-solving and showed that this influence is channeled through the promotion of followers' paradox mindset. Despite humble leadership also predicting followers' positive emotions and creative process engagement, statistical tests brought empirical support to the paradox mindset being the most important component for the equation of followers' sustainability-oriented creativity.

Regarding Study 2, which was composed of a younger sample, with less work experience, who participated online through an online link that was made available by the university professors, results were only similar to Study 1 concerning followers' positive emotions. As hypothesized, humble leadership had a direct effect on followers' positive emotions (although the effect was marginally significant, it is reasonable to predict that the result would be significant if the sample was larger).

Also, humble leaders yielded lower levels of negative emotions in followers if compared to the control group, confirming the hypothesis. Here was noticed that within the second study, the influence of humble leadership on followers' emotions was quite clear regarding both positive and negative emotions, which did not happen in the first study, where the control group did not show significantly higher levels of negative emotions on participants, as they have in the second study.

The difference in paradox mindset between the two groups (control and treatment) was not significant in Study 2, as well as the difference in creative process engagement. Here, two possible reasons can be explored: the lessened effect of leadership in an online scenario experiment (as the one we conducted in Study 2), combined with the sample size, which was smaller than in Study 1, as well. On the other hand, for the Study 2 sample, the difference between the two groups was significant for perspective-taking, which was not confirmed in Study 1. One possible explanation could be that in-person participation for the older sample increased the positive emotional path that explained the humble leadership influence – either through positive emotions or through a paradox mindset, but not the cognitive path of perspective-taking.

Accounting for the results of the two studies, this research provided strong evidence of the causal relationship between humble leadership and several

followers' outcomes – emotions, paradox mindset, perspective-taking, creative process engagement, and sustainability-oriented creative problem-solving.

Thus, when the results of both studies (quasi-experiment and experiment) are analyzed by their average and by group (control and treatment conditions), it is possible to conclude that the differences obtained in the results of both studies are presented through the smallest or largest difference between the means obtained in each group for each of the evaluated variables. Also, for the difference to become significant, it must be higher from one condition to another (transactional leader *vs.* humble leader), which was proved in both studies.

Given that the sample of the second study was smaller (74 *vs.* 106) and that the conditions of the experimental study may have somewhat disfavored the effect of leadership on some of the observed variables (as was the case for the paradox mindset and creative process engagement), one can speculate that if the experimental study (with randomization) is replicated in laboratory conditions, with greater control over the environment in which the experiment is carried out, guaranteeing the attention and immersion of the participant in the experimental conditions, the results would probably be the same of the quasi-experiment. These findings have several important implications – both practical and theoretical – as explained below.

3.5 Implications for research and practice

The major theoretical contribution of the current research was three-fold. First, taking stock of previous academic work, the study tried to answer the recent call for more research efforts to help advance knowledge on the causal relationship between the leader's humble behaviors and individual creativity (Mallén et al., 2020; Wang et al., 2020).

Second, this research adopted the paradox perspective to explore the cutting-edge challenge of reframing organizational success and understand the role of leadership in influencing individuals' capability of solving the paradox of purpose and profit dual goal (De Cremer & Moore, 2020; Fischer et al., 2017; Villela et al., 2019; Winkler et al., 2019).

Third, regarding the field of sustainable development, the research tried to answer recent scholars' call for new studies to address the gap in exploring the relationship between creativity and sustainable development, and to understand

how creative approaches can facilitate sustainable development through different perspectives (Buhl et al., 2019; Shrivastava, 2014; Schulz et al., 2021).

By doing so, the present research helped advance theoretical knowledge on the frontier between leadership and sustainable development, focusing on the connections between virtues in leaders and managing the purpose and profit paradox, and more specifically on the connections between leader humility and creative problem-solving when purpose and profit clash.

Ultimately, combining complementary experimental design methodologies, the current research tried to enlarge the reliability of the results, helping establish a trustworthy conclusion that advances knowledge of the concepts of humble leadership, sustainability-oriented creativity, and paradox mindset, reorienting the field to generate meaningful policy recommendations, and also serving as a guide for future research avenues.

Therefore, the findings have several implications for practice that validate the importance of using business as a force for good. Thus, beyond doing the right thing and leaving a positive footprint in the world, companies pursuing sustainable innovation along with profit and purpose objectives tend to experience additional advantages – in their marketing activities, financial activities, meeting new expectations of investors, reputation, improving organizational resilience, human resources management (HRM) activities, business strategies, talent attraction, and retention, among several others (Bocken et al., 2014; Buliga et al., 2016; Greening & Turban, 2000; Schaltegger et al., 2012).

