
Convergent validity of Workplace Attachment Style Questionnaire and Leader as Security Provider Scale in Slovak sample

Kristína Mrázková, Elena Lisá

*Institute of Applied Psychology, Faculty of Social and Economic Sciences
Comenius University, Slovakia*

mrazkova7@uniba.sk

✎ **ABSTRACT.** Questo studio ha indagato in un campione slovacco la validità convergente della versione ridotta del *Workplace Attachment Style Questionnaire* e della *Leader as Security Provider Scale*, verificandone la relazione con l'efficacia percepita della leadership e l'appartenenza all'organizzazione. Le caratteristiche base sicura e rifugio sicuro hanno mostrato una correlazione negativa con stili insicuri e una correlazione positiva con uno stile sicuro. Stili insicuri e stress da separazione hanno predetto l'appartenenza. La base sicura e il rifugio sicuro con uno stile ansioso hanno predetto l'efficacia percepita. Pur riguardando variabili simili sulla leadership o l'appartenenza i risultati indicano che WASQ e LASPP sono diversi tra loro.

✎ **SUMMARY.** We aimed to examine the convergent validity of the shortened version of the *Workplace Attachment Style Questionnaire* and the *Leader as Security Provider Scale* verifying the relationship of these scales with perceived leadership effectiveness and belonging to the organization in Slovak sample. The relationship between *Leader as Security Provider Scale* and *Workplace Attachment Style Questionnaire* confirmed a negative correlation between secure base and safe haven and insecure styles and positive correlations with a secure style. The insecure styles and separations distress predicted belonging to the organization. Secure base and safe haven and preoccupied style were predictors of the perceived effectiveness of the leader. The results suggest that although these two methodologies are related to similar variables dealing with leadership or belonging, they are unique. It is necessary to examine both constructs with other variables such as satisfaction, work engagement, or performance.

Keywords: *Workplace attachment, Leadership, Relationships in work*

INTRODUCTION

Attachment is widely studied construct rooted in the biological nature of humans. According to Bowlby (1969), children have the ingrained essence of seeking safety and comfort that affect the primary relationship person from the first days of our lives. The attachment constructs explain how individuals react in interactions with others concerning stress management (Mikulincer & Florian, 1995). Based on the care of the primary person in times of distress, individuals create internal working models of themselves and others that include individuals' feelings, opinions, or behaviors (Zimberoff & Hartman, 2002). If individuals have experienced adequate manifestations of the primary person, which has always been available, they developed a secure style of attachment (Hazan & Shaver, 1990). Conversely, inadequate immediate responses and lack of availability are associated with preoccupied or dismissive attachments (Hazan & Shaver, 1990).

The attachment studies primarily focused on the emotional journey between mother and child (Bowlby, 2010). Over time, the field of research has shifted to the transfer of a relationship from childhood to adulthood and close relationships (Hazan & Shaver, 1994). Subsequently, the attachment process extended to various objects such as animals (Crawford, Worsham & Swinehart, 2006; Pralong, 2004), intangible objects (Fournier, 1998; Lacœuilhe, 2000), places (Lewicka, 2010; Scannell & Gifford, 2010; Scrima, di Stefano, Guarnaccia & Lorito, 2015; Scrima, Moffat & Rioux, 2015; Scrima, Moffat & Rioux, 2016) or tangible objects in the workplace (Rioux, 2017). Today, we have several studies and scientific data in the field of attachment in childhood and adulthood. Considerable attention is pay to its research. However, what is not so much research is the work area. In this regard, the research focused mainly on personality. However, the importance of attachment styles as a specific domain of character, which could also influence the results of our working lives, was somehow overlooked (Harms, 2011). Attachment styles should consider an essential part of social relationships in the workplace because of their ability to influence relationships between individuals (Collins & Read, 1990).

