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RESEARCH ARTICLE

Validation of an adapted scale to assess adult attachment styles in organizational contexts

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Abstract

This study presents the design and validation of an organizational attachment scale that integrates Bowlby's attachment theory into the analysis of workplace behavior. Its goal is to offer organizations a rigorous and reliable tool to assess how attachment styles influence professional dynamics, such as interpersonal relations, stress management, collaboration, job satisfaction, and team performance. The theoretical relevance lies in explaining how individuals form, maintain, or avoid emotional bonds with colleagues, supervisors, and the organization itself, insights that are essential for enhancing both employee well-being and organizational effectiveness.

The research responds to the transition from Taylorist management models to contemporary "quantum" paradigms, where flexibility, complexity, and human factors are central, and organizations operate in BANI (Brittle, Anxious, Nonlinear, Incomprehensible) environments. Using a quantitative, non-experimental design, data were collected through LinkedIn from 204 team leaders and middle managers across various industries. Statistical validation included exploratory and confirmatory factor analyses, internal consistency testing, and assessments of convergent and discriminant validity.

Results revealed a solid three-factor structure, secure, anxious, and avoidant attachment, showing high reliability and strong construct validity. These findings confirm the instrument's effectiveness in distinguishing attachment styles in professional contexts and highlight their influence on emotional regulation, communication, engagement, and performance. The study's originality lies in creating the first psychometric tool in Spain specifically tailored to organizational settings, addressing workplace hierarchies and norms. It thus advances theoretical understanding and provides a practical framework for cultivating healthier, more resilient, and productive organizational cultures.

Keywords: attachment styles; exploratory and confirmatory factor analysis; workplace attachment scale; organizational commitment; emotional self-regulation

Introduction

In recent decades, the workplace has undergone a radical transformation, shifting away from the rigid hierarchies and mechanistic models that once defined traditional organizational life (Tegtmeier, Weber, Sommer, Tisch & Wischniewski, 2022). From Taylorism, which prioritized productivity above everything else and did not leave space to creativity, autonomy, or emotional expression, to the more recent quantum paradigm, organizational theory has evolved to account for increasing complexity, emotional interdependence, and the psychological well-being of workers (Zohar, 2022). In this

context, attachment theory – originally conceived by John Bowlby (Bowlby, 1969) to explain early child-caregiver relationships – has emerged as a powerful lens through which to understand adult relational dynamics in professional environments. The relevance of this theory in organizational contexts lies in its capacity to illuminate how individuals form, maintain, or avoid emotional bonds with colleagues, supervisors, and the organization itself (Ren, Topakas & Patterson, 2024). Organizations today operate in highly volatile, uncertain, complex, and ambiguous environments (U. S. Army War College, 1998). These conditions, and their evolution into what some describe as BANI contexts, brittle, anxious, nonlinear, and incomprehensible (Bushuyev, Piliuhina & Chetin, 2023), demand not only structural adaptability but also emotional and relational resilience among employees and leaders. Leadership is increasingly viewed not simply as a function of technical expertise or strategic vision, but as a relational role grounded in trust, emotional security, and psychological availability (Haver, Akerjordet & Furunes, 2013).

In such scenarios, attachment theory offers a compelling framework to understand how individuals perceive support, engage with workplace stressors, and build professional relationships (Sutil-Martín & Rajas, 2022). Recent developments in organizational neuroscience and psychological safety have also renewed interest in understanding how early attachment styles manifest in adult professional behavior (Harms, 2011; Meredith, Merson & Strong, 2007). Internal working models, understood as mental schemas that organize memory and relational expectations, are shaped during formative life stages (Ammaniti, Van Ijzendoorn, Speranza & Tambelli, 2000; Zimmermann, 1999). They influence how individuals perceive, interpret, and respond to social experiences.

In organizational contexts, they continue to inform how employees assess trustworthiness, interpret intentions, and handle feedback or conflict (Collins & Allard, 2001; Mikulincer & Shaver, 2007). This makes attachment theory not only relevant for interpersonal relationships but central to understanding the emotional fabric of organizational life (Warnock, Ju & Katz, 2024). Securely attached individuals are more likely to thrive in collaborative and dynamic environments, while those with anxious or avoidant attachment patterns may struggle with ambiguity, change, or relational demands (Ren et al., 2024).

Despite the growing recognition of the importance of attachment styles in the workplace, tools for measuring this construct in organizational settings remain limited, particularly in Spanish-speaking contexts (Warnock et al., 2024). While several attachment instruments exist, many have been designed for clinical or interpersonal domains and lack the contextual specificity required for workplace assessment. The adult attachment interview (George, Kaplan & Main, 1996), for instance, provides rich qualitative insights but is impractical for large-scale use. Self-report instruments such as the Experiences in Close Relationships scale (Brennan, Clark & Shaver, 1998) or the Attachment Style Questionnaire (Feeney, Noller & Hanrahan, 1994) offer greater accessibility, yet they often overlook workplace-specific relational dynamics, such as those involving leadership hierarchies, role boundaries, and task interdependence.

In this light, the lack of validated instruments to measure workplace-specific attachment styles within the Spanish population represents a significant gap (Warnock et al., 2024). Cultural adaptation is essential, as attachment behaviors are also shaped by social norms, leadership expectations, and communication styles (Ren et al., 2024). The present study seeks to fill this void by introducing and validating (Cook & Beckman, 2006) a 38-item instrument designed to assess secure, avoidant, and anxious-ambivalent attachment styles specifically within professional settings. By grounding the scale in Bowlby's theoretical framework and tailoring its items to workplace dynamics, this research contributes to a more nuanced understanding of adult attachment as it plays out within modern organizational ecosystems.

This manuscript is organized into the following sections. Section 2 presents a review of the literature and develops the theoretical framework underpinning the study. Section 3 outlines the research methodology and describes the instruments used for data collection. Section 4 focuses on the analysis and validation of the proposed scale, employing both exploratory factor analysis (EFA) and

confirmatory factor analysis (CFA) techniques. Section 5 offers a discussion of the findings, along with a comparative overview of other available psychometric tools that, while relevant, have not been validated for the Spanish business population. Finally, Section 6 highlights the main conclusions of the study, considering its limitations, and outlines directions for future research.

Literature review

The shift in the business paradigm

Since the 17th century, scientific thinking has been dominated by the mechanistic paradigm, grounded in Newtonian laws that described a linear, deterministic, and predictable universe (Capra, 1982). This vision, when transferred to the business world by Taylor (1911), gave rise to Taylorism: an organizational model characterized by extreme division of labor, rigid hierarchies, employees viewed as interchangeable parts, and the leader as a strong, centralized authority figure. While this approach increased productivity, its impersonal nature, exclusive focus on output, and low adaptability have rendered it obsolete in today's context (Burns & Stalker, 1961; Morgan, 1998).

The contemporary organizational environment is defined by volatility, uncertainty, complexity, and ambiguity, captured by the acronym volatile, uncertain, complex, and ambiguous (U.S. Army War College, 1998). This has resulted in a rapidly changing and unpredictable world in which organizations must be agile and highly adaptable to respond effectively to emerging conditions. Although the volatile, uncertain, complex, and ambiguous model accurately describes the current context, it has limitations in fully capturing its complexity. In response, the BANI model was proposed, standing for brittle, anxious, nonlinear, and incomprehensible (Cascio, 2020). This model introduces new dimensions such as perceived structural fragility, collective anxiety, and cognitive overload in the face of the incomprehensible, highlighting emotional and psychological impacts on individuals and organizations. While it is true that the emergence of artificial intelligence in organizational management has become a valuable tool for decision-making in uncertain environments, enhancing adaptive and predictive capacities (Saura & Bužinskienė, 2025) and optimizing strategic processes (Bessa & Barbosa, 2025; Hernández-Tamurejo González-Padilla & Saiz-Sepúlveda, 2025), the establishment of strong interpersonal relationships, understanding employees' attachment styles at the workplace, and the development of high levels of socioemotional skills (Villena-Martínez, Rienda-Gómez, Sutil-Martín & García-Muiña, 2024) within the workplace remain essential for organizational well-being. As such, it calls for not only adaptive structures but also emotionally intelligent leadership (Sutil-Martín & Rajas, 2022).

The organizational quantum paradigm emerged as a response to the inability of traditional structures to adapt effectively to volatile environments. Inspired by principles of quantum physics, this paradigm views companies as living, complex, and interconnected systems (Zohar, 2022). It promotes self-organization, energy flow management, holistic thinking, and the development of human relationships as central pillars of business operations (Capra & Luisi, 2014). Instead of vertical hierarchies, bottom-up models like those implemented by Haier or Spotify are proposed, fostering autonomy, shared purpose, and adaptability (Zhang & Greeven, 2020).

Under this paradigm, leaders transition from authoritarian figures to facilitators of human development, while employees assume greater responsibility and become co-creators of the organizational environment (Tegtmeier et al., 2022). However, despite redefining structure and philosophy, this paradigm does not provide tools to understand how mental, emotional, and motivational states are generated, sustained, or transformed in the workplace (Ren et al., 2024). Organizational neuroscience offers a valuable complement by providing empirical insights into how brain activity underlies cognitive and affective processes that influence decision-making, relational dynamics, and organizational culture (Siegel, 2010). This discipline allows for the transformation of the systemic and energetic approach of the quantum paradigm into practical interventions based on understanding motivation, emotional self-regulation, and social connection (Rock & Ringleb, 2009).

In organizations operating under the quantum paradigm, the flow of information, interpersonal relationships, and trust are as important as technical skills or processes (Wheatley, 2006). In adults, these relationships are mediated by attachment style, which acts as a perceptual and emotional filter influencing how individuals build workplace relationships, interpret intentions, or negotiate boundaries (Davidovitz, Mikulincer, Shaver, Izsak & Popper, 2007). This makes attachment a critical factor in environments that rely on emotionally secure interdependence.

Attachment and its types

Attachment theory, developed by John Bowlby (Bowlby, 1969, 1982), explains how early emotional bonds with caregivers form internal working models that guide relational behavior throughout life. These models operate automatically, integrating past emotional experiences to predict the availability of support, thereby influencing emotional regulation and perceptions of oneself and others (Ainsworth, Blehar, Waters & Wall, 1978; Bowlby, 1988). Attachment styles were classified into secure and insecure, with the latter divided into anxious and avoidant types.

Individuals who experience consistent and sensitive responses to their needs in childhood are likely to develop a secure attachment style, characterized by a positive view of self and others, a sense of being worthy of support, and seeing others as reliable providers of that support (Collins, 1996). When a caregiver's responses are inconsistent with the child's needs, the child may develop two distinct types of internal working models, leading to an anxious, insecure attachment style, characterized by a negative self-view and doubts about being deserving of support, even if others are seen as capable of providing it (Ainsworth et al., 1978). Conversely, in cases where attachment figures are perceived as repeatedly unavailable or absent, an avoidant attachment style may emerge, characterized by a positive self-view and belief in one's worthiness of support, coupled with distrust in others' ability to provide it (Richards & Schat, 2011).

There are two main approaches to conceptualizing adult attachment: the categorical approach, which uses discrete typologies, and the dimensional approach, proposed by Bartholomew and Horowitz (1991), which maps attachment on axes of anxiety and avoidance. Recent literature suggests that, although the dimensional model of attachment provides statistical sensitivity to capture individual gradients, offering greater precision in assessing individual differences, categorical approaches remain relevant in applied contexts. Meta-analyses (Warnock et al., 2024) have confirmed that categorical attachment styles show significant correlations with variables of interest in organizational settings, such as job performance, satisfaction, and burnout, as well as with personality traits described in the Big Five model (Mammadov, 2022), thereby enhancing their validity. More recent studies (Morales-Vives, Ferre-Rey & Ferrando, 2025) demonstrate that through mixed-method analyses, valid categorical profiles can be identified within dimensional structures, supporting the utility and validity of the categorical approach to attachment for diagnostic purposes and practical applications in organizational contexts. For this reason, many studies, particularly applied ones, tend to favor the categorical approach.