The development of an in-depth understanding of the positive implications for organizations pursuing purpose and profit can further support the development of trustworthy organizational policies and HRM guidelines that will improve the chances of the organization succeeding in the migration to a new sustainable business model, as it engages the workforce toward the common good. Also, according to Hester Le Roux and Maggie De Pree “sustainable business models could open economic opportunities worth \$12 trillion and increase employment by up to 380 million jobs by 2030” (Le Roux & De Pree, 2018). Thus proving to be an opportunity, not only a compliance matter to organizations today.

3.6 Limitations and future research

The present study has the following limitations. First, regarding the samples. Studies 1 and 2 were based, respectively on 106 and 74 graduate and undergraduate students from three different universities in Rio de Janeiro. Although the demographic information showed that participants' profiles are very close to organizational professionals, future research could replicate the model in real-life organizations, carrying out field experiments, for instance. Also, future research efforts could test the current findings in different types of organizations and industries.

A second limitation concerns the variables used and the relationships tested. Future research should, for example, explore the same relationships between humble leadership and creative problem-solving using other types of assessment and scales for creativity. Future research could also examine the possibility that paradox mindset, perspective-taking, and emotions are mediators in the link between humble leadership and creative process engagement, consequently, leading to creative problem-solving.

A third limitation concerns the method choice of experimental design, which limits, for example, testing theoretical models that include contextual elements like learning organizations, psychological safety environment, and other external variables that could explain the relationship tested. Here, the variable regarding gender is also a relevant factor that should be taken into consideration, both concerning the leader and the follower and also the boundary condition relating to the leader's tenure and the amount of influence the leader holds inside the organization.

A fourth limitation is the duration of the leadership effects observed. The current findings would also benefit from a longitudinal study, where researchers would observe and collect data from repeated observations of the same variables over longer periods, checking if the emotional, attitudinal, and behavioral changes promoted on followers are temporary or permanent.

Another important limitation was the impossibility of running the binary logistic regression and the full mediation model in the experimental design research (Study 2), due to the low number of complete responses to the proposed business challenge. Future studies should consider running a laboratory experiment in person

to confirm the findings of both studies and clear out the differences that the current research has found.

Subsequent studies should also seek to establish the boundaries of the current findings, exploring possible moderating effects of the relationships between humble leadership and sustainability-oriented creativity, paradox mindset, creative process engagement, and perspective-taking.

Additionally, future research efforts should explore the next step of sustainability-oriented creativity and assess the outcomes of social innovation and sustainable business model innovation inside organizations. So, humble leaders that foster a paradox mindset and creativity toward the common good, could also be responsible for higher levels of social innovation and business model innovation toward sustainability.

Ethics Statement

This study was carried out following the recommendations of the Ethical Principles of The Ethical Committee of Pontifical Catholic University of Rio de Janeiro (*Comitê de Ética da PUC-Rio*). The ethics committee approved the material that participants received while taking part in the research.

Funding

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Disclosure

The author reports no conflicts of interest for this work and declares that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

4. Conclusion

The present collection of studies took the paradox perspective to intertwine the constructs of leader humility and sustainability-oriented creativity in a theoretical and empirical novel way to address some of the cutting-edge challenges experienced by organizations in today's complex world – chasing the purpose-and-profit dual goal.

To do so, the researcher first embarked on the journey of capturing the state of the art on leader humility and creativity & innovation in the field of business, to fully grasp the intellectual structure of knowledge and precisely identify the theoretical and methodological gaps in past academic research. Thus, by building an integrative review of previous studies, the author was able to develop a conceptual framework that summarizes the set of relationships explored so far within the intersection of both topics.

As a result, the findings of the first study paved the way for the second study, which addressed the research gaps of the scarcity of works that investigate: (i) the phenomena of humble leadership and creativity through experimental design methodologies; (ii) the phenomenon of creativity through a sustainability-oriented perspective; (iii) the learning/self-development mechanisms through which the humble leader promotes followers' creativity; (iv) the affective-emotional process that links the humble leadership influence to creative outcomes; (v) the articulation of how followers learn and not just what makes them learn; (vi) the power of humble leadership to mobilize the way of followers dealing with complex and contradictory issues; and (vii) the cognitive processes that connect leader humility with creative outcomes, but through the paradox perspective and applying experimental design methodology.