According to Allen (2020), early attachment experiences shape an individual's sense of belonging. Baumeister and Leary (1995) differ between the need to belong and attachment. Belonging need depends on close relationships based on an accumulation of intimacy and shared experience where one

person can be replaced by any other. Belonging in adulthood is not dependent on the early association with the mother, as Bowlby (1969) states. However, same as attachment, belonging is the fundamental human need. According to the connection with a specific locality, belonging to the community is tied to the place and characterized by the reluctance to leave (Bollen & Hoyle, 1999; Hughey & Bardo, 1984; Grance & Ming, 2001; Naništová & Mesárošová, 2000). The place's characteristics become essential in the cognitive assessment of the sense of belonging, taking into account the environment, the place attachment, identity, and satisfaction. There is also a view of belonging to the community that concerns the emotional aspect of belonging, such as friendship, belonging to a group of people which is more important than a place (McMillan & Chavis, 1986). Research results show that place attachment predicts the sense of belonging (Naništová & Mesárošová, 2000), that belonging indicates place attachment (Hidalgo & Hernández, 2001) and also that there is a mutual relationship (Pretty, Chipuer & Bramston, 2003). Place attachment also describes the emotional attachment between a person and place (Swim et al., 2011), and Scrima, Rioux and di Stefano (2017) supported the idea, "that the bonds that an individual form with workplace can be classified as attachment bonds" (p. 944).

Hazan and Shaver (1990) were among the first to apply attachment theory to the work environment. They focused on transferring attachments from close relationships to workplace relationships. They used a typological measure and contributed to the knowledge that securely attached workers are happier at work. Their relationships in the workplace are of better quality, feel competent, and experience less fear in working life. Conversely, anxious employees are more afraid of rejection due to their low self-esteem and higher job turnover. Anxiously attached leaders show less efficiency in performing tasks. Dismissive attached workers try to avoid social interactions, do not seek emotional support under stress, but they are more satisfied at work than anxious workers though less than securely attached workers. Dismissive leaders tend to be task-oriented and less effective in relationship management (Davidovitz, Mikulincer, Shaver, Izsak & Popper, 2007; Hazan & Shaver, 1990; Little, Nelson, Wallace & Johnson, 2011).

Nevertheless, there are other theoretical prerequisites for the study of attachment in work. From the perspective of environmental psychology, the term place attachment is defined as a strong emotional relationship to place, which

is significant for its symbolism (Naništová, 1998). Rioux (2006) defines a job position as an emotional bond arising from the dynamic interaction between the employee and the organizational environment and is an important aspect of the quality of working life. It is considered a resource for employees (Rioux & Pignault, 2013), whereas strong attached individuals are happier at work, less likely to quit their job, and achieve their next performance (Dinç, 2007; Le Roy & Rioux, 2012). Workplace attachment was examined based on one-dimensional scales (Bonaiuto, Fornara & Bonnes, 2003; Rioux & Mokoukolo, 2005; Velasco & Rioux, 2010). One of the most famous scales based on one-dimensionality is the *Workplace Attachment Scale* (Rioux, 2006).

Scrima and colleagues (Scrima, 2018; Scrima et al., 2017; Scrima, Rioux & Lorito, 2014) addressed investigating attachment to the workplace based directly on Bowlby's attachment theory. He was the first to develop a methodology for measuring workplace attachment styles called the *Workplace Attachment Style Questionnaire* (WASQ), which was based on a two-dimensional understanding founded on the work of Bartholomew and Horowitz (1991). He emphasized the quality of attachment, focusing on exploring attachment styles in the workplace (Scrima, 2018). The model consisted of thoughts of itself and thoughts of a place with a positive and negative charge. Their combination creates four types of attachment styles: a secure, preoccupied, dismissive, and fearful style (Scrima et al., 2017; Scrima, 2018). Employees whose working conditions are sufficient in terms of safety, atmosphere, or productivity achieve less concern about workplace conditions. These working conditions could ultimately lead to a more positive perception of their workplace, greater attachment to such a workplace, and increased daily productivity (Dinç, 2007). Thus, securely attached workers have a more positive attitude towards work, are more committed, adaptable to changes in the organization, and have a higher quality of working life. Preoccupied attached workers are more empowered with manifestations of anxiety related to job loss (Scrima, Moffat et al., 2015). It has been found that the more employees are attached to the workplace, the more they help their colleagues and are more teammate players (Rioux & Pavalache-Ilie, 2013).