Adult attachment becomes activated in emotionally significant situations such as intimacy, stress, or the search for support (Mikulincer & Shaver, 2007), manifesting in emotional regulation patterns, coping styles, and modes of interpersonal bonding. Securely attached individuals tend to form relationships based on trust and mutual support, while insecure attachment styles are associated with anxiety, relational difficulties, and lower resilience (Mikulincer & Shaver, 2005).

In organizational contexts, attachment style influences key variables such as leadership perception, conflict management, teamwork, and adaptability to change (Harms, 2011; Richards & Schat, 2011). Within the quantum paradigm, which emphasizes relationships and emotional energy in organizations, understanding attachment becomes essential for designing emotionally sustainable workplaces and developing appropriate assessment tools.

Attachment in the organizational context

The study of attachment in organizational settings extends Bowlby's (1969) theory into adulthood, with recent research consolidating its application in the workplace. Yip, Ehrhardt, Black & Walker (2018) and Warnock et al., (2024) emphasize how internal working models formed early in life shape individuals' relationships with authority figures and peers in professional environments, particularly in complex organizations where interpersonal dynamics are essential.

In organizational contexts, internal working models function as cognitive-emotional templates that guide how employees perceive, interpret, and respond to relational experiences at work. Rooted in early attachment relationships, these models influence how individuals view themselves and others in professional settings, shaping expectations of support, trust, and responsiveness (Ren et al., 2024). Recent theoretical frameworks suggest that internal working models regulate workplace behavior through cognitive, affective, and behavioral self-regulation mechanisms, thereby impacting decision-making, collaboration, and emotional resilience (Ren et al., 2024).

These models operate differently across relational domains; for instance, employees may hold distinct attachment representations toward supervisors versus peers, which in turn influence performance, communication patterns, and the sense of inclusion within teams (Vîrgă, Opre & Popescu, 2023). Moreover, perceiving a leader as an attachment figure, someone who provides availability, support, and emotional security, has been shown to strengthen engagement and performance, although it may also heighten dependency-related anxiety under certain conditions (Lisá, Greškovičová & Krizova, 2021). Taken together, these findings underscore the profound role of internal working models in shaping organizational dynamics and highlight the importance of fostering secure, responsive leadership environments to enhance individual and collective functioning.

Adult attachment styles have been shown to predict motivation, job orientation, and work attitudes (Ren et al., 2024). Anxious attachment is associated with emotional insecurity, low self-efficacy, and heightened rejection sensitivity, increasing perceived stress and the likelihood of burnout (Moriano, Molero, Laguía, Mikulincer & Shaver, 2021). Conversely, avoidant attachment correlates with emotional suppression, excessive autonomy needs, and difficulties in forming trusting relationships, which also contribute to occupational stress (Ren et al., 2024; Warnock et al., 2024).

Both insecure styles are negatively associated with job satisfaction and self-efficacy (Warnock et al., 2024), and they hinder the quality of relationships with supervisors. Anxiously attached individuals often fear criticism or a lack of empathy from superiors (Moriano et al., 2021), while avoidant individuals tend to reject collaboration and behave overly independently (Kirrane, Yip, Ehrhardt & Walker, 2019).

These patterns affect the quality of leader-member exchanges, limiting autonomy, trust, and mutual loyalty (Mayseless & Popper, 2019). Insecure attachment styles also influence job performance and organizational citizenship behaviors, either through emotional interference in the case of anxious attachment or disengagement from collective responsibilities in the case of avoidant attachment (Warnock et al., 2024).

Recent studies have introduced the concept of organizational attachment, defined as the emotional bond between employees and the organization as a symbolic attachment figure. Organizations that function as a secure base, being available, consistent, and responsive, can foster innovation, resilience, and commitment among members (Mayseless & Popper, 2019; Westover, 2024). These findings highlight the explanatory power of attachment in organizational dynamics and underscore the need for context-specific assessment tools.

Review of adult attachment and workplace attachment measurement instruments

Research on adult attachment has produced a wide range of assessment tools, allowing exploration of the construct through both qualitative and quantitative approaches in clinical, personal, and organizational contexts. One of the earliest and most significant instruments is the adult attachment interview, developed by George et al. (1996), which provides an in-depth evaluation of internal

working models through narrative interviews. Despite its validity, the adult attachment interview is complex to administer and requires extensive training (Ravitz, Maunder, Hunter, Sthankiya & Lancee, 2010).

Self-report measures have gained prominence due to their ease of use and efficiency in research. Among the most widely recognized are the Experiences in Close Relationships (Brennan et al., 1998) and its revised version Experiences in Close Relationships-R (Fraley, Waller & Brennan, 2000), both extensively validated and applied. Other relevant tools include the Relationship Questionnaire (Bartholomew & Horowitz, 1991), which allows rapid classification but has lower internal reliability, and the Attachment Style Questionnaire (Feeney et al., 1994), which measures emotional and cognitive dimensions such as the need for approval and discomfort with closeness, relevant in workplace settings.

In the organizational field, the Current Relationship Interview (Crowell & Owens, 1998), initially designed for romantic relationships, has been adapted to study workplace bonds and leadership styles. More recently, Scrima *et al.* (Scrima, 2020; Scrima, Di Carlo, Lorito & Palazzeschi, 2015) developed the Workplace Attachment Style Questionnaire, specifically designed to assess attachment styles in professional environments, evaluating both the intensity and quality of emotional bonds with one's job. However, this instrument has not yet been validated for the Spanish population. Greškovičová and Lisá (2023) have validated an adapted version of Scrima *et al.* (Scrima, 2020) for the Slovakian population. De Andrade and Pedruzzi (2020) have validated a workforce attachment scale for Brazilians.

Despite methodological advances, there remains a lack of culturally adapted and context-specific instruments for assessing adult attachment in Spanish organizational settings. Therefore, this research aims to develop a valid, reliable, and contextually grounded tool to support rigorous analysis of attachment in organizations and to foster emotionally sustainable work environments.

Designing an attachment scale to workforce context. What to measure?

The items in the scale were designed to gather the following information regarding attachment styles in the workplace context. Employees with a secure attachment style tend to display balanced emotional regulation (SEG2), a strong sense of self-efficacy (SEG1), and the ability to establish trusting and cooperative relationships at work (SEG3 and SEG5). These individuals are generally comfortable with both autonomy and emotional closeness, enabling them to collaborate effectively while maintaining healthy interpersonal boundaries (SEG4 and SEG6) (Feeney & Noller, 1996). Their capacity to seek support when needed, coupled with a positive view of others, fosters constructive problem-solving and emotional resilience in stressful situations. Research has consistently shown that secure attachment in the workplace is linked to higher levels of trust, teamwork, and adaptability to change (Harms, 2011; Richards & Schat, 2011). Securely attached employees are also more likely to interpret feedback constructively and experience greater job satisfaction and engagement (Moriano et al., 2021) (see Table 1).

In contrast, individuals with insecure attachment styles, either avoidant or anxious, exhibit relational tendencies that can hinder collaboration and psychological well-being in organizational settings (Ren et al., 2024). Avoidantly attached employees often maintain emotional distance from colleagues and supervisors, show low trust in others' intentions, and tend to suppress emotional expression, especially under stress, withdraw in conflicts, and reduce social engagement, feeling alienated (Kirrane et al., 2019; Yip et al., 2018). This detachment can lead to decreased participation in team processes and lower organizational commitment (EVIT2, EVIT5, EVIT6, EVIT8-EVIT13, EVIT16, EVIT17, and EVIT19). Conversely, anxiously attached individuals may demonstrate excessive sensitivity to perceived social exclusion, emotional dependency on coworkers or leaders, and difficulty maintaining personal boundaries. Their intense concern about acceptance and validation often leads to emotional exhaustion and heightened stress (Ren et al., 2024; Vîrgă, Iliescu & Sava, 2019a). Both insecure styles have been associated with reduced satisfaction, impaired communication,

Table 1. Attachment items to the workplace context

Code	Item
SEG1	I have little doubt about myself when it comes to how I perform at work.
SEG2	In my work relationships, I usually combine emotional closeness with my colleagues and autonomy when reaching agreements.
SEG3	I believe people generally act with good intentions and a kind heart.
SEG4	I usually know which colleagues I can trust.
SEG5	My colleagues tend to be trustworthy and selfless.
SEG6	I don't mind making mistakes at work; I see them as opportunities to learn new things.
EVIT1	I usually avoid conflict with colleagues or supervisors by keeping emotional distance.
EVIT2	I often feel intense fear and anger when working with colleagues or my boss.
EVIT3	I prefer to keep emotional distance from my coworkers.
EVIT4	When I have conflicts at work, I tend to withdraw quietly and keep my composure.
EVIT5	I can't trust my colleagues or boss because sooner or later, I believe they will hurt me if I make the first move.
EVIT6	When colleagues or supervisors are kind to me, I assume they want something.
EVIT7	I'd rather enjoy friendships at work than get lost in the task and forget about everything else.
EVIT8	When I get too involved with my boss, I tend to lose myself.
EVIT9	My boss is not honest or trustworthy.
EVIT10	I don't like spending too much time with my colleagues or boss; they create too much internal chaos for me.
EVIT11	Many times, at work, I don't know who I can trust.
EVIT12	When I'm under stress, I usually keep it to myself. Still, I don't understand why my coworkers act so aggressively toward me when I try not to show my anger.
EVIT13	I tend to keep my distance from both colleagues and supervisors.
EVIT14	I go to work to do my job, not to make friends.
EVIT15	I try to manage stress at work, even if I bottle it up inside. I feel like nobody really cares.
EVIT16	I often feel deep down that I 'don't matter' at the company.
EVIT17	Deep inside, I believe I don't have the right to exist in this company.
EVIT18	I think my colleagues and boss are overly demanding.
EVIT19	I generally interact with my coworkers by avoiding them.
ANS_AMB1	Most of the time, I find my colleagues difficult and hard to understand.
ANS_AMB2	When I'm with my colleagues, everything seems to work out.
ANS_AMB3	When my coworkers push too hard during conflicts, I usually ignore them and reject what they say.
ANS_AMB4	When I have a doubt at work, I ask my colleagues right away instead of figuring it out on my own.
ANS_AMB5	I don't understand why my coworkers don't invite me when they go out for breakfast.
ANS_AMB6	I usually love connecting with my coworkers, but sometimes I feel like I lose myself and don't know where they end and I begin.
ANS_AMB7	I feel great when a colleague has a problem and comes to me for help.
ANS_AMB8	I usually don't like it when my coworkers pull away from me. When that happens, I feel awful, like I can't breathe.
ANS_AMB9	It really bothers me when my coworkers don't think of me for work or even for a coffee break.

(*Continued*)

Table 1. (*Continued.*)

Code	Item
ANS_AMB10	I often focus so much on what's going on with my coworkers that I have no time left for myself.
ANS_AMB11	When my coworkers are close, I feel truly happy. I put myself in their shoes, and together we do better work.
ANS_AMB12	I feel a lot of anger and fear when things at work don't go the way I want.
ANS_AMB13	When I get too involved with a coworker, I tend to lose myself.

Source: Authors' own work.

and increased risk of burnout (Warnock et al., 2024; Westover, 2024), underscoring the importance of identifying and addressing these patterns within the workplace (ANS_AMB1, ANS_AMB3, ANS_AMB5, ANS_AMB6. ANS_AMB8-ANS_AMB10, ANS_AMB12, and ANS_AMB13) (see Table 1).