Several theoretical implications can be highlighted from the findings of both studies, which have already been explored in detail in each work. First, the state-of-the-art delimitation of the first study contributed to the achievement of a more thorough understanding of the relationship between humble leadership and creativity/innovation in the field of business. Secondly, the aforementioned identification of the detailed aspects of these topics' intersection pointed to the pressing need for a deeper academic investigation on the matter.

Through the exploration of some missing aspects in the business literature, the second study concluded, among other things, that the asynchronous online environment is limited to investigating through experimental design research more complex processes, like leadership influence. Also, it was possible to conclude that the synchronous online environment could have been more effective in fully grasping the humble leadership influence on followers' sustainability-oriented creativity.

Research findings also showed that humble leadership can promote some sort of cognitive opening in followers, who develop a paradox mindset that allows them to deal with contradictory demands. Because humble leaders act in a way that seems to value the creative process, not just the final result that will be achieved, they can encourage the divergent mechanism of creative problem-solving, which is essential to creativity. Humble leaders are, thus, able to alleviate followers from the pressure to quickly enter the convergent stage of the creative process, enabling, as a consequence, the divergent/opening stage to occur more freely.

Also, some practical implications can be drawn from both research findings, which include the humble leadership power of impact on socio-environmental issues, which is quite interesting, since the humble way of leading seems to allow followers to navigate paradoxes and be consistent in the context of dilemmas.

Additionally, we do have evidence to believe that the position, for example, of an innovation manager of an organization that is willing to create shared value for all stakeholders, may benefit from the humble behaviors of the leader. Not only innovation managers, but also, for example, the advocacy and institutional relations manager/director, who must develop and maintain strong relationships with institutional stakeholders. As a result, this points to the necessity of the development of humble managerial skills that deal with these sustainability challenges (purpose and profit).

Regarding the results of the first study, scholars may also explore non-significant and unpublished findings outside the field of business and psychology. In addition, from the set of previous academic work on the subject, it seems reasonable to believe that there must be more studies out there with unconfirmed hypotheses, which invites us to alternatively think about research methods and how we are testing these premises. The need for open science, for example, sounds

relevant, to replicate studies and not incur the fallacy of only studies with confirmed hypotheses being published.

Moreover, to think critically about the theory itself – are there any boundary conditions that limit the power of influence of the humble leadership regarding sustainability-oriented creativity? Are there any circumstances under which being humble will not help?

Accordingly, future studies should also investigate the relevance of this leadership style, seeking a deeper understanding of the learning processes (via self-development and self-expansion) that stand between humble leadership and the ability to think creatively about sustainability. Further, future research efforts should also investigate the effects of humble leadership in online teams on the same evaluated outputs, to add relevant knowledge to the field, since virtual teams are a business reality and contain particularities that attach additional challenges to the leadership task.

Finally, after going through all the methodological steps that have been specially designed for the particular purpose of the present research, it sounds plausible to affirm that the results achieved by both studies have brought satisfactory answers to the research questions, despite the limitations faced, and duly documented in this work.

The leader's humility, therefore, seems to appear as a tipping point announcing a shift from a traditional business model strategy to a new one, where purpose is also a core value. Humble leadership proved to be essential and of significant value for companies that aim to prepare their professionals to become real social innovators, who can easily and effectively navigate the 'apparent' paradox of generating profit for shareholders, but also generating shared value for all stakeholders, and contributing to the common good.

5. Ethical considerations

As it involves human beings, the study was submitted to the Chamber of Ethics in Research at PUC-Rio and respondents had to read and agree, albeit virtually, with the Informed Consent Term. The established ethical precepts were complied with throughout the process of construction of the work with regard to ensuring the legitimacy of information, privacy, and confidentiality of information and respondents, as well as the publication of the results obtained. The present research received prior approval from the university Chamber of Ethics (*Parecer 64-2022, Protocolo 68-2022*), as follows:

PUC-Rio Chamber of Ethics in Research Approval:

PONTIFÍCIA UNIVERSIDADE CATÓLICA
DO RIO DE JANEIRO



CÂMARA DE ÉTICA EM PESQUISA DA PUC-Rio

Parecer da Comissão da Câmara de Ética em Pesquisa da PUC-Rio 64-2022 – Protocolo 68-2022

A Câmara de Ética em Pesquisa da PUC-Rio foi constituída como uma Câmara específica do Conselho de Ensino e Pesquisa conforme decisão deste órgão colegiado com atribuição de avaliar projetos de pesquisa do ponto de vista de suas implicações éticas.