Examining the attachment in terms of relationships or workplace attachments has an irreplaceable role that can further specify workers' behavior. However, relationships in the workplace are influenced by the own style of attachment

of the leader and subordinate, and they include the dynamics of attachment (Mayseless, 2010). The specificity of the relationship between a leader and a subordinate is its asymmetry, mutual interpretations and expectations, and purpose specificity (Harms, 2011). Mayseless (2010) argues that leader provides particular safety and cares for subordinates, especially in difficult and stressful situations. Thus, the leader should be sensitive to the needs of the subordinate, support and motivate, strengthen success, and develop their autonomy (Popper & Mayseless, 2003). The contribution of attachment orientation in leaders is connected with subordinates' performance (Davidovitz et al., 2007). For example, the compatibility of the relationship between leader and subordinate concerning various variables of organizational behavior (Davidovitz et al., 2007; Keller, 2003).

Molero et al. (2019) sought to determine whether subordinates perceive their leaders as attachment persons. They have thus developed a scale that examines the extent to which subordinates perceive their leaders as safe attachment persons in the organizational environment. In creating the individual items in the questionnaire, the authors theoretically relied on five basic characteristics of a leader who is a security provider: secure base, safe haven, responding warmly to proximity seeking, emotional ties, separation distress. All items were formulated so that the participants focused on their direct superior. Within the correlations with other variables, they demonstrated a significant correlation with transformational and transactional leadership. The higher the participants perceived their leader as a secure attachment person, the more they perceived him/her as a transformational and transactional leader. The less they perceived him/her as a passive and avoidant leader. They also found that the higher the scores achieved by the participants in the LSPS scale, the more they perceived their leader as effective and the more satisfied they were with his leadership.

Taking the position of a leader is a challenging task, not only in terms of responsibility and influence on others to achieve the set goals but also because such activity is increasingly challenging. Depending on the leader's actions, the organization can either prosper and achieve its goals or, conversely, enter a recession. Therefore, it is essential to know what influences leaders in being effective (Gomes, 2014). Gomes (2016) proposed a three-phase model of leadership efficiency that explains the effectiveness of

leaders in terms of the linear relationship between the three main components. The first factor includes the leader's ideas, principles, and goals and is named the leadership philosophy. The second factor comprises behavior that leads the leader to achieve valuable ideas, directions, and goals and is called leadership practice. The last factor is the leadership criteria showing the indicators used by leaders to evaluate the implementation of their leadership. If these three components work in an integrated way, it is assumed that leaders will more effectively meet the requirements of the organization following the requirements of subordinates (Gomes, 2014). The three-phase model works based on two cycles of the leadership process. The conceptual cycle evaluates how a leader should behave, and the practical cycle evaluates how a leader behaves right now. Suppose there is a relationship between the conceptual (what should be done) and the practical cycle (what is happening). In that case, there is mutual unity which leads to the higher efficiency of the leader. Based on this model, Gomes (2016) created a self-explanatory questionnaire called the *Leader Effectiveness Questionnaire*.

AIM OF THE STUDY

Due to the increasing attractiveness of workplace attachment research about various variables, we considered contributing with a more systematic approach of evaluating these psychological constructs by verifying reliable methods for their measurement. The WASQ and LSPS scales have already been described in terms of their factor characteristics. Still, to date, no study confirms the relationship between them and other psychosocial variables. Our work aims to examine the convergent validity of the shortened version of the WASQ from (Mrázková & Lisá, 2021) and the *Leader as Security Provider Scale* from Molero et al. (2019) in Slovak translation. After that, we will verify the relationships of WASQ and LSPS with demographic variables, perceived leadership effectiveness, and belonging to the organization.

- We hypothesize significant relationships, weakly to moderately practical significance, between the WASQ and LSPS questionnaires (Scrima, 2015).
- We hypothesize that workplace attachment is related to the perceived effectiveness of a leader (Molero et al., 2019).
- We hypothesize that workplace attachment is related to

belonging to the organization (Hidalgo & Hernández, 2001; Naništová & Mesárošová, 2000; Pretty et al., 2003).