Psychometric instruments: validation and reliability

Validity and reliability concern how we interpret the scores produced by psychometric instruments in educational research (Cook & Beckman, 2006). Most approaches to judging validity come from psychological and educational-assessment theory (Messick, 1989). The Standards for Educational and Psychological Testing define validity as "the degree to which evidence and theory support the interpretations of test scores for the proposed uses of tests" (APA. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999; Borsboom, Mellenbergh & van Heerden, 2004). In other words, validity is not an inherent trait of a test itself but of the meaning we give its scores and the inferences we draw from them (Cook & Beckman, 2006). Messick (1989) describes five sources of validity evidence:

- Content: We compare the test's content with the construct that it is meant to measure (APA. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999).
- Response process: By examining what test-takers think and do while answering, we check whether their behavior matches the construct (APA. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999).
- Internal structure: Tools such as reliability estimates and factor analysis tell us whether the items group together as expected (Floyd & Widaman, 1995; Sellbom & Tellegen, 2019; Shrestha, 2021).
- Relations to other variables: Scores should relate in predictable ways to scores from established instruments that assess similar constructs.
- Consequences: We evaluate the intended and unintended effects of using the test, looking for any sources of invalidity (Abeele, Spiel, Nacke, Johnson & Gerling, 2020).

Reliability is essential, though on its own it does not guarantee validity (Sürücü & Maslakci, 2020). Reliability describes how consistently an instrument produces scores across occasions (APA. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999). Without consistent scores, meaningful interpretation is impossible (Cook & Beckman, 2006). Common reliability estimates include internal consistency, measured by Cronbach's alpha (Cronbach, 1951); inter-rater agreement, measured by phi coefficient, weighted kappa, and Kendall's tau (Nunnally & Bernstein, 1994); and test–retest stability for scores over time (Noble, Scheinost & Constable, 2021).

High internal consistency suggests the items tap a single construct; low consistency signals that more than one construct may be involved (Cook & Beckman, 2006). For practical examples of scale

validation, see Villena-Martínez et al. (2024); Zurita Ortega, Martinez Martinez, Chacon Cuberos and Ubago Jiménez (2019); Moguerza, Fernández-Muñoz, Redchuk, Cardone-Riportella and Navarro-Pardo (2017) and Moret- Tatay *et al.* (Moret-Tatay, Fernández Muñoz, Civera Mollá, Navarro-Pardo & Alcover de la Hera, 2015).

Methodology and instruments

The questionnaire is based on Bowlby's theory, adapted by the authors to the workplace context. It considers two types of attachment: secure attachment and insecure attachment. Moreover, within the broader category of insecure attachment, two distinct subtypes can be identified: insecure avoidant and anxious-ambivalent attachment, as applied to organizational settings (Feeney & Noller, 1996). In this context, attachment refers to the emotional and relational bonds individuals develop with their coworkers, supervisors, and organizational leaders, drawing from Bowlby's theoretical framework.

The questionnaire consists of 38 items, grouped according to the three different attachment styles mentioned above (Table 1). The first factor includes aspects related to secure attachment in the workplace. The second factor covers items that reflect patterns of insecure avoidant attachment. The third factor focuses on issues related to insecure anxious-ambivalent attachment.

All items were rated on a Likert scale from 1 to 6, where 1 means strongly disagree and 6 means strongly agree. The questions that show significance through the EFA for each attachment style are:

1. Secure attachment: SEG2, SEG3, SEG 4, and SEG6.
2. Insecure avoidant attachment: EVIT2, EVIT5, EVIT6, EVIT8, EVIT9, EVIT10, EVIT11, EVIT12, EVIT13, EVIT16, EVIT17, and EVIT19.
3. Insecure anxious-ambivalent attachment: ANS_AMB1, ANS_AMB3, ANS_AMB5, ANS_AMB6, ANS_AMB8, ANS_AMB9, ANS_AMB10, ANS_AMB12, and ANS_AMB13.

Experiment design

The data for the study were collected through non-probabilistic horizontal network sampling (Geddes, Parker & Scott, 2018), conducted via the social network LinkedIn. The sample targeted a population consisting of company executives, middle managers, and qualified professionals, who voluntarily completed an online questionnaire hosted on Microsoft Forms and accessed through a QR code. The questionnaire took approximately 15 minutes to complete.

It included screening questions to ensure that respondents were members of the target population. Additionally, it provided a link to an informed consent document outlining the study's purpose and characteristics, along with clear instructions on how to withdraw from participation at any time. The study received approval from the institution's Research Ethics Committee.

Participants

A total of 238 responses were obtained from professionals across various organizational levels. The respondents represented a wide range of industry sectors and company sizes, including small and medium-sized enterprises, family-owned businesses, and large corporations. Based on the screening questions, the data set was filtered, resulting in a final valid sample of 204 individuals. The adequacy of a sample size of approximately 200 participants for psychometric validation studies has been consistently addressed in methodological literature. Classical guidelines classify 200 cases as a "fair to good" sample size for factor analysis (Comrey & Lee, 1992), while simulation studies emphasize that adequacy depends more on model complexity, item communalities, and the magnitude of factor loadings than on absolute size alone (MacCallum, Widaman, Zhang & Hong, 1999). In the context of structural equation modeling, Kline (2016) and Byrne (2013), suggest that 200 cases are often considered the practical minimum for CFA, particularly when models are not excessively complex. Recent empirical research supports these methodological recommendations (Goni et al., 2020; Kiani, Pezeshkian,

Table 2. Frequencies for gender

Gender	Frequency	Percent	Valid percent	Cumulative percent
Male	134	65.686	65.686	65.686
Female	70	34.314	34.314	100.000
Total	204	100.000		

Source: Authors' own work.

Table 3. Frequencies for Age_I

Age_I	Frequency	Percent	Valid percent	Cumulative percent
Younger than 25 yo	40	19.608	19.608	19.608
Between 25 and 35 yo	30	14.706	14.706	34.314
Between 35 and 45 yo	44	21.569	21.569	55.882
Between 45 and 55 yo	62	30.392	30.392	86.275
Older than 55 yo	28	13.725	13.725	100.000
Total	204	100.000		

Source: Authors' own work.

Table 4. Descriptive statistics for age

	Age
Valid	204
Mean	41.113
Std. deviation	13.275
Coefficient of variation	0.323
IQR	24.000
Skewness	−0.011
Std. error of skewness	0.170

Source: Authors' own work.

Bakhshandeh & Khakbazan, 2025; Sharif-Nia et al., 2024). Consequently, a sample of 204 participants does not compromise the robustness of either the EFA or the CFA, as it falls within both classical and contemporary methodological criteria, maintains an adequate subject-to-item ratio, and allows for stable estimation of factorial parameters (Tables 2–5).

As shown in the tables above, 65.68% of the respondents were male and 34.31% were female. This finding suggests that leadership positions, middle management roles, and qualified professional occupations, such as lawyers, economists, and others, continue to be predominantly held by men rather than women (Table 2).

Regarding the variable *Age* (Tables 3 and 4), all age ranges are well represented, with the highest frequency corresponding to the 45–55 age group, which accounts for 30.39% of the sample. Descriptive statistics for the age variable indicate that the average age of participants is 41.13 years, with a standard deviation of 13.27 years. Measures of skewness show that the distribution is slightly skewed to the left, although the skewness value is not statistically significant; therefore, we can assume the variable is approximately symmetric.

Table 5 presents descriptive statistics for the items analyzed in this study. The mean values are approximately 4 points, indicating a general tendency among respondents to agree with the statements rather than to disagree. When focusing on the coefficient of variation, it can be observed that the mean serves as a representative measure of the frequency distribution. Table 6 and the subsequent tables present the frequency distributions of all items included in the study. For variables expressed as

Table 5. Descriptive statistics

	95% confidence interval mean				
	Mean	Upper	Lower	Std. deviation	Coefficient of variation
SEG1	4.402	4.612	4.192	1.523	0.346
SEG2	3.034	3.286	2.783	1.820	0.600
SEG3	3.417	3.608	3.225	1.385	0.405
SEG4	3.118	3.347	2.888	1.663	0.533
SEG5	3.225	3.409	3.042	1.327	0.412
SEG6	3.250	3.464	3.036	1.548	0.476
EVIT1	3.681	3.878	3.485	1.425	0.387
EVIT2	4.113	4.391	3.836	2.005	0.488
EVIT3	3.603	3.810	3.395	1.503	0.417
EVIT4	3.475	3.660	3.291	1.333	0.384
EVIT5	4.029	4.289	3.770	1.878	0.466
EVIT6	3.828	4.077	3.580	1.802	0.471
EVIT7	3.426	3.635	3.218	1.508	0.440
EVIT8	3.990	4.237	3.743	1.789	0.448
EVIT9	3.745	4.022	3.468	2.006	0.536
EVIT10	3.798	4.047	3.549	1.798	0.473
EVIT11	3.843	4.079	3.607	1.709	0.445
EVIT12	3.819	4.047	3.591	1.652	0.433
EVIT13	3.770	3.991	3.548	1.607	0.426
EVIT14	3.250	3.448	3.052	1.432	0.441
EVIT15	3.478	3.668	3.288	1.373	0.395
EVIT16	4.069	4.341	3.796	1.974	0.485
EVIT17	4.207	4.505	3.909	2.152	0.511
EVIT18	3.716	3.908	3.523	1.392	0.375
EVIT19	4.054	4.323	3.785	1.943	0.479
ANS_AMB1	3.716	3.916	3.516	1.448	0.390
ANS_AMB2	3.373	3.535	3.211	1.174	0.348
ANS_AMB3	3.740	3.954	3.526	1.549	0.414
ANS_AMB4	3.510	3.706	3.314	1.419	0.404
ANS_AMB5	4.020	4.295	3.745	1.993	0.496
ANS_AMB6	3.926	4.140	3.712	1.545	0.393
ANS_AMB7	3.015	3.271	2.758	1.858	0.616
ANS_AMB8	3.902	4.113	3.691	1.528	0.392
ANS_AMB9	3.853	4.071	3.635	1.581	0.410
ANS_AMB10	3.858	4.099	3.617	1.746	0.453
ANS_AMB11	3.309	3.510	3.108	1.455	0.440
ANS_AMB12	4.069	4.278	3.860	1.514	0.372
ANS_AMB13	3.961	4.199	3.722	1.727	0.436

Source: Authors' own work.

Table 6. Frequentist scale reliability statistics

Estimate	McDonald's ω	Cronbach's α
Point estimate	0.958	0.921
95% CI lower bound	0.950	0.911
95% CI upper bound	0.966	0.931

Note: Of the observations, pairwise complete cases were used. The following items correlated negatively with the scale: SEG2, SEG3, SEG4, and SEG6.
Source: Authors' own work.

reverse-coded items, responses have been transformed to align with the overall response trend of the sample. Reverse-coded items were included to control for response bias. These items were recoded so that higher values consistently reflect greater agreement with the underlying construct (İlhan, Güler, Taşdelen Teker & Ergenekon, 2024).

Data analysis

Data were examined in JASP (v 0.17.2.1) by means of both exploratory (EFA) and CFA following Villena-Martínez et al. (2024) and Moguerza et al. (2017). Before running the EFA, multivariate normality, linearity, and inter-item correlation were inspected in line with the recommendations of Tabachnick and Fidell (1989). Factors were extracted with oblimin rotation; only components whose eigenvalues exceeded 1 were retained (Corner, 2009). The dimensionality of the scale was gauged both through hypothesis-driven reasoning and Horn's parallel analysis (Horn, 1965; Lloret-Segura, Ferreres-Traver, Hernández-Baeza & Tomás-Marco, 2014). Internal consistency was quantified with Cronbach's α, item-total correlations, the Kaiser–Meyer–Olkin index, and Bartlett's test of sphericity (Kaiser, 1974). Missing data were handled using pairwise deletion, and outliers were inspected using standardized z-scores and Mahalanobis distance (Kline, 2016). No extreme cases required exclusion. Normality and linearity assumptions were verified following Lloret-Segura et al. (2014).