Identificação:

Título: "Destravando soluções criativas voltadas para o bem comum nas organizações" (Departamento de Administração da PUC-Rio)

Autora: Ana Carolina Martini Boraz de Mello e Souza (Doutoranda do Departamento de Administração da PUC-Rio)

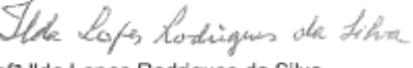
Orientadora: Flavia de Souza Costa Neves Cavazotte (Professora do Departamento de Administração da PUC-Rio)

Apresentação: A pesquisa objetiva estudar como líderes empresariais ajudam suas organizações a se desenvolverem de maneira sustentável e promover a criatividade/inovação em suas equipes e indivíduos. Abordará estudantes de graduação e pós-graduação (MBA) de universidades brasileiras. Prevê aplicar um estudo de caso de uma empresa fictícia junto aos participantes, constituindo dois grupos com a representação de papéis diferentes. Um grupo da liderança humilde e outro da liderança transacional. Além do preenchimento de um questionário. Também abordará funcionários de companhias filiadas ou em processo de certificação no sistema B-Corp ou alinhadas ao desenvolvimento dos Objetivos de Desenvolvimento Sustentável das Nações Unidas via aplicação de um questionário eletrônico. Conta com apoio de suporte teórico em estudos relacionados à temática e aplicará análises estatísticas adequadas.

Aspectos éticos: O projeto e os Termos de Consentimento Livre e Esclarecido (alunos e funcionários) apresentados estão de acordo com os princípios e valores do Marco Referencial, Estatuto e Regimento da Universidade no que se refere às responsabilidades de seu corpo docente e discente. Os Termos expõem com clareza os objetivos da pesquisa e os procedimentos a serem seguidos. Garantem o sigilo e a confidencialidade dos dados coletados. Informam sobre a possibilidade de interrupção na pesquisa sem aplicação de qualquer penalidade ou constrangimento.

Parecer: Aprovado.


Prof. José Ricardo Bergmann
Presidente do Conselho de Ensino e Pesquisa da PUC-Rio


Profª Ilda Lopes Rodrigues da Silva
Coordenadora da Comissão da Câmara de Ética em Pesquisa da PUC-Rio

Rio de Janeiro, 4 de agosto de 2022

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Appendix A. Leadership manipulations (vignettes) – Paper 2

A.1. Humble leadership

Humble leadership scenario: Lucas Santos is a person fully aware of both his strengths and personal limitations. Lucas appreciates and frequently praises his subordinates and co-workers for their unique strengths and contributions. When he doesn't know something or doesn't know how to do something, he admits it, just as if he makes a mistake, he admits it too. Lucas doesn't hesitate to recognize when his subordinates have more knowledge, skills, and competencies than he does. Lucas also actively seeks feedback from people about his actions and decisions, even if to receive criticism, as he is always willing to improve and learn from others. He often seeks to listen to people's ideas.

A.2. Transactional leadership

Control: Whenever you're around Lucas, you'll know you'll be rewarded if you achieve the goals you've been assigned, and you'll be punished when you don't meet work expectations. Lucas always keeps promises of rewards when his subordinates successfully complete their tasks. Lucas also communicates with his subordinates when they don't meet expected performance standards. Lucas doesn't intervene in small slip-ups by members of his team, preferring to let his subordinates solve these small problems on their own. On the other hand, when problems become serious, Lucas's subordinates know that he will step in and take the necessary corrective measures.

Appendix B. The experimental task – Paper 2

“As explained by CEO Lucas Santos in the video, the company currently operates in several cities and is looking to expand its range of products, entering the solar panel market for homes. For this purpose, Liberlux has an initial budget of R\$ 10,000,000.00 (ten million reais) to invest in this new line of products, whose sales price, considered competitive by the financial manager of the company, is R\$ 100.00 per solar panel. So CEO Lucas reached out to you, the company's project manager, to discuss options. He presented three initial alternatives for moving the project forward, but he wants you and your team to reflect on them and also think of alternative solutions for the case.

The first alternative (A) is to import products from a supplier located in country A, which has proven environmental performance and a formal policy of respecting workers' rights, but for R\$ 50.00 (fifty reais) per panel (or that is, the profit margin for Liberlux would be R\$ 50.00). The panel here is more expensive, but it would allow the company to sell it immediately (increasing its revenue in the short term). This alternative would possibly also lead to the receipt of some bonus (variable compensation) by you, as the project manager, and by your team members in the short term.