METHODS

Measurement

- *The Workplace Attachment Style Questionnaire (WASQ)* measures attachment to the workplace (Scrima, 2018). It contains 15 items that represent three styles of workplace attachments, with five items for each style: dismissive (e.g., I dread going back to my workplace after a holiday), secure (e.g., I'm attached to my workplace) and preoccupied workplace attachment style (e.g., I often feel anxious in my workplace) (Scrima, 2018). The questions are answered on a 5-point Likert scale from 0 = I do not agree to 4 = I completely agree. We worked with an abbreviated version of the WASQ of nine items (Mrázková & Lisá, 2021).
- *The Leader as Security Provider Scale (LSPS)* measures how employees perceive their leader as a security provider (Molero et al., 2019). It contains 15 items (e.g., My leader is the person I count on most for useful advice at work) with 5-point scale ranging from 0 = I do not agree to 4 = I completely agree. The one-factor structure was demonstrated, where the final score is calculated as an average (Cronbach's alpha = .96).
- *The Leadership Cycle Questionnaire (LCQ)* measures perceived leadership effectiveness (Gomes, 2016). It consists of a practical leadership cycle, of "real behavior" which contains a leadership philosophy (e.g., Tells us the ideas she/he values the bridge), leadership practice (e.g., Acts in accordance with the ideas valued) and leadership criteria (e.g., Evaluates if his/her ideas were executed) and "preferred behavior" which also contains the dimensions mentioned above. These three dimensions are divided into six finite subscales. 15 items are answered on a 5-point Likert scale from 1 = never to 5 = always. The scores of both parts of the questionnaire are calculated as an average. The efficiency index for each subscale is calculated by subtracting the value obtained in the preferred behavior from the value obtained in the current behavior. Subsequently, the total efficiency index is calculated by adding the resulting efficiency indices from the three subscales. The perceived effectiveness of

the leader has the higher level the closer the average score is to zero. The Cronbach's alpha was ($\alpha = .83$) for leader philosophy in the current behavior, and ($\alpha = .85$) for the preferred behavior. The leadership practice was ($\alpha = .87$) in the current behavior and ($\alpha = .89$) for preferred. The leadership criteria reached ($\alpha = .89$) in current behavior and ($\alpha = .86$) for preferred (Gomes, 2016). The WASQ, LSPS, and LCQ questionnaires were translated into Slovak by two independent researchers, psychologists. The translation of ambiguous cases was determined by consensus.

- *The Scale of Belonging to the Organization (SBO)* consists of 6 items divided into two dimensions (Kretová, 2005; Lisá, 2020). Four items measure the community place (e.g., I would like to work precisely in the building where we work) and two items the relationships in the community (e.g., There, where I work, people can be trusted). The scale measures the intensity of belonging to the organization on a 5-point Likert scale from 1 = never to 5 = always ($\alpha = .77$).

In addition to the questionnaires, participants also filled in sociodemographic variables such as age, sex, organizational tenure, and work position.

Participants and procedure

The research sample consisted of 645 participants who were working adults or part-time workers from various labor markets (finance, business, education). To verify the internal structure of the questionnaires, we randomly divided the research sample into two halves, where the first half was used for exploratory factor analysis and the second for confirmatory factor analysis.

The first half of the sample consisted of 323 participants aged 16 to 78 years ($M = 37.09$; $SD = 11.74$). There were 42.4% men and 53.9 women. The organizational tenure ranged from .20 years to 40 years ($M = 5$; $SD = 5.47$). 13.6% of the sample were leaders, and 86.4% were subordinates.

The second half of the research sample consisted of 322 participants aged 18 to 70 years ($M = 38.63$, $SD = 10.85$). Men made up 41.1% and women 47.5%. The organizational tenure ranged from less than a year to 27 years ($M = 5.77$; $SD = 5.19$). 14.6% of the sample were leaders, and 85.3% were subordinates.

We analyzed the relationship of WASQ to other scales

on the whole sample of participants ($N = 645$). Paper questionnaires were thrown into electronic form by three psychology students. Participants ranged in age from 16 to 78 years, ($M = 37.84$, $SD = 11.34$). There were 43.4% men and 50.7% women. The organizational tenure ranged from less than a year to 40 years ($M = 5.37$; $SD = 5.34$). 14.2% of the sample were leaders, and 85.8% were subordinates.

Ethical approval

All procedures performed in studies involving human participants were following the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments. Written informed consent was obtained from all individual participants included in the study.

Data analysis

We verified the internal structure of LSPS using the principal axis factoring extraction method with direct Oblimin rotation. We calculated the internal consistency of extracted factors as Cronbach's alphas. After verifying the relationships between the questionnaires' variables through Spearman correlation analysis and multiple linear regression analysis, we used the Mann Whitney U test and the Kruskal Wallis test for the differences between gender and job position in the individual variables of the questionnaires.