Subsequently, CFA was conducted to verify the structure uncovered by the EFA and to appraise model fit. Several complementary indices were considered: the chi-square statistic (La Du & Tanaka, 1989); the goodness-of-fit index, with 0.90 as the conventional lower bound for adequacy (Hu & Bentler, 1999); the root-mean-square residual, where values approaching 0 – particularly $\leq$0.08 – indicate better fit (Jöreskog & Sörbom, 1979); the Comparative Fit Index (CFI) and the Incremental Fit Index, both expected to reach at least 0.90 (Bentler, 1990); and, as a parsimony index, the root-mean-square error of approximation (RMSEA), for which lower values closer to 0 signal superior parsimony (Steiger, 2000). Average variance extracted, as a measure of convergent and discriminant validity, and the Heterotrait–Monotrait Ratio, as a measure of discriminant validity, were computed for CFA (Karakaya & Yıldırım, 2025; Kaynak, Tüzün & Demir, 2021).

Exploratory factor analysis

Internal consistency

The proposed scale demonstrated strong internal consistency, with a Cronbach's alpha coefficient of $\alpha = 0.939$ and $\omega = 0.96$, compared to $\alpha = 0.83$ reported by Scrima et al. (2015) and $\alpha = 0.65$ reported by (Hite & McDonald, 2020; Lisá & Mrázková, 20212021) ω between 0.8 and 0.92 for Andrade and Pedruzzi (De Andrade & Pedruzzi, 2020). The total variance explained by one factor analysis was 56.2% for secure attachment, 73% for insecure avoidant attachment, and 54.6% for insecure anxious-ambivalent attachment. Item-level analysis showed that Cronbach's alpha remained stable between 0.953 and 0.964 across all cases when individual items were removed, suggesting no single item disproportionately influenced internal consistency (Tables 6 and 7).

To assess the equality of multivariate means, both Friedman's ANOVA (Analysis of Variance) and Hotelling's T^2 test were employed, revealing statistically significant differences (Carey, Sheehan,

Table 7. Frequentist individual item reliability statistics

	If item dropped	
Item	McDonald's ω	Cronbach's α
SEG2	0.964	0.939
SEG3	0.962	0.932
SEG4	0.963	0.937
SEG6	0.963	0.934
EVIT2	0.952	0.912
EVIT5	0.952	0.912
EVIT6	0.954	0.913
EVIT8	0.953	0.913
EVIT9	0.954	0.913
EVIT10	0.953	0.912
EVIT11	0.955	0.914
EVIT12	0.956	0.915
EVIT13	0.956	0.916
EVIT16	0.953	0.912
EVIT17	0.953	0.913
EVIT19	0.953	0.913
ANS_AMB1	0.956	0.916
ANS_AMB3	0.956	0.916
ANS_AMB5	0.955	0.914
ANS_AMB6	0.956	0.916
ANS_AMB8	0.957	0.917
ANS_AMB9	0.958	0.919
ANS_AMB10	0.954	0.914
ANS_AMB12	0.957	0.917
ANS_AMB13	0.953	0.912

Source: Authors' own work.

Healy, Knott & Kinsella, 2022; Göktuna, Arslan & Özden, 2022). Descriptive statistics, as seen in Table 5, for each item, including measures of central tendency and dispersion, as well as skewness and kurtosis, were carried out. These indices were within acceptable limits, supporting the assumption of approximate normality. The distribution of item responses showed moderate symmetry. Regarding kurtosis, most items exhibited a leptokurtic pattern, indicating a higher-than-normal concentration of scores around the mean. This pattern suggests that participant responses were relatively consistent, clustering near central values rather than being widely dispersed.

To evaluate the suitability of conducting an EFA, Bartlett's test of sphericity yielded a highly significant result (see tables below) and the Kaiser–Meyer–Olkin measure of sampling adequacy was greater than 0.82. As shown in Table 9, the *p*-value obtained from Bartlett's test was well below the conventional alpha level of 0.05, confirming that the correlation matrix is appropriate for factor extraction. The high Kaiser–Meyer–Olkin value, exceeding the 0.75 threshold, further supports the adequacy of the data for factor analysis.

Following this verification, principal component analysis was performed. To allow for correlated latent constructs and improve factor interpretability, an oblimin rotation was applied (Luo, Arizmendi

& Gates, 2019). The number of factors retained was determined based on the eigenvalue-greater-than-one criterion (Moguerza et al., 2017) and further substantiated through parallel analysis (Horn, 1965), which helped identify the number of factors that explained a statistically meaningful portion of the variance.

The EFA has confirmed the existence of one main factor for each type of attachment, whose factor loadings are shown in the tables below, according to criteria set. The variables have been associated with each of the dimensions and factors according to the criterion of having the highest factor load in a significant way and not distributed among the rest of the dimensions. In those cases where the factor load could not be assigned a certain dimension, because it was shared between several factors, the item for the validation of the scale was not considered (Tables 8–18).

Secure attachment

Tables 8–11

Table 8. Secure attachment

Kaiser–Meyer–Olkin test	
	MSA
Overall MSA	0.785
SEG2	0.738
SEG4	0.737
SEG3	0.868
SEG6	0.863

Source: Authors' own work.

Table 9. Bartlett's test

Bartlett's test		
X^2	df	*p*
316.422	6.000	<.001

Source: Authors' own work.

Table 10. Factor loadings (structure matrix)

Factor loadings (structure matrix)	
	Factor 1
SEG2	0.841
SEG4	0.849
SEG3	0.629
SEG6	0.653

Applied rotation method is oblimin.
Source: Authors' own work.

Table 11. Additional fit indices

Additional fit indices					
RMSEA	RMSEA 90% confidence interval	SRMR	TLI	CFI	BIC
0.000	0–0.134	0.013	1.002	1.000	−8.870

Source: Authors' own work.

Table 12. Insecure avoidant attachment

Kaiser–Meyer–Olkin test	MSA
Overall MSA	0.965
EVIT2	0.955
EVIT5	0.950
EVIT6	0.967
EVIT8	0.976
EVIT9	0.974
EVIT10	0.958
EVIT11	0.959
EVIT12	0.977
EVIT13	0.980
EVIT16	0.973
EVIT17	0.970
EVIT19	0.957

Source: Authors' own work.

Table 13. Bartlett's test

X^2	df	*p*
2750.493	66.000	<.001

Source: Authors' own work.

Table 14. Factor loadings (structure matrix)

	Factor 1
EVIT2	0.926
EVIT5	0.938
EVIT6	0.867
EVIT8	0.878
EVIT9	0.820
EVIT10	0.917
EVIT11	0.807
EVIT12	0.708
EVIT13	0.718
EVIT17	0.847
EVIT19	0.898
EVIT16	0.891

Note: Applied rotation method is oblimin.
Source: Authors' own work.

Insecure avoidant attachment
Tables 12–15

Insecure anxious-ambivalent attachment
Tables 16–19

Table 15. Additional fit indices

RMSEA	RMSEA 90% confidence interval	SRMR	TLI	CFI	BIC
0.096	0.079–0.114	0.027	0.954	0.962	−131.711

Source: Authors' own work.

Table 16. Kaiser–Meyer–Olkin test

	MSA
Overall MSA	0.919
ANS_AMB1	0.932
ANS_AMB3	0.931
ANS_AMB5	0.913
ANS_AMB6	0.936
ANS_AMB8	0.900
ANS_AMB9	0.896
ANS_AMB10	0.933
ANS_AMB12	0.951
ANS_AMB13	0.893

Source: Authors' own work.

Table 17. Bartlett's test

X^2	df	*p*
1080.059	36.000	<.001

Source: Authors' own work.

Table 18. Factor loadings (structure matrix)

	Factor 1
	0.664
ANS_AMB3	0.660
ANS_AMB5	0.808
ANS_AMB6	0.706
ANS_AMB8	0.707
ANS_AMB9	0.610
ANS_AMB10	0.845
ANS_AMB12	0.675
ANS_AMB13	0.917

Note: Applied rotation method is oblimin.
Source: Authors' own work.

Table 19. Additional fit indices

RMSEA	RMSEA 90% confidence interval	SRMR	TLI	CFI	BIC
0.095	0.071–0.121	0.046	0.936	0.952	−66.928

Source: Authors' own work.

Table 20. Chi-square test

Model	X^2	df	*p*
Baseline model	5270.627	300	
Factor model	601.903	272	<.001

Source: Authors' own work.

Table 21. Fit indices

Index	Value
Comparative Fit Index (CFI)	0.954
Tucker–Lewis Index (TLI)	0.927
Bentler–Bonett Non-normed Fit Index (NNFI)	0.927
Bentler–Bonett Normed Fit Index (NFI)	0.886
Parsimony Normed Fit Index (PNFI)	0.803
Bollen's Relative Fit Index (RFI)	0.874
Bollen's Incremental Fit Index (IFI)	0.934
Relative Noncentrality Index (RNI)	0.934

Source: Authors' own work.

Confirmatory factor analysis

In the context of CFA, incremental fit indices assess how well the proposed model improves upon a baseline or null model, typically one that assumes no relationships among observed variables (McNeish *et al.*, 2018; Jordan-Muiños, 2021). Common indices in this category include the CFI, the goodness-of-fit index, and the Tucker–Lewis Index. A CFI value of 0.95 or higher is generally considered indicative of a well-fitting model (Lai, 2021). For goodness-of-fit index, recommended cut-off values depend on sample size: values above 0.89 are acceptable for samples around 100 participants, while values above 0.93 are suggested for larger samples (Cho, Hwang, Sarstedt & Ringle, 2020). The Tucker–Lewis Index, likewise, should exceed 0.90 to reflect satisfactory model fit (Xia & Yang, 2019).

Regarding absolute fit indices, the RMSEA provides an estimate of model fit adjusted for complexity. Values less than or equal to 0.06 suggest a good fit to the data (Lai, 2021). The standardized root mean square residual is also widely used, with recommended thresholds of <0.09 for small samples (≤ 100) and < 0.08 for larger ones (Cho et al., 2020).

The chi-square statistic (χ^2) remains a traditional measure of model fit. A statistically significant χ^2 ($p < .05$) typically indicates poor fit; however, it is well documented that χ^2 is highly sensitive to sample size (Walker & Smith, 2017). Consequently, researchers often rely on the ratio of χ^2 to degrees of freedom (χ^2/df), with values below 3 generally considered acceptable (Wheaton, Muthen, Alwin & Summers, 1977).

Notably, Rigdon (1996) emphasized conceptual limitations in the use of CFI, particularly its reliance on a baseline model, suggesting that CFI may be more suitable for exploratory contexts, whereas RMSEA is better aligned with confirmatory purposes. Furthermore, while CFI incorporates a parsimony adjustment, the correction embedded in RMSEA has been questioned for its adequacy. Thus, careful interpretation of model fit should involve multiple indices and consider sample size and theoretical grounding.

Model fit

Tables 20–25

Parameter estimates

Tables 26–28

Table 22. Information criteria

	Value
Log-likelihood	−7654.848
Number of free parameters	78.000
Akaike (AIC)	15,465.697
Bayesian (BIC)	15,724.510
Sample-size adjusted Bayesian (SSABIC)	15,477.383

Source: Authors' own work.

Table 23. Other fit measures

Metric	Value
Root mean square error of approximation (RMSEA)	0.077
RMSEA 90% CI lower bound	0.069
RMSEA 90% CI upper bound	0.085
RMSEA *p*-value	1.499×10^{-7}
Standardized root mean square residual (SRMR)	0.041
Hoelter's critical *N* ($\alpha = 0.05$)	106.564
Hoelter's critical *N* ($\alpha = 0.01$)	112.568
Goodness of fit index (GFI)	0.971
McDonald fit index (MFI)	0.445
Expected cross-validation index (ECVI)	3.715

Source: Authors' own work.