The second alternative (B) would be to import the products from the supplier in country B, which is cheaper, allowing the sale of the panel for R\$ 20.00 (twenty reais) (resulting in a profit margin of R\$ 80.00 for Liberlux). They have the panel for immediate delivery, however, historically the company does not allow auditing of environmental and social/labor practices in its factories, and there may be a certain risk in this regard. As it is a cheaper panel, which would allow you to start selling now, there would be a significant increase in the company's revenue in the short term – which would also lead to you and your team members receiving a higher bonus in the short term.

The third alternative (C) would be to choose to produce the panels in Brazil, for R\$ 30.00 (its profit margin would be R\$ 70.00), but this would take 2 years to be ready and would require an initial investment of R\$ 5,000,000.00 (five million reais) for the construction of the factory. On the other hand, Liberlux would

encourage local industry, to close more contracts with Brazilian suppliers/partners, in addition to promoting job creation. In this case, the company would not sell the product in the short term, postponing its revenue stream – which would also compromise the receipt of bonuses by you and your team members in the short term, since the increase in the volume of sales would be postponed to the future.”

The positive impacts (green star) and negative impacts (red star) of each choice to each stakeholder are the following:

	Social Dimension								Environment Dimension		Economic Dimension	
	Providers/Local partners		Employees (Bonus - variable salary)		Local community (people from the neighborhood, city, etc.)		Clients (product consumers)		Environment		Shareholders/Investors (economic return)	
Budget allocation alternatives	Short-term impact: positive	Short-term impact: negative	Short-term impact: positive	Short-term impact: negative	Short-term impact: positive	Short-term impact: negative	Short-term impact: positive	Short-term impact: negative	Short-term impact: positive	Short-term impact: negative	Short-term impact: positive	Short-term impact: negative
Alternative A: Budget allocation on Supplier A		★		★		★	★		★		★	
Alternative B: Budget allocation on Supplier B		★	★			★	★			★	★	
Alternative C: Budget allocation on in-house production in Brazil	★			★	★			★	★			★
Alternative D: New solution thought by you												

I) Remembering once again that you work for the leader Lucas Santos, whose profile was summarized as follows by a co-worker, who has been at Liberlux longer than you:

[This item was only used in the Quasi-experiment – Study 1, and each participant received only one of the following vignette's scenarios]:

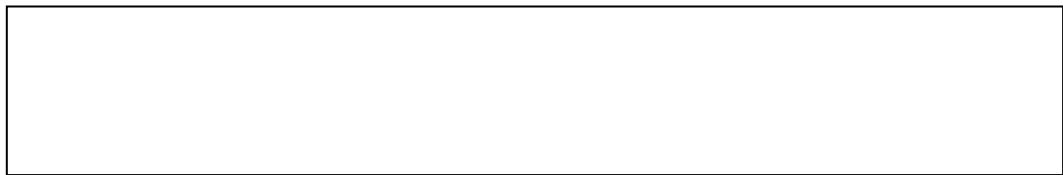
Lucas Santos is a person fully aware of both his strengths and personal limitations. Lucas appreciates and frequently praises his subordinates and co-workers for their unique strengths and contributions. When he doesn't know something or doesn't know how to do something, he admits it, just as if he makes a mistake, he admits it too. Lucas doesn't hesitate to recognize when his subordinates have more knowledge, skills, and competencies than he does. Lucas also actively seeks feedback from people about his actions and decisions, even if to receive criticism, as he is always willing to improve and learn from others. He often seeks to listen to people's ideas; *or*

Whenever you're around Lucas, you'll know you'll be rewarded if you achieve the goals you've been assigned, and you'll be punished when you don't meet work expectations. Lucas always keeps promises of rewards when his subordinates successfully complete their tasks. Lucas also communicates with his subordinates when they don't meet expected performance standards. Lucas doesn't intervene in small slip-ups by members of his team, preferring to let his subordinates solve these small problems on their own. On the other hand, when problems become serious, Lucas's subordinates know that he will step in and take the necessary corrective measures.

II) Considering the above case, how would you, as an employee of Liberlux (project manager), reporting to the leader, Lucas Santos, solve the issue? How would you allocate Liberlux's resources and in what way? Can you think of any other solution to the challenge? Remember that the choice is free, that there is no right or wrong answer, and that the allocation of resources can be done in any combination.