We performed a CFA for LSPS, SBO, and LCQ based on structural equation modeling (SEM) to confirm the factor structure. The robust maximum likelihood (ML) method estimated the parameters, and we used the lavaan software (Satorra & Bentler, 1994). Parameters by robust Tucker-Lewis index (TLI), where the value should be greater than .90, then the robust comparative fit index (CFI), where values range from 0 to 1. A value greater than .95 indicates a good model fit (Hu & Bentler, 1999). The robust Root Mean Square Error of Approximation (RMSEA) ranges from 0 to 1, and a smaller value indicates a better model fit. According to Brown (2015), the value of .06 or less is a good model fit (Brown, 2015). Lastly, we used robust, Standardized Root Mean Square Residual (SRMR), ranging from 0 to 1, while values smaller than .08 are a criterion of an acceptable model (Hu & Bentler, 1999).

RESULTS

Verification of the structure of questionnaires

WASQ questionnaire showed reliability values for the secure workplace attachment style $\alpha = .647$, the preoccupied workplace attachment style $\alpha = .757$, and the dismissive workplace attachment style $\alpha = .803$.

LSPS, originally from Molero et al. (2019), corresponding to a one-factor solution. In our case, none of the fit indices met the required limit for one-factor solution. In EFA, we excluded items that saturated both or no factors. The reduced model showed RMSEA = .06 and TLI = .966, which we consider being excellent values. KMO = .883, from which we concluded that the questionnaire is suitable for factor analysis. Table 1 shows the final two-factor model. The factors explained 54.91% of the variance. Factor 1, which we called Secure base and safe haven ($AM = 15.66, SD = 4.40$), saturated items number 5, 9, 10, 12, 14, 15 (e.g., I think my leader would support my growth and advancement on the job), with a 44.93% variance. The second factor, called Separation distress ($AM = 4.68, SD = 2.74$), saturated items 6, 7, 8 (e.g., If my leader moved to another organization or another position in this organization, I would try to go with him/her), with 9.98% of explained variance. Cronbach's alpha ranges from .799 to .857. Factors correlated strongly positively ($\rho = .546$). A weak correlation was also confirmed between the Separation distress and organizational tenure levels ($\rho = .114$).

Table 1 compares the one-factor and two-factor model of the LSPS. The one-factor model does not meet any required values of fit indices except for SRMR (.065). In contrast, a two-factor model containing six items in the secure base and safe haven and three items in the separation distress meets all required criteria, thus it is suitable for a two-factor solution. Figure 1 shows a graphical representation of the CFA for LSPS.

We verified the suitability of the three-factor model of the LCQ within the current behavior as well as the preferred behavior by CFA. Based on the values CFI = .956, TLI = .947, SRMR = .040 and RMSEA = .072, the scale of LCQ current behavior is suitable for a three-factor solution. The values of Cronbach's alpha ranged from .88 to .92. Preferred behavior also showed good data fit (CFI = .975, TLI = .969, SRMR = .034 and RMSEA = .052). Cronbach's alpha values ranged from .86 to .91. The Slovak version of the LSPS questionnaire is available upon request from authors.

CFA of the SBO confirmed good data fit for two-factor solution (place and relationships), where CFI = .997, TLI = .994, SRMR = .016 and RMSEA = .034. The values of Cronbach's alpha ranges from .79 to .87. All items correlated with factors at $p < .001$. A strong positive correlation was confirmed between the factors of the SBO at $\rho = .69$ and $p < .000$.

Convergent validity of WASQ and LSPS

The WASQ confirmed a positive correlation between two insecure styles ($\rho = .556, p < .001$), the secure style was negatively correlated with a preoccupied ($\rho = -.220, p < .001$) and a dismissive ($\rho = -.137, p < .001$) (see Table 2). Secure base and secure haven negatively correlated with insecure styles of WASQ ($\rho = -.293, -.233, p < .001$) and, with secure positively ($\rho = .339, p < .001$). The separation distress correlated with the secure style ($\rho = .431, p < .001$).

The SBO scales correlated with all scales of the WASQ, where place to the community negatively correlated with preoccupied style ($\rho = -.425, p < .001$), with dismissive style ($\rho = -.275, p < .001$) and positively with secure style ($\rho = .505, p < .001$). Relationships negatively correlated with preoccupied style ($\rho = -.279, p < .001$), dismissive ($\rho = -.223, p < .001$) and positively with secure style ($\rho = .278, p < .001$).