As shown in Table 20, the goodness-of-fit indices associated with the EFA fall within the thresholds typically considered acceptable in the literature, indicating that the model provides an adequate representation of the underlying structure in the sample data.

Tables 22 and 23 present the results of the CFA, including several incremental fit indices. Most of the fit statistics, like CFI, chi-square, and RMSEA, fall within the recommended thresholds reported in previous studies. The χ^2/df ratio (601.9/272 = 2.21) is below the commonly accepted cutoff of 3, indicating an acceptable model fit. Nonetheless, it is important to contextualize these findings: as Rigdon (1996) notes, RMSEA is generally regarded as a more reliable indicator of model adequacy in confirmatory contexts, particularly when contrasted with the CFI. Additionally, the chi-square statistics are known to be overly sensitive to large sample sizes, frequently leading to the rejection of acceptable models due to their tendency to detect trivial misfit (Wheaton et al., 1977). Average variance extracted, as a measure of convergent and discriminant validity, and the Heterotrait–Monotrait Ratio, as a measure of discriminant validity, were computed for CFA, showing good values ($AVE \geqslant 0.5\, and\, HTMT \leqslant 0.9$) (Tables 28 and 29). Factor covariances show the appropriate correlation (Table 27).

Turning to the item-level parameter estimates (Table 26), all standardized loadings were positive and statistically significant. In most cases, the estimated parameters reached values of 1.0 or higher, suggesting that these items contribute substantially and positively to their respective latent dimensions.

Reliability

When examining the reliability of each construct individually, as assessed through both omega (ω) and Cronbach's alpha coefficients, all factors exhibit reliability estimates within acceptable thresholds, as commonly cited in the literature. The overall reliability of the instrument is strong, with global

Table 24. Kaiser–Meyer–Olkin (KMO) test

Indicator	MSA
SEG2	0.977
SEG3	0.951
SEG4	0.972
SEG6	0.976
EVIT2	0.975
EVIT5	0.964
EVIT6	0.969
EVIT8	0.968
EVIT9	0.976
EVIT10	0.968
EVIT11	0.964
EVIT12	0.974
EVIT13	0.974
EVIT16	0.983
EVIT17	0.978
EVIT19	0.964
ANS_AMB1	0.954
ANS_AMB3	0.973
ANS_AMB5	0.972
ANS_AMB6	0.963
ANS_AMB8	0.955
ANS_AMB9	0.894
ANS_AMB10	0.983
ANS_AMB12	0.971
ANS_AMB13	0.975
Overall	0.969

Source: Authors' own work.

Table 25. Bartlett's test of sphericity

X^2	df	*p*
5018.282	300	<0.001

Source: Authors' own work.

indices falling well within recommended standards. This suggests that, at the scale level, the instrument performs reliably and aligns with psychometric expectations reported in prior research (see Tables 30 and 31).

Validity

To evaluate the internal validity of the proposed scale, procedures were implemented at the levels of content, criterion, and construct validity.

Content validity was established through expert review. The initial version of the instrument was submitted to a panel of specialists in business organizations and managers, who provided structured

Table 26. Factor loadings

						95% confidence interval	
Factor	Indicator	Estimate	Std. Error	*z*-value	*p*	Lower	Upper
Factor 1	SEG2	1.557	0.104	14.979	<.001	1.353	1.761
	SEG3	0.829	0.091	9.134	<.001	0.651	1.007
	SEG4	1.396	0.096	14.539	<.001	1.208	1.584
	SEG6	1.023	0.099	10.387	<.001	0.830	1.216
Factor 2	EVIT2	1.858	0.106	17.594	<.001	1.651	2.065
	EVIT5	1.744	0.099	17.613	<.001	1.550	1.938
	EVIT6	1.552	0.100	15.507	<.001	1.356	1.749
	EVIT8	1.580	0.098	16.141	<.001	1.388	1.772
	EVIT9	1.641	0.115	14.300	<.001	1.416	1.866
	EVIT10	1.624	0.097	16.677	<.001	1.433	1.815
	EVIT11	1.359	0.099	13.695	<.001	1.164	1.553
	EVIT12	1.173	0.100	11.678	<.001	0.976	1.370
	EVIT13	1.140	0.098	11.674	<.001	0.949	1.332
	EVIT16	1.768	0.107	16.543	<.001	1.559	1.978
	EVIT17	1.847	0.121	15.320	<.001	1.611	2.084
	EVIT19	1.763	0.105	16.772	<.001	1.557	1.968
Factor 3	ANS_AMB1	1.008	0.089	11.298	<.001	0.834	1.183
	ANS_AMB3	1.069	0.096	11.158	<.001	0.882	1.257
	ANS_AMB5	1.612	0.115	13.967	<.001	1.385	1.838
	ANS_AMB6	1.080	0.096	11.271	<.001	0.892	1.267
	ANS_AMB8	0.994	0.096	10.321	<.001	0.805	1.183
	ANS_AMB9	0.858	0.104	8.249	<.001	0.654	1.061
	ANS_AMB10	1.472	0.099	14.899	<.001	1.279	1.666
	ANS_AMB12	0.965	0.096	10.073	<.001	0.777	1.153
	ANS_AMB13	1.621	0.091	17.856	<.001	1.443	1.798

Source: Authors' own work.

Table 27. Factor covariances

					95% confidence interval	
	Estimate	Std. error	*z*-value	*p*	Lower	Upper
Factor 1↔Factor 2	−0.936	0.017	−55.560	<.001	−0.969	−0.903
Factor 1↔Factor 3	−0.893	0.023	−38.467	<.001	−0.938	−0.847
Factor 2↔Factor 3	0.959	0.009	102.581	<.001	0.940	0.977

Source: Authors' own work.

feedback. Based on their recommendations, several items were revised or adapted to better align with the theoretical and practical dimensions of the construct under investigation.

Table 28. Average variance extracted

Factor	AVE
Factor 1	0.591
Factor 2	0.743
Factor 3	0.559

Source: Authors' own work.

Table 29. Heterotrait–Monotrait ratio

Factor 1	Factor 2	Factor 3
1.000		
0.812	1.000	
0.839	0.841	1.000

Source: Authors' own work.

Table 30. Reliability

	Coefficient ω	Coefficient α
Factor 1	0.843	0.830
Factor 2	0.972	0.969
Factor 3	0.899	0.913
Total	0.953	0.922

Source: Authors' own work.

Criterion validity could not be assessed through direct comparison with an existing, equivalent instrument, as no closely aligned scale was administered concurrently. Currently, there is no workplace attachment scale (WAtS) that has been validated specifically for the Spanish population. Although interest in measuring emotional bonds within organizational settings has grown, available instruments have been developed and tested in other cultural contexts. One such example is the WAtS, originally designed and validated in Brazil by De Andrade and Pedruzzi (2020). This scale assesses secure, anxious, and avoidant attachment styles toward the workplace and has demonstrated strong psychometric properties in a sample of Brazilian workers. However, its applicability to the Spanish population remains untested, highlighting the need for cross-cultural validation or the development of contextually appropriate instruments. Model fit indices offer indirect support for criterion validity. For reference, De Andrade and Pedruzzi (2020) reported the following standardized fit indices for their motivation scale: AGFI = 0.94, CFI = 0.98, $\chi^2/df = 1.54$, and RMSEA = 0.04.

Construct validity was addressed through both exploratory and CFA, as outlined in previous sections. The instrument was intentionally designed with new formulations of items, adapted in wording and orientation to meet the specific aims of this study. As a result, direct comparisons with other existing tools were not deemed appropriate at this stage. However, future research is expected to involve cross-validation against other established instruments, once the current scale's psychometric structure has been consolidated.

Discussion

A substantial body of research has established the central role of attachment to the workplace (De Andrade & Pedruzzi, 2020). In the Spanish context, so far, no instrument has been formally validated to assess attachment within the workplace setting.

Table 31. Frequentist individual item reliability statistics

	If item dropped	
Item	McDonald's ω	Cronbach's α
SEG2	0.964	0.939
SEG3	0.962	0.932
SEG4	0.963	0.937
SEG6	0.963	0.934
EVIT2	0.952	0.912
EVIT5	0.952	0.912
EVIT6	0.954	0.913
EVIT8	0.953	0.913
EVIT9	0.954	0.913
EVIT10	0.953	0.912
EVIT11	0.955	0.914
EVIT12	0.956	0.915
EVIT13	0.956	0.916
EVIT16	0.953	0.912
EVIT17	0.953	0.913
EVIT19	0.953	0.913
ANS_AMB1	0.956	0.916
ANS_AMB3	0.956	0.916
ANS_AMB5	0.955	0.914
ANS_AMB6	0.956	0.916
ANS_AMB8	0.957	0.917
ANS_AMB9	0.958	0.919
ANS_AMB10	0.954	0.914
ANS_AMB12	0.957	0.917
ANS_AMB13	0.953	0.912

Source: Authors' own work.

Building on this foundation, the present study proposed a 38-item scale derived from Bowlby's attachment theory for attachment to organizational contexts. The aim was to evaluate the psychometric properties of the proposed scale in a workforce and managers population drawn from varied activity sectors, with a dual objective: on the one hand, the aim is to develop a scale capable of measuring attachment in the workplace, given the advantages this construct offers in organizational settings. On the other hand, the goal is to identify relational patterns between individuals' adult attachment styles and the type of attachment developed within the organization, which will serve as the basis for a future line of research.

The results demonstrate strong internal consistency, with a Cronbach's alpha greater than 0.95. Moreover, the model exhibited similar fit indices compared to those originally reported by Andrade and Pedruzzi (De Andrade & Pedruzzi, 2020) and Scrima *et al.* (2015; Scrima, 2020), according to current standards of model evaluation (see Section 4.4.). Factor analysis procedures, both exploratory (EFA) and confirmatory (CFA), yielded a final structure of one factor for each dimension.

In the EFA, items with factor loadings above 0.40 were retained, and factor retention was determined via parallel analysis (Horn, 1965). The Kaiser–Meyer–Olkin index and Bartlett's test of

sphericity supported the adequacy of the data set for factor analysis. In the CFA, all parameters associated with EFA-derived items were statistically significant ($p < .001$), providing evidence of convergent and discriminant validity. Most latent factors demonstrated positive intercorrelations between insecure attachment and both negative and secure attachment, as expected. The model proposed here thus offers a valuable framework for future research and practical interventions aimed at fostering workforce and managers' success. Studying attachment to the workplace is essential because attachment styles, originally developed in early relationships, deeply influence how individuals interact with colleagues, handle stress, and respond to feedback. Securely attached employees tend to build stronger relationships, show greater trust, and adapt better to organizational changes (Harms, 2011). In contrast, insecure attachment can lead to conflict, reduced collaboration, and lower job satisfaction (Richards & Schat, 2011).

A validated measure like the WAtS (Scrima et al., 2015), for Italian and for the Slovakian population (Greškovičová & Lisá, 2023), allows organizations to identify these patterns and tailor interventions that foster healthier team dynamics. This understanding can improve leadership development, team cohesion, and overall workplace well-being. However, the main motivation for proposing a new scale, rather than validating the one developed by Scrima et al. (2015) for the Spanish population, is the moderate reliability it has shown in the two populations where it has been tested (Italian Cronbach's alpha = 0.83 and Slovakian Cronbach's alpha = 0.65). Moreover, the scale proposed by Scrima *et al*. did not include any reported analysis of model fit indices. Lisá and Mrázková (20212021) scale for the Slovakian population showed acceptable fit indices (Table 32).