The total budget to be allocated: R\$ 10,000,000.00			
Alternative A	Alternative B	Alternative C	Alternative D (new solution thought by you)

Use the space down below to draft your ideas and explain your solution:



[end of the Liberlux case]

Appendix C. Leadership manipulations (video clips) – Paper 2

LIBERLUX CASE

SCRIPT

One Scene Play

By

Ana M. Souza

Based on the real case "GoSun"

May 2022

CHARACTERS:

LUCAS SANTOS, 38, LIBERLUX CEO (ACTOR: PEDRO NOGH)

**DANIEL MARTINS, 28, NEW BUSINESS MANAGER AT LIBERLUX
(ACTOR: TIAGO MARQUES)**

LOCATION:

Filmed at PUC-Rio's Management Department.

REAL CASE USED AS INSPIRATION:

GoSun - <https://gosun.co/>

FICTIONAL CONTEXT:

LIBERLUX is a solar energy startup that will make a presentation, in a conversation format, that takes place between the CEO, Lucas Santos, and his new business manager, Daniel Martins, to talk about the company and the challenges that an organization concerned with sustainability experiences in its day-to-day.

CHARACTERS' PROFILES:

LUCAS SANTOS (2 profiles):

Humble Leader (LH):

Lucas Santos is a person fully aware of both his strengths and personal limitations. Lucas appreciates and frequently praises his subordinates and co-workers for their unique strengths and contributions. When he doesn't know something or doesn't know how to do something, he admits it, just as if he makes a mistake, he admits it too. Lucas doesn't hesitate to recognize when his subordinates have more knowledge, skills, and competencies than he does. Lucas also actively seeks feedback from people about his actions and decisions, even if to receive criticism, as he is always willing to improve and learn from others. He often seeks to listen to people's ideas.

Transactional Leader (LT) or neutral leadership profile, focused on rewards and punishments:

Whenever you're around Lucas, you'll know you'll be rewarded if you achieve the goals you've been assigned, and you'll be punished when you don't meet work expectations. Lucas always keeps promises of rewards when his subordinates successfully complete their tasks. Lucas also communicates with his subordinates when they don't meet expected performance standards. Lucas doesn't intervene in small slip-ups by members of his team, preferring to let his subordinates solve these small problems on their own. On the other hand, when problems become serious, Lucas's subordinates know that he will step in and take the necessary corrective measures.

DANIEL MARTINS (1 version/profile):

Neutral profile. The character participates here to simulate a "real" relationship between leader-follower, where the exchanges between them (Daniel and Lucas) promote the desired interaction that illustrates for the audience the profile of the Leader (Lucas). Also, ensuring that the dimensions of the different leadership profiles always appear (in all data collection opportunities) and in a consistent/standardized way.

Video – Draft script:

Fictional scene based on a case study: The CEO and founder of the Liberlux startup, Lucas Santos, and his new business manager, Daniel Martins, introduce themselves

and introduce Liberlux, whose conversation about the company and its challenges were recorded to be presented in other opportunities for research purposes:

Dimensions of each profile:

1st version of Leader Lucas Santos:

Humble Leader
Dimension 1- Self-awareness of his strengths and weaknesses: A genuine willingness to see himself accurately, whether in relation to his strengths or weaknesses. He embarks on the journey of the challenge of seeing himself clearly and accurately (whether in strengths or weaknesses).
Dimension 2- Appreciation of other's strengths and contributions: He does not hesitate to recognize when his subordinates know more than he does, or when they have more skills or competencies than he does. Recognizes the strengths of his subordinates, and publicly demonstrates appreciation for their unique contributions. He often praises them for their points, sizes, and qualities. He is open to the ideas of his subordinates and councils, being open to learning from them.
Dimension 3- Learning capacity: Desire to improve his strengths and minimize his weaknesses. He actively seeks feedback from his subordinates about his actions and decisions, even if it is to receive criticism. If he doesn't know something or how to do something, he admits it. Just as he admits when he makes a mistake.

2nd version of the CEO, Lucas Santos:

Transactional Leader
Dimension 1 – This leader clarifies the responsibilities for his subordinates, monitoring their performance and taking corrective actions if necessary.
Dimension 2 – This leader makes sure that you achieve certain standards of performance despite mistakes and failures.
Dimension 3 – This leader rewards his subordinates if their performance is satisfactory.