Weak positive correlations were also between the perceived effectiveness of the leader with preoccupied ($\rho = .255, p < .001$), dismissive ($\rho = .238, p < .001$) and secure style ($\rho = .114, p < .001$). The secure style was negatively correlated with the organizational tenure ($\rho = -.166, p < .001$). The higher the score in insecure attachment, the higher the perceived effectiveness of the leader. The higher the secure attachment, the lower the perceived effectiveness of the leader.

Weak positive relations were also between secure base and safe haven with scales of the SBO (place: $\rho = .303, p \leq .001$, and relationships: $\rho = .295, p < .001$). The separation distress positively correlated with place ($\rho = .291, p < .001$) and community relationships ($\rho = .254, p < .001$). The perceived effectiveness of the leader negatively correlated with the secure base and safe haven ($\rho = -.374, p < .001$), and with separation distress ($\rho = -.198, p < .001$). There was a weak correlation between organizational tenure and separation distress ($\rho = .115, p < .001$).

Table 1 – Exploratory factor analysis of LSPS

EFA	1	2
Item 5	.730	
Item 6		.603
Item 7		.877
Item 8		.758
Item 9	.429	
Item 10	.581	
Item 12	.580	
Item 14	.763	
Item 15	.885	
Explained variance	44.93%	9.98%
Cronbach's alpha	.857	.799

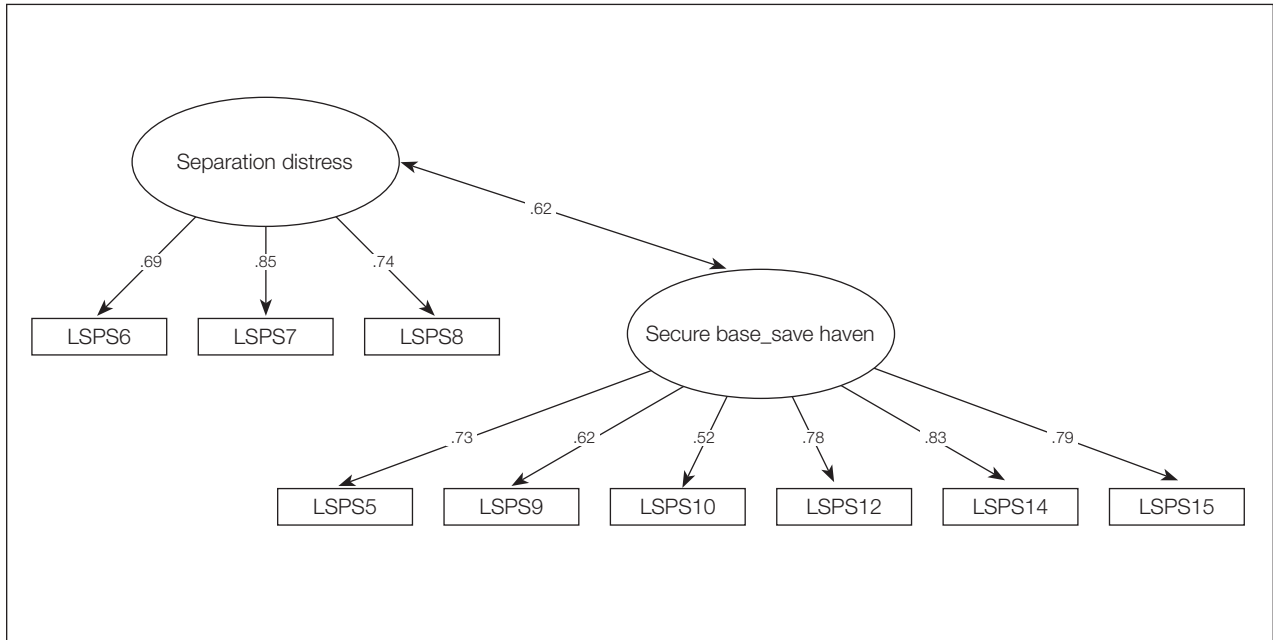
Model	CFI	TLI	SRMR	RMSEA (lower-upper)
1 factor	.86	.84	.065	.106 (.094 – .119)
2 factors	.96	.94	.048	.07 (.053 – .104)

Note. All items (structural parameters) correlated with two factors at the level of $p < .001$. A strong positive correlation was confirmed between LSPS factors ($\rho = .546, p < .000$).