Beyond the statistical confirmation of the instrument's psychometric robustness, the implications of these findings suggest important avenues for practical implementation. Managers, Human Resources professionals, and organizational consultants can use the scale as a diagnostic tool to uncover latent relational patterns that may otherwise go unnoticed. By identifying employees with anxious or avoidant tendencies, organizations can implement targeted interventions – such as coaching, mentoring, or group facilitation – to support healthier interpersonal functioning. This is especially relevant in team-based or matrixed structures where collaboration, trust, and psychological safety are essential for high performance.

Another critical insight lies in the potential to use attachment profiling for leadership development. Leadership is increasingly understood as a relational process rather than a positional authority. Leaders with secure attachment styles are more likely to provide consistent emotional availability, respond to employee needs with empathy, and foster high-quality leader–member exchanges. Conversely, leaders with insecure styles may inadvertently contribute to climates of emotional uncertainty or detachment. Thus, integrating attachment awareness into leadership training could yield benefits not only for individual development but also for broader organizational climate and effectiveness.

Finally, the implications of this scale extend into the realm of organizational equity and inclusion. Attachment patterns are not distributed evenly across populations. Individuals from marginalized groups may develop distinct attachment strategies based on early experiences of exclusion or inconsistent support. By identifying these patterns in the workplace, organizations can implement more equitable support structures and design culturally sensitive interventions. Moreover, considering attachment in organizational diagnostics may help address deeper sources of disengagement, turnover, and conflict – issues that are often treated superficially without addressing the underlying emotional and relational roots.

Implications

Theoretical implications

This validated Attachment Scale in the workplace context provides a robust framework to explore how individuals emotionally and cognitively regulate themselves in response to work-related challenges, as well as how they form interpersonal relationships, whether with peers or superiors. Based

Table 32. Instruments for measuring attachment in organizational contexts

Instrument	Authors	Population	N	Number of items	Dimensions	Theoretical framework	Psychometric properties and limitations
Workplace Attachment Style Questionnaire (WASQ)	Scrima et al. (Scrima, /Scrima, 2020)	Employees in Italy (60% employees, 28% middle managers, and 12% executives).	226	15	Avoidant attachment to the work-place, secure attach-ment to the workplace, anxious attach-ment to the workplace.	Dimensional model by Bartholomew and Horowitz (1991).	Cronbach's alpha = 0.83 RMSEA: 1 factor = 0.14; 2 factors = 0.11; 3 factors = 0.06 Correlation among the three = 0.02 All participants were Caucasian Italians, so the results must be replicated with workers from other countries to ensure cross-cultural validation. The use of self-reported data raises the possibility of social desirability and intro-spection biases. The absence of behavioral measures and longitudinal designs restricts validity and prevents causal inferences about stability. Although the dimensional model is widely accepted within clinical psychology, its application in organizational contexts may prove more complex and abstract than the categorical model, which allows for more direct diagnoses and easier intervention design, avoiding ambiguity when translating these concepts into non-academic interven-tions. While the dimensional model provides greater statistical sensitivity, the categorical model offers higher interpretative reliability and greater validity, facilitating knowledge transfer from psychology to business settings.

(*Continued*)

Table 32. (*Continued.*)

Instrument	Authors	Population	N	Number of items	Dimensions	Theoretical framework	Psychometric properties and limitations
Workplace Attachment Scale (WAtS)	Andrade & Pedruzzi (De Andrade & Pedruzzi, 2020)	Employees in Brazil (job position or sector not specified).	225	29	Anxious-ambivalent attach-ment, secure attachment, and avoidant attachment in workplace relationships.	Bidimensional model by Brennan et al. (1998).	KMO = 0.80; Bartlett, χ^2 (325) = 4013.8; $p < .001$ Confirmatory Fit Indices: χ^2/df = 3.02; CFI = 0.92; TLI = 0.91; RMSEA = 0.09; 90% CI = 0.08–0.10 The study's generalizability is limited by its geographically restricted Brazilian sample and the scarcity of prior workplace-specific attachment measures, which hinders com-parisons with existing tools. Some expected relationships were not confirmed – for exam-ple, avoidant attachment in WAtS did not align with avoidant attachment in the ECR, and secure attachment showed no significant association with career adaptability – raising questions about how well certain constructs transfer to organizational contexts. Although the scale is valid, the authors stress the need for further research to examine links between workplace attachment and key outcomes such as job satisfaction, performance, health, and well-being. It is based on the dimensional model of attachment, which preserves score continuity but may reduce categorical clarity in distinguishing distinct attachment styles, thereby limiting its practical applicability in organizational environments. Additionally, the validation sample was predominantly young ($M = 24$), reducing generalizability to other cohorts.

(*Continued*)

Table 32. (*Continued.*)

Instrument	Authors	Population	N	Number of items	Dimensions	Theoretical framework	Psychometric properties and limitations
WASQ Slovak Adaptation	Greškovičová & Lisá (Lisá et al., 2021)	Slovak employees from various sectors (finance, business, education, etc.). In the confirmatory analysis, 14.6% were managers and 85.3% subordinates.	322	9	Work performance, insecure attachment at work, leader perception, and secure workplace attachment, romantic relationship attachment.	Dimensional model by Bartholomew and Horowitz (1991).	Cronbach's alpha = 0.65; KMO = 0.797; RMSEA: 1 factor = 0.170; 2 factors = 0.107; 3 factors = 0.052; Internal consistency = 0.75 This scale presents limitations like those of Scrima et al. (Scrima, 2020), as it is an adaptation of that instrument for the Slovakian population. Convenience sampling, cross-sectional collection, and self-reported instruments might result in distortion of the sample and the data collected. Being based on a dimensional model introduces diagnostic ambiguities which, while informative in individual contexts, hinder knowledge transfer to organizational settings. Its psychometric properties are noticeably weaker than the original version. It is noteworthy that later studies compared it with other adult attachment instruments such as the ECR-R; however, some participants considered it unsuitable for workplace contexts, potentially affecting response quality. Finally, no differentiation was observed between insecure attachment styles.

(*Continued*)

Table 32. (*Continued.*)

Instrument	Authors	Population	N	Number of items	Dimensions	Theoretical framework	Psychometric properties and limitations
Proposed Scale: Attachment Styles in Organizational Contexts Scale (ASOCS)	Authors	Spanish company managers and middle managers.	204	25	Secure attachment to the workplace, insecure attachment to the workplace, avoidant attachment to the workplace.	Categorical model by Bowlby (1988).	Cronbach's alpha = 0.939; Confirmatory Fit Indices: $\chi^2/df = 2.21$; CFI = 0.954; TLI = 0.972; RMSEA = 0.077 Data were collected through non-probabilistic LinkedIn-based sampling, which may introduce self-selection bias and limited generalizability across industries, professional levels, and educational backgrounds. The use of self-reported data raises the possibility of social desirability and introspection biases. The absence of behavioral measures and longitudinal designs restricts validity and prevents causal inferences about stability and impact of attachment styles over time. There is no concurrent validation with established workplace attachment tools and cross-validation in other cultural contexts. This study may not capture all nuanced forms of organizational attachment, especially in emerging contexts like hybrid or remote work.

Source: Authors' own work.

on Bowlby's foundational attachment theory (Bowlby, 1969), the scale helps extend developmental psychology into adult organizational contexts, offering new insights into emotional processes in the workplace (De Andrade & Pedruzzi, 2020). Attachment styles, secure, anxious-ambivalent, and avoidant, interact meaningfully with organizational constructs. By integrating attachment theory with frameworks such as the affective events theory (Weiss & Cropanzano, 1996) and the job demands-resources model (Bakker & Demerouti, 2013), researchers can better explain how relational schemas shape responses to emotional and cognitive job demands (Katz, Smith & Lopez, 2024). This study found that attachment styles significantly predict job performance, burnout, and organizational commitment. These effects were held even after accounting for the Big Five personality traits, highlighting the unique explanatory power of workplace attachment. However, predictive validity is an essential next step, ideally through longitudinal designs linking attachment styles to objective organizational outcomes.

Managerial implications

The Attachment scale has been psychometrically validated and identifies key relational styles, secure, anxious, and avoidant, across workplace contexts. Human resources professionals and managers can use it to assess how individuals relate to coworkers, leaders, and the organization (De Andrade & Pedruzzi, 2020; Greškovičová, 2023). Attachment styles are strongly linked to employee well-being. For instance, Vîrgă et al. (2019a) found that anxious attachment predicts emotional exhaustion, which in turn negatively impacts job performance and satisfaction. Identifying these patterns enables targeted retention strategies and helps prevent burnout. Knowing an employee's attachment orientation allows for more effective coaching, mentorship, and leadership development programs. Research shows that fostering secure attachment can enhance trust, collaboration, and adaptability, especially in times of organizational change (Greškovičová, 2023; Rioux, 2006).

Societal implications

Secure attachment in the workplace is associated with greater openness, trust, and cooperative dynamics. Organizations that recognize and support relational well-being tend to foster psychologically safe cultures that benefit both individuals and teams (Tziner & Sharoni, 2015). Attachment styles are predictive of burnout risk. Anxiously attached employees are more prone to emotional exhaustion and cynicism, which can affect not only individual well-being but also collective morale and organizational sustainability (Vîrgă et al., 2019b). Workplace attachment tools can reveal whether underrepresented groups (e.g., women, ethnic minorities, temporary staff) experience higher levels of anxious or avoidant attachment. This insight enables more equitable organizational practices, such as inclusive mentorship programs and bias prevention strategies (Greškovičová, 2023; Katz et al., 2024).

Conclusions and limitations

This study presents the development and psychometric validation of a culturally adapted instrument designed to measure adult attachment styles within Spanish organizational contexts. Drawing from Bowlby's attachment theory and incorporating insights from workplace psychology, the scale demonstrates strong internal consistency and construct validity. It effectively distinguishes between secure, avoidant, and anxious-ambivalent attachment styles, offering a valuable tool for both researchers and practitioners seeking to explore relational dynamics in the workplace.

Beyond its methodological contributions, the scale supports a shift in how organizations understand employee behavior – not merely as the result of skills or motivation, but as deeply shaped by emotional and relational patterns. Managers, HR professionals, and organizational consultants can use this instrument to identify attachment-related tendencies that influence trust, communication,

teamwork, and resilience. The insights generated by this tool can inform leadership development programs, team interventions, and organizational policies aimed at fostering psychological safety and emotional well-being at work.

Despite its contributions, this study has several limitations. First, data were collected through non-probabilistic LinkedIn-based sampling, which may have introduced self-selection bias and limited generalizability across industries, professional levels, and educational backgrounds. Second, the exclusive reliance on self-reported data raises the possibility of social desirability and introspection biases, while the absence of behavioral measures and longitudinal designs restricts ecological validity and prevents causal inferences about the stability and impact of attachment styles over time. Third, although the sample size was adequate for exploratory and CFA, as other studies have shown, it was not sufficient to conduct subgroup invariance testing or more complex structural modeling; the gender imbalance (65% male) further constrains representativeness. Fourth, while the scale demonstrated strong psychometric properties, concurrent validation with established workplace attachment tools and cross-validation in other cultural contexts were not undertaken, which limits external validity. Fifth, although designed to reflect workplace dynamics, the instrument may not capture all nuanced forms of organizational attachment, particularly in emerging contexts such as hybrid or remote work arrangements, diverse cultural environments, and different hierarchical structures. Finally, although reverse-coded items were included to reduce response bias, their presence may have increased cognitive load or confusion for some respondents. Importantly, item-level analyses (see Tables 7 and 31) indicated that internal consistency remained high (Cronbach's $\alpha > 0.90$; McDonald's $\omega > 0.95$) even when these items were removed, suggesting that their inclusion did not materially affect the psychometric robustness of the scale. Nevertheless, we recognize this as a potential limitation, and future refinements will test simplified or positively worded alternatives to preserve reliability while minimizing respondent burden.