HL: Humble Leader (marked in green)

TL: Transactional Leader (marked in blue)

(Those interested are seated in the audience and watch LUCAS at the front of the room, standing, and DANIEL sitting in the first row of chairs)

1st take: Initial presentation of the characters to the audience (CEO and manager)

LUCAS:

(HL)

- Good afternoon, guys! Is everything okay with you?
- I'm Lucas, **I'm a business executive and after a long learning journey, with a phenomenal team, we built what is today Liberlux.** *(HL dimensions 2+3)*
- **Here we will talk a little bit about our company, and share with you some information on how we work and what kind of challenges we face in our day-to-day.** *(HL dimension 2)*
- Following the talk we will ask you to do an activity to illustrate some of the challenges that **we are** facing right now.
- **Remember that we're learning together. There is no right or wrong here. It's important for you to know that.** *(HL dimensions 1+3)*
- I would also like to take this opportunity to introduce you to Daniel, our new business manager. **He's the one who knows all about the company's challenges, more than I do...** *(HL dimension 2)*

[smiles]

(TL)

- Good afternoon, guys! Is everything okay with you?
- I am Lucas **Santos, founder and CEO of Liberlux.**
- **Today I'm going to** talk a little bit about **the company** and share with you **what the job is like** and what kind of challenges **are faced** in the company's day-to-day.
- Next, you will do an activity to illustrate some of these challenges that **the company is** facing right now.
- **I always like to make the rules of the game very clear. This is how things work in the company. I like to put everyone on the same page.** *(TL dimension 1)*
- I would also like to take this opportunity to introduce you to Daniel, our new business manager.

DANIEL:

- It's a pleasure to be here today with you, guys! I'm Daniel.

2nd take: Explaining what the organization does

LUCAS:

(HL)

- Our startup is composed of a multidisciplinary team, and we act as true change agents, seeking at the same time to protect the planet and deliver unique solutions to people's daily needs. Like, for example, cooking, cooling, purifying water for consumption, and recharging mobile devices such as mobile phones, laptops, tablets... But all this with innovative and sustainable products that use solar energy.

(HL dimension 2)

(TL)

- Liberlux is a startup composed of a multidisciplinary team, which acts as an agent of change, seeking at the same time to protect the planet and deliver unique solutions to people's daily needs. Like, for example, cooking, cooling, purifying water for consumption, and recharging mobile devices such as mobile phones, laptops, tablets... But all this with innovative and sustainable products that use solar energy.

DANIEL:

- It is important to remember, right, Lucas, that we are here to listen to you too, and to understand how you would solve some of the challenges that the company faces.

LUCAS:

(HL)

- Yes, Daniel, despite being the head of the company, I do not have all the answers, so I always try to listen to your opinion and of the whole team. Criticism too! I want to make room for your great ideas to emerge! *(HL dimensions 1+2+3)*

(TL)

- Yes.

- You know me, right, Daniel? You know I like to reward the team when they achieve the expected results. *(TL dimension 3)*

- We like to set everyone's expectations right at the beginning. *(TL dimension 1)*

- Who reaches the goal is guaranteed a bonus. *(TL dimension 3)*

DANIEL:

- Yes, Lucas...

[shakes his head in agreement].

3rd take: Explaining the organizational culture

LUCAS:

(HL)

- In our company, we value everyone's opinion. (*HL dimension 2*)
- We assume that we are all learning together and that no one knows more than anyone else. (*HL dimension 3*)
- We want to create an environment for learning and dialogue. (*HL dimension 3*)

(TL)

- The company works very hard with a focus on results. (*TL dimension 2*)
- Sets clear goals and expects them to be met. (*TL dimension 1*)
- Rewarding those who achieve them. (*TL dimension 3*)

4th take: Explaining the moment in which the business is and the challenges.

DANIEL:

- Shall we tell them a little bit about the company's current moment and goals? So that they can understand the background of the challenges we face in our daily work?

LUCAS:

(HL)

- Good, Daniel. Thanks for reminding me, I was almost forgetting... Two heads think better than one! (*HL dimensions 1+2*)

- Hey guys, I can make mistakes too. Feel free to intervene if you feel it is necessary. (*HL dimension 1*)

- Well, guys, at this moment we're expanding Liberlux's operations to grow, seeking not only to expand the market geographically but also the product line.

- For this, we are seeking to increase revenue, but also to contribute to the well-being of society. We are entering the market of selling solar panels for homes, planning a very cool new business project for the company.

- However, this project involves the challenge of coordinating several different interests of various stakeholders involved in the operation, which you can find in greater detail in the activity brochure that we have delivered to you.