The place of community ($\rho = -.293, p < .001$) and the relationships in the community ($\rho = -.316, p < .001$) correlated with the perceived effectiveness of the leader. There was also a weak correlation between age and place ($\rho = .139, p < .001$). The organizational tenure strongly correlated with age ($\rho = .491, p < .001$).

Table 3 shows the multiple linear regression, where the SBO place entered as a dependent variable and the

dimensions of the WASQ and LSPS as predictors, showed a significant regression. The results show that Adjusted R^2 is the highest in the third model, which contains two dimensions of the WASQ (secure and preoccupied) and the separation distress from the LSPS. Looking at the third model ($F = 105.709, p < .001$) with an adjusted $R^2 = .377$ and a 37.7% variance, the secure style was the strongest predictor of the community place ($\beta = .393, p < .001$). Likewise, the predictor

Figure 1 – Confirmatory factor analysis of LSPS**Table 2** – Correlations between WASQ, LSPS, LCQ, SBO and sociodemographic variables

	1	2	3	4	5	6	7	8	9
1. Preoccupied style	–								
2. Dismissive style	.556**	–							
3. Secure style	-.220**	-.137**	–						
4. Secure base & safe haven	-.293**	-.233**	.339**	–					
5. Separation distress	-.040	-.011	.431**	.537**	–				
6. Relations to the community	-.279**	-.223**	.278**	.295**	.254**	–			
7. Place to the community	-.425**	-.275**	.505**	.303**	.291**	.575**	–		
8. Percieved efectivity of leader	.255**	.238**	-.166**	-.374**	-.198**	-.316**	-.293**	–	
9. Organizational tenure	.006	.085	.135**	.015	.115**	.009	.084	.073	–
10. Age	-.047	.002	.035	.016	-.042	.038	.139**	-.040	.491

** $p < .01$

Table 3 – Multiple linear regression of place to the community with dimensions of WASQ and LSPS

Model	Beta	Sig.	F	Adjusted R ²
1 Secure style	.511	.000	182.792	.260
2 Secure style	.439	.000	153.229	.370
Preoccupied style	-.342	.000		
3 Secure style	.393	.000	105.709	.377
Preoccupied style	-.346	.000		
Separation distress	.102	.005		

- a. Predictors: Secure style.
- b. Predictors: Secure style, Preoccupied style.
- c. Predictors: Secure style, Preoccupied style, Separation distress.
- d. Dependent Variable: Place to the community.

is a preoccupied style ($\beta = -.336, p < .001$), with a negative charge. The separation distress predicates the dimension of community place ($\beta = .102, p < .001$).

Multiple linear regression with relationships in the community as dependent variable and dimensions of WASQ and LSPS as predictors shows Table 4. The Adjusted R² was highest in the fourth model, which contains three dimensions of the WASQ (secure, preoccupied, and dismissive) and the separation distress dimension from the LSPS ($F = 24.131, p < .001$, adjusted R² = .151 and a variance of 15.1%). The preoccupied style was the strongest significant predictor of the relationships in the community ($\beta = -.192, p < .001$), the second predictor is separation distress ($\beta = .171, p < .001$). This is followed by secure style ($\beta = .135, p < .001$) and the last one is dismissive ($\beta = .105, p < .005$).

Table 5 shows multiple linear regression in terms of perceived effectiveness of leader as a dependent variable and WASQ and LSPS as predictors confirmed a significant regression in the secure base and safe haven ($F = 85.283, p < .001$) model with an adjusted R² = .153 ($\beta = -.394, p < .001$). Adjusted R² = .171 was higher in the second model where the

predictors were secure base and safe haven and preoccupied style where secure base and safe haven ($\beta = -.354, p < .001$) and in preoccupied style ($\beta = .141, p < .001, F = 85.283, p < .001$). Secure base and safe haven and preoccupied style are thus predictors of perceived effectiveness of the leader.

When examining the gender differences based on the Mann-Whitney U test, we found the difference only in the secure base and safe haven scale from the LSPS questionnaire where $U = 27310.5, p < .05$, with weak practical difference ($r_m = .109$).