Building on these limitations, several potential lines of inquiry for future research can be outlined. First, replication with larger and more demographically balanced samples is essential to allow subgroup analyses, invariance testing, and broader generalizability across industries, professional levels, and educational backgrounds. Second, longitudinal designs are needed to assess the stability of workplace attachment styles over time and to establish their predictive validity for key organizational outcomes such as job performance, burnout, turnover, and career development. Third, incorporating multi-method assessments, including peer and supervisor ratings, behavioral observations, and triangulation with objective indicators, would reduce reliance on self-reports and strengthen validity. Fourth, concurrent administration of established workplace attachment scales will provide stronger evidence of criterion validity, while cross-cultural studies in other Spanish-speaking and international contexts will clarify the instrument's broader applicability. Fifth, refinement of reverse-coded items and expansion of the item pool could help minimize respondent confusion and ensure coverage of emerging workplace realities such as remote or hybrid work arrangements, cultural diversity, and hierarchical variations. And, finally, the integration of both categorical and dimensional approaches to attachment may further enrich theoretical understanding while maintaining the practical utility of the scale in organizational contexts.

Summarizing, this study marks a step forward in bridging psychological theory and organizational practice. By providing a reliable and context-specific instrument to assess adult attachment styles in professional and workforce settings, it opens the door to more emotionally intelligent, inclusive, and human-centered organizational cultures. Such a tool is not only timely but essential in a world where relational capacity and emotional resilience are increasingly critical to individual and organizational success.

Data Availability Statement. The data collected will not be transferred without the express consent of the participants, except in cases where there is a legal obligation to do so. Personal data will be kept only for the duration of the project. Raw data that support the findings of this study are available upon reasonable request from the corresponding author, J.J.R.-G. The data are not publicly available due to restrictions from the Research Ethics Committee because they contain information that compromises the privacy of the participants in the research.

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Ethical Standards. The research work obtained the favorable consent of the Research Ethics Committee of the Rey Juan Carlos University. All participants were informed of the objective of the study, its scope and marked their consent on the form itself about their intention to participate. The data controller, the consent and purpose of the study, the communication of the data, the conservation of the data and the exercise of their rights of access, rectification, deletion, limitation of processing, opposition and others recognized by the General Data Protection Regulation, as well as by Organic Law 2/2018, were informed of Personal Data Protection and guarantee of Digital Rights. The personal data collected will not be transferred without the express consent of the participants, except in cases where there is a legal obligation to do so. Personal data will be kept only for the duration of the project.

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References

Abeele, V. V., Spiel, K., Nacke, L., Johnson, D., & Gerling, K. (2020). Development and validation of the player experience inventory: A scale to measure player experiences at the level of functional and psychosocial consequences. *International Journal of Human Computer Studies*, *135*, 102370.

Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Ammaniti, M., Van Ijzendoorn, M. H., Speranza, A., & Tambelli, R. (2000). Internal working models of attachment during late childhood and early adolescence: An exploration of stability and change. *Attachment & Human Development*, *2*(3), 328–346.

APA. American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Psychological Association.

Bakker, A. B., & Demerouti, E. (2013). La teoría de las demandas y los recursos laborales. *Revista de Psicología Del Trabajo Y de Las Organizaciones*, *29*(3), 107–115.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226–244. doi:10.1037/0022-3514.61.2.226

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238. doi:10.1037/0033-2909.107.2.238

Bessa, G., & Barbosa, B. (2025). Integrating Artificial Intelligence into scenario analysis: A validated framework for strategic planning under economic uncertainty. *Global Economics Research*, 100007. doi:10.1016/j.ecores.2025.100007

Borsboom, D., Mellenbergh, G. J., & van Heerden, J. (2004). The concept of validity. *Psychological Review*, *111*(4), 1061–1071. doi:10.1037/0033-295X.111.4.1061

Bowlby, J. (1969). *Attachment and loss: Attachment* (vol 1). London: Hogarth Press and the Institute of Psycho-Analysis. ISBN: 9780701203009.

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664–678. doi:10.1111/j.1939-0025.1982.tb01456.x

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books. ISBN 0-465-07597-5.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). *Self-Report Measurement of Adult Attachment: An Integrative Overview*. New York: Guilford Press.

Burns, T., & Stalker, G. M. (1961). *Mechanistic and organic systems*. London: Tavistock Publications.

Bushuyev, S., Piliuhina, K., & Chetin, E. (2023). Transformation of values of the high technology projects from a VUCA to a BANI environment model. *Innovative Technologies and Scientific Solutions for Industries*, *2*(24), 191–199.

Byrne, B. M. (2013). *Structural equation modeling with EQS: Basic concepts, applications, and programming*. New York: NY: Routledge.

Capra, F. (1982). The new vision of reality: Parallels between modern physics and eastern mysticism. *India International Centre Quarterly*, *9*(1), 13–21.
Capra, F., & Luisi, P. L. (2014). *The systems view of life: A unifying vision*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511895555
Carey, M., Sheehan, D., Healy, S., Knott, F., & Kinsella, S. (2022). The effects of a 16-week school-based exercise program on anxiety in children with autism spectrum disorder. *International Journal of Environmental Research and Public Health*, *19*(9), 5471. doi:10.3390/ijerph19095471
Cascio, J. (2020). *Facing the Age of Chaos*. Retrieved January 20, 2025, from https://medium.com/@cascio/facing-the-age-of-chaos-b00687b1f51d
Cho, G., Hwang, H., Sarstedt, M., & Ringle, C. M. (2020). Cutoff criteria for overall model fit indexes in generalized structured component analysis. *Journal of Marketing Analytics*, *8*(4), 189–202.
Collins, N. L. (1996). Working models of attachment: Implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology*, *71*(4), 810–832. doi:10.1037/0022-3514.71.4.810
Collins, N. L., & Allard, L. M. (2001). Cognitive representations of attachment: The content and function of working models. In G. J. O. Fletcher & M. S. Clark (Eds.), *Blackwell handbook of social psychology: Interpersonal processes* (60–85). Oxford: Blackwell.
Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale: NJ: Lawrence Erlbaum Associates.
Cook, D. A., & Beckman, T. J. (2006). Current concepts in validity and reliability for psychometric instruments: Theory and application. *The American Journal of Medicine*, *119*(2), 166–e7.
Corner, S. (2009). Choosing the right type of rotation in PCA and EFA. *JALT Testing & Evaluation SIG Newsletter*, *13*(3), 20–25.
Cronbach, L. (1951). Coefficient alpha and internal structure of tests. *Psychometrika*, *16*, 297–334. doi:10.1007/BF02310555
Crowell, J., & Owens, G. (1998). *Manual For The Current Relationship Interview And Scoring System. Version 4*. New York: State University of New York at Stony Brook.
Davidovitz, R., Mikulincer, M., Shaver, P. R., Izsak, R., & Popper, M. (2007). Leaders as attachment figures: Leaders' attachment orientations predict leadership-related mental representations and followers' performance and mental health. *Journal of Personality and Social Psychology*, *93*(4), 632–650. doi:10.1037/0022-3514.93.4.632
De Andrade, A. L., & Pedruzzi, P. F. (2020). Propriedades psicométricas da Escala de Apego ao Local de Trabalho (EALT). *Psicologia: Teoria E Prática*, *22*(1), 192–214. doi:10.5935/1980-6906/psicologia.v22n1p192-214
Feeney, J., & Noller, P. (1996). *Adult Attachment*. Thousand Oaks: Sage Academic Books. doi:10.4135/9781452243276
Feeney, J., Noller, P., & Hanrahan, M. (1994). Assessing adult attachment. In M. B. Sperling & W. H. Berman (Eds.), *Attachment in adults* (128–151). New York: The Guilford Press.
Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, *7*(3), 286–299. doi:10.1037/1040-3590.7.3.286
Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*(2), 350–365. doi:10.1037/0022-3514.78.2.350
Geddes, A., Parker, C., & Scott, S. (2018). When the snowball fails to roll and the use of 'horizontal'networking in qualitative social research. *International Journal of Social Research Methodology*, *21*(3), 347–358.
George, C., Kaplan, N., & Main, M. (1996). Adult Attachment Interview. Unpublished manuscript, Berkeley: CA: University of California.
Göktuna, G., Arslan, G. G., & Özden, D. (2022). Psychometric properties of the Turkish version of the attitudes toward massage (ATOM) scale. *European Journal of Integrative Medicine*, *55*, 102178. doi:10.1016/j.eujim.2022.102178
Goni, M., Naing, N. N., Hasan, H., Wan-Arfah, N., Deris, Z. Z., Nor Arifin, W., & Njaka, S. (2020). A confirmatory factor analysis of the knowledge, attitude and practice questionnaire towards prevention of respiratory tract infections during Hajj and Umrah. *BMC Public Health*, *20*, 1684. doi:10.1186/s12889-020-09756-5
Greškovičová, K. (2023). Relational attachment orientations and inclusive workplace climates. *Human Resource Development International*, *26*(1), 71–90. doi:10.1080/13678868.2022.2056789
Greškovičová, K., & Lisá, E. (2023). Beyond the global attachment model: Domain- and relationship-specific attachment models at work and their functions. *Frontiers in Psychology*, *14*, Article1158992. doi:10.3389/fpsyg.2023.1158992
Harms, P. D. (2011). Adult attachment styles in the workplace. *Human Resource Management Review*, *21*(4), 285–296. doi:10.1016/j.hrmr.2010.10.006
Haver, A., Akerjordet, K., & Furunes, T. (2013). Emotion regulation and its implications for leadership: An integrative review and future research agenda. *Journal of Leadership & Organizational Studies*, *20*(3), 287–303.
Hernández-Tamurejo, Á., González-Padilla, P., & Saiz-Sepúlveda, Á. (2025). The economics of AI adoption in OTAs: Market dynamics and future research. *Global Economics Research*, *1*(1), 100001. doi:10.1016/j.ecores.2025.100001
Hite, L. M., & McDonald, K. S. (2020). Careers after COVID-19: Challenges and changes. *Human Resource Development International*, *23*(4), .427–437.
Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, *30*, 179–185.
Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: a Multidisciplinary Journal*, *6*(1), 1–55. doi:10.1080/10705519909540118

İlhan, M., Güler, N., Taşdelen Teker, G., & Ergenekon, Ö. (2024). The effects of reverse items on psychometric properties and respondents' scale scores according to different item reversal strategies. *International Journal of Assessment Tools in Education*, *11*(1), 20–38.

Jordan-Muiños, F. (2021). Valor de corte de los índices de ajuste en el análisis factorial confirmatorio. *Psocial*, *7*(1), 66–71.

Jöreskog, K. G., & Sörbom, D. (1979). Advanced in factor analysis and stuctural. Equation Models. Cambridge: M.A.Abl.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36.

Karakaya, Ö., & Yıldırım, S. (2025). Adaptation of the self-directed online learning scale into Turkish: A validity and reliability study. *Educational Technology Research and Development*, *73*(1), 45–64. doi:10.1007/s11423-025-10123-y

Katz, I., Smith, J. A., & Lopez, C. D. (2024). Adult attachment styles and work outcomes: A global meta-analytic review. *Journal of Applied Psychology*, *109*(3), 345–372. doi:10.1037/apl.0000432

Kaynak, H., Tüzün, S., & Demir, A. (2021). Development and validation of a parental academic pressure scale for adolescents. *Current Psychology*, *40*(8), 3829–3842. doi:10.1007/s12144-019-00340-0

Kiani, Z., Pezeshkian, M., Bakhshandeh, E., & Khakbazan, Z. (2025). Design and psychometric properties of a tool to assess adherence to the code of ethics in midwifery (ACEM-42). *BMC Medical Ethics*, *26*, 12. doi:10.1186/s12910-025-01246-w

Kirrane, M., Yip, J. A., Ehrhardt, K., & Walker, D. O. (2019). The relationship between attachment style and creativity: The mediating roles of LMX and TMX. *Journal of Business and Psychology*, *34*(3), 365–379. doi:10.1007/s10869-018-9547-0

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York: NY: Guilford Press.