(TL)

- Well, guys, at this moment **Liberlux** is expanding its operations to grow, seeking not only to expand the market geographically but also the product line.

- For this, **Liberlux** is seeking to increase revenue, but also contribute to the well-being of society, entering the market of selling solar panels for homes and planning a very cool new business project for the company.

- However, this project involves the challenge of coordinating several different interests of various stakeholders involved in the operation, which you can find in greater detail in the activity brochure that we have delivered to you.

DANIEL:

- Wonderful!

- Now guys, we ask you to answer some preliminary questions and do the activity that is in the brochure that you received.

LUCAS:

(HL)

- Perfect, Daniel. Lucky me, to have you by my side. **(HL dimension 2)**

- Always attentive to details and with timely interventions. **(HL dimension 2)**

- So I always learn too! Thank you! **(HL dimension 3)**

- All the instructions you can find in the brochure you received.

- Any questions, you can talk to me or Daniel. **(HL dimension 2)**

- Let's get started, then. Wonderful, guys!

(TL)

- All the instructions you can find in the brochure you received.

- Let's get started, then. Wonderful, guys!

[DANIEL and LUCAS exchange glances with the audience, thank them and the scene ends]

THE END

Appendix D. Measurements – Paper 2

➔ **Leader humility** (Owens et al., 2013):

This leader...

1. actively seeks feedback, even if it is critical.
2. acknowledges when others have more knowledge and skills than himself/herself.
3. admits when he/she doesn't know how to do something.
4. shows appreciation for the contributions of others.
5. takes notice of the strengths of others.
6. often compliments others on their strengths.
7. is willing to learn from others.
8. is open to the ideas of others.
9. is open to the advice of others.

➔ **Transactional leadership (Multifactor Leadership Questionnaire – MLQ)**: (Bass, 1985b):

This leader...

1. clarifies the responsibilities for his/her subordinates, monitoring their performance and taking corrective actions if necessary.
2. makes sure that you achieve certain standards of performance despite mistakes and failures.
3. rewards his/her subordinates if their performance is satisfactory.

➔ **Creative process engagement** (Zhang & Bartol, 2010):

○ **Problem identification:**

1. I spent considerable time trying to understand the nature of the problem.
2. I thought about the problem from multiple perspectives.
3. I decomposed a difficult problem/assignment into parts to obtain greater understanding.

○ **Information searching and encoding:**

4. I consulted a wide variety of information.
5. I searched for information from multiple sources (e.g., personal memories, others' experiences, documentation, Internet, etc.).
6. I retained large amounts of detailed information in my area of expertise for future use.

○ **Idea generation:**

7. I considered diverse sources of information in generating new ideas.
8. I looked for connections with solutions used in seemingly diverse areas.
9. I generated a significant number of alternatives to the same problem before I chose the final solution.
10. I tried to devise potential solutions that move away from established ways of doing things.

11. I spent considerable time shifting through the information that helped to generate new ideas.

➔ **Paradox mindset** (Miron-Spektor et al., 2018):

1. When I consider conflicting perspectives, I gain a better understanding of an issue.
2. I am comfortable dealing with conflicting demands at the same time.
3. Accepting contradictions is essential for my success.
4. Tension between ideas energize me.
5. I enjoy it when I manage to pursue contradictory goals.
6. I often experience myself as simultaneously embracing conflicting demands.
7. I am comfortable working on tasks that contradict each other.
8. I feel uplifted when I realize that two opposites can be true.
9. I feel energized when I manage to address contradictory issues.

➔ **Perspective-taking** (Davis, 1980):

1. I believe that there are two sides to every question and try to look at them both.
2. When I am upset at someone, I usually try to "put ourselves in his shoes" for a while.
3. I try to look at everybody's side of a disagreement before I make a decision.
4. It's rare that some issue is ever black and white -- usually the truth is somewhere in between.
5. I sometimes find it difficult to see things from the "other guy's" point of view.
6. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
7. If I are sure I are right about something, I don't waste much time listening to other people's arguments.
8. It's often harmful to spend lots of time trying to get everyone's point of view -- some decisions have to be made quickly.
9. I sometimes try to understand [my/our] friends better by imagining how things look from their perspective.

➔ **The International Positive and Negative Affect Schedule Short Form (I-PANAS-SF)** (Thompson, 2007):

Watching the video made me feel:

1. Upset
2. Hostile
3. Alert
4. Ashamed
5. Inspired
6. Nervous
7. Determined
8. Attentive
9. Afraid
10. Active