When comparing differences in job position, we used the *Kruskal Wallis Test*, where we confirmed statistically significant differences in dismissive style ($KW = 58.51, p < .001$). The correlation rate of practical significance was ($r_m = .303$), which we consider a medium practical difference to a dismissive style. There was also a statistically significant difference in the secure workplace attachment style ($KM = 44.921, p < .005, r_m = .267$). The last statistically significant difference was in the dimension of separation distress where ($KM = 51.096, p < .007$) and the correlation rate of practical significance reached the value ($r_m = .305$).

Table 4 – Multiple linear regression of relations to the community with dimensions of WASQ and LSPS

Model		Beta	Sig.	F	Adjusted R ²
1	Preoccupied style	–.289	.000	47.343	.082
2	Preoccupied style	–.275	.000	40.506	.132
	Separation distress	.228	.000		
3	Preoccupied style	–.249	.000	30.430	.145
	Separation distress	.168	.000		
	Secure style	.139	.003		
4	Preoccupied style	–.192	.001	24.131	.151
	Separation distress	.171	.000		
	Secure style	.135	.003		
	Dismissive style	–.105	.033		

a. Predictors: Preoccupied style.

b. Predictors: Preoccupied style, Separation distress.

c. Predictors: Preoccupied style, Separation distress, Secure style.

d. Predictors: Preoccupied style, Separation distress, Secure style, Dismissive style.

e. Dependent Variable: Relations to the community.

Table 5 – Multiple linear regression of effectiveness of leader with dimensions of WASQ and LSPS

Model		Beta	Sig.	F	Adjusted R ²
1	Secure base & safe haven	–.387	.000	84.956	.148
2	Secure base & safe haven	–.347	.000	49.011	.166
	Preoccupied style	.145	.001		

a. Predictors: Preoccupied style.

b. Dependent Variable: Perceived effectiveness of the leader.

DISCUSSION

The article aimed to examine the convergent validity of the WASQ from Scrima (2018) and the LSPS (Molero et al., 2019) with two other constructs. The LCQ (Gomes, 2016) examines the perceived effectiveness of a leader, and the SBO (Kretová, 2005; Lisá, 2020), examines belonging to a community/organization. First, we performed an EFA of the LSPS (Molero et al., 2019). The analysis showed that the questionnaire corresponds to a two-factor solution with dimensions of secure base and safe haven and separation distress. We verified the goodness of fit indices for the two-factor solution using a CFA, which confirmed the suitability of the two-factor solution. In contrast, Molero et al. (2019) came up with the suitability of a one-factor solution. The creation of questions was based on five characteristics of the perception of the leader as a provider of safety, namely safe base, safe haven, the search for proximity, emotional ties, and separation distress (Bowlby, 2010). We have preserved the original basis of the theoretical model in our work while we determined the dimensions in terms of semantic similarity based on the five characteristics mentioned above. Thus, we have named the two factors as the dimensions of secure base and safe haven and separation distress.

In verifying the convergent validity of the shortened version of WASQ from Mrázková and Lisá (2021), a moderately statistically significant relationship between the two preoccupied and dismissive styles was confirmed, and a secure style was weakly negatively related to dismissive and preoccupied, both relationships were statistically significant. The same connections were published in the original work by Scrima (2018). In terms of attachment styles, dismissive and preoccupied styles are a kind of opposition to the secure one. This arises from the disruption of the natural development of the attachment when the individual does not receive enough attention and emotion in terms of his needs and subsequently persists throughout the individual's life with limited opportunities to change them (Ainsworth, Blehar, Waters & Wall, 2015; Bowlby, 2010). The primary precondition for the suitability of a methodology focused on attachment styles is thus the mutual non-linear connection between safe and insecure attachment styles. The reliability of the given methodology, which in our case reached a satisfactory value up to the secure style, where the value was just below the required limit of .700, also suggests this suitability. Another assumption is the validity of the methodology we tried to

answer based on established hypotheses.

When answering the first hypothesis, "We assume significant relationships, weakly to moderately significant, between the dimensions of the WASQ and LSPS" (Scrima, 2015), the relationships confirmed that the more individuals are dismissive and preoccupied attached to the workplace, the less they perceive their leader as a safe base and safe haven. The secure style was related to the perception of its leader as a secure base and safe haven positively. However, the second dimension of separation distress was moderately related only to secure style