La Du, T. J., & Tanaka, J. S. (1989). Influence of sample size, estimation method, and model specification on goodness-of-fit assessments in structural equation models. *Journal of Applied Psychology*, *74*(4), 625.

Lai, K. (2021). Fit difference between nonnested models given categorical data: Measures and estimation. *Structural Equation Modeling: A Multidisciplinary Journal*, *28*(1), 99–120.

Lisá, E., Greškovičová, K., & Krizova, K. (2021). The perception of the leader as an attachment figure: Can it mediate the relationship between work engagement and general/citizenship performance? *BMC Psychology*. *9*:Article. 196. doi:10.1186/s40359-021-00700-9

Lisá, E., & Mrázková, K. (2021). The workplace attachment styles questionnaire in shortened 9-item version. In C. Pracana & M. Wang Eds., *Psychological applications and trends* 2021 (pp. 222–226). Lisboa: inScience Press. doi:10.36315/2021inpact051

Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: Una guía práctica, revisada y actualizada. *Anales de Psicología/annals of Psychology*, *30*(3), 1151–1169. doi:10.6018/analesps.30.3.199361

Luo, L., Arizmendi, C., & Gates, K. M. (2019). Exploratory factor analysis (EFA) programs in R. *Structural Equation Modeling: A Multidisciplinary Journal*, *26*(5), 819–826.

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, *4*(1), 84–99. doi:10.1037/1082-989X.4.1.84

Mammadov, S. (2022). Big Five personality traits and academic performance: A meta-analysis. *Journal of Personality*, *90*(2), 222–255.

Mayseless, O., & Popper, M. (2019). Attachment and leadership: Review and new insights. *Current Opinion in Psychology*, *25*, 157–161. doi:10.1016/j.copsyc.2018.04.001

McNeish, D., An, J., & Hancock, G. R. (2018). The thorny relation between measurement quality and fit index cutoffs in latent variable models. *Journal of Personality Assessment*, *100*(1), 43–52.

Meredith, P., Merson, K., & Strong, J. (2007). Differences in adult attachment style, career choice and career satisfaction for occupational therapy and commerce students. *British Journal of Occupational Therapy*, *70*(6), 235–242.

Messick, S. (1989). Meaning and values in test validation: The science and ethics of assessment. *Educational researcher*, *18*(2), 5–11.

Mikulincer, M., & Shaver, P. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships*, *12*(2), 149–168. doi:10.1111/j.1350-4126.2005.00108.x

Mikulincer, M., & Shaver, P. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford Press.

Moguerza, J. M., Fernández-Muñoz, J. J., Redchuk, A., Cardone-Riportella, C., & Navarro-Pardo, E. (2017). Factor structure and stability of a quality questionnaire within a postgraduate program. *Anales de Psicología/Annals of Psychology*, *33*(2), 351–355. doi:10.6018/analesps.33.2.256711

Morales-Vives, F., Ferre-Rey, G., & Ferrando, P. J. (2025). Can different adult attachment profiles be distinguished when categorical and dimensional approaches are combined? Evidence based on two questionnaires. *Current Psychology*. doi:10.1007/s12144-025-08223-x

Moret-Tatay, C., Fernández Muñoz, J. J., Civera Mollá, C., Navarro-Pardo, E., & Alcover de la Hera, C. M. (2015). Propiedades psicométricas y estructura factorial del BRCS en una muestra de personas mayores españolas. *Anales de Psicología/Annals of Psychol*, *31*(3), 1030–1034.

Morgan, G. (1998). *Images of organization* (Executive ed.). Thousand Oaks, CA: Sage Publications. ISBN 978-1576750384.

Moriano, J. A., Molero, F., Laguía, A., Mikulincer, M., & Shaver, P. R. (2021). Security providing leadership: A job resource to prevent employees' burnout. *International Journal of Environmental Research and Public Health*, *18*(4), 1719. doi:10.3390/ijerph18041719

Noble, S., Scheinost, D., & Constable, R. T. (2021). A guide to the measurement and interpretation of fMRI test-retest reliability. *Current Opinion in Behavioral Sciences*, *40*, 27–32.

Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* (3rd ed.). New York: MacGraw-Hill.

Ravitz, P., Maunder, R., Hunter, J., Sthankiya, B., & Lancee, W. (2010). Adult attachment measures: A 25-year review. *Journal of Psychosomatic Research*, *69*(4), 419–432. doi:10.1016/j.jpsychores.2009.08.006

Ren, Y., Topakas, A., & Patterson, M. (2024). Attachment and self regulation in the workplace: A theoretical integration. *Frontiers in Psychology*, *15*, Article1332010. doi:10.3389/fpsyg.2024.1332010

Richards, D. A., & Schat, A. C. (2011). Attachment at (not to) work: Applying attachment theory to explain individual behavior, organizations. *Journal of Applied Psychology*, *96*(1), 169–182. doi:10.1037/a0020379

Rigdon, E. E. (1996). CFI versus RMSEA: A comparison of two fit indexes for structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *3*(4), 369–379.

Rioux, S. M. (2006). Attachment and leadership: Applications in organizational contexts. *Leadership Quarterly*, *17*(5), 419–441. doi:10.1016/j.leaqua.2006.07.008

Rock, D., & Ringleb, A. H. (2009). *Coaching with the brain in mind: Foundations for practice*. New York, NY: Wiley.

Saura, J. R., & Bužinskienė, R. (2025). Behavioral economics, artificial intelligence and entrepreneurship: An updated framework for management. *International Entrepreneurship and Management Journal*, *21*(1), 1–33. doi:10.1007/s11365-025-01076-7

Scrima, F. (2020). The psychometric properties of the workplace attachment style questionnaire. *Current Psychology*, *39*, 2285–2292. doi:10.1007/s12144-018-9928-1

Scrima, F., Di Carlo, E., Lorito, L., & Palazzeschi, L. (2015). The workplace attachment style questionnaire (WASQ): A measure to assess styles of attachment to the workplace. *Journal of Work and Organizational Psychology*, *31*(3), 187–198.

Sellbom, M., & Tellegen, A. (2019). Factor analysis in psychological assessment research: Common pitfalls and recommendations. *Psychol Assessment*, 1428–1441. doi:10.1037/pas0000623

Sharif-Nia, H., Froelicher, E. S., Hoseinzadeh, E., Kaveh, O., Fatehi, R., & Nowrozi, P. (2024). Assessing the validity and reliability of the 10-item persian version of the perceived stress scale in post-surgery patients. *Frontiers in Psychiatry*, *15*, 1402122. doi:10.3389/fpsyt.2024.1402122

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, *9*(1), 4–11.

Siegel, D. (2010). *Mindsight: The new science of personal transformation*. New York: Random House.

Steiger, J. H. (2000). Point estimation, hypothesis testing, and interval estimation using the RMSEA: Some comments and a reply to Hayduk and Glaser. *Structural Equation Modeling*, *7*(2), 149–162. doi:10.1207/S15328007SEM0702_1

Sürücü, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*, 2694–2726. doi:10.15295/bmij.v8i3.1540

Sutil-Martín, D. L., & Rajas, M. (2022). Liderazgo, salud y transformación en entornos BANI: Hacia una ética organizacional cuántica. In E. A. R. Baños & L. Sutil Eds., *Transformación social y paradigmas en crisis* (153–167). Congreso Internacional de la Un. Transformación social y paradigmas en crisis (pp. 153-167). Málaga. Congreso Internacional de la Universidad de Málaga.

Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics*. New York: HarperCollinsPublishers.

Taylor, F. W. (1911). *The principles of scientific management*. New York: Harper & Brothers.

Tegtmeier, P., Weber, C., Sommer, S., Tisch, A., & Wischniewski, S. (2022). Criteria and guidelines for human-centered work design in a digitally transformed world of work: Findings from a formal consensus process. *International Journal of Environmental R*, *19*(23), 15506.

Tziner, A., & Sharoni, G. (2015). Attachment styles and organizational dynamics: The pathway through trust. *Journal of Managerial Psychology*, *30*(4), 415–432. doi:10.1108/JMP0920130312

U.S. Army War College. (1998). *Strategic leadership primer. Department of Command, Leadership, and Management*. Carlisle Barracks, PA.

Villena-Martínez, E. I., Rienda-Gómez, J. J., Sutil-Martín, D. L., & García-Muiña, F. E. (2024). Psychometric properties and factor structure of a motivation scale for higher education students to graduate and stimulate their entrepreneurship. *International Entrepreneurship and Management Journal*, *20*, 1879–1906. doi:10.1007/s11365-024-00948-8

Vîrgă, D., Iliescu, D., & Sava, F. A. (2019a). "Exploring the links between adult attachment, burnout dimensions, and job performance: An integrated framework. *European Journal of Work and Organizational Psychology*, *28*(5), 670–684. doi:10.1080/1359432X.2019.1599174

Vîrgă, D., Opre, A., & Popescu, A. (2023). Beyond the global attachment model: Domain- and relationship-specific attachment working models in organizational contexts. *Frontiers in Psychology*, 1158992.Article. doi:10.3389/fpsyg.2023.1158992.

Vîrgă, D., Schaufeli, W., Taris, T. W., van Beek, I., & Sulea, C. (2019b). Attachment styles and employee performance: The mediating role of burnout. *THE JOURNAL OF PSYCHOLOGY*, *153*(4), 383–401. doi:10.1080/00223980.2018.1542375

Walker, D. A., & Smith, T. J. (2017). Computing robust, bootstrap-adjusted fit indices for use with nonnormal data. *Measurement and Evaluation in Counseling and Development*, *50*(1-2), 131–137.

Warnock, J. E., Ju, D., & Katz, M. (2024). A meta-analysis of attachment at work. *Journal of Business and Psychology*. Advance online publication doi:10.1007/s10869-024-09938-y

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory. *Research in Organizational Behavior*, *18*(1), 1–74.

Westover, J. H. (2024). Exploring the positive impact of secure base leadership on employee commitment and well-being. *Journal of Innovation & Knowledge*, *9*(1), 1–9. doi:10.1016/j.jik.2024.100382

Wheatley, M. J. (2006). *Leadership and the new science: Discovering order in a chaotic world* (3rd ed.). San Francisco, CA: Berrett-Koehler Publishers.

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, *8*, 84–136.

Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in structural equation modeling with ordered categorical data: The story they tell depends on the estimation methods. *Behavior Research Methods*, *51*, 409–428.

Yip, J., Ehrhardt, K., Black, H., & Walker, D. O. (2018). Attachment theory at work: A review and directions for future research. *Journal of Organizational Behavior*, *39*(2), 185–198. doi:10.1002/job.2204

Zhang, R., & Greeven, M. (2020). Bottom up replaces top down: Implementing quantum management in the RenDanHeyi business model. En D. Zohar, Zero Distance: Management in the Quantum Age (cap. 5). Springer.

Zimmermann, P. (1999). Structure and functions of internal working models of attachment and their role for emotion regulation. *Attachment & Human Development*, *1*(3), 291–306.

Zohar, D. (2022). *Zero Distance: Management in the quantum age*. Zhejiang: University Press.

Zurita Ortega, F., Martinez Martinez, A., Chacon Cuberos, R., & Ubago Jiménez, J. L. (2019). Analysis of the psychometric properties of the motivation and strategies of learning questionnaire—short form (MSLQ-SF) in Spanish higher education students. *Social Science*, *8*(5), 132. doi:10.3390/socsci8050132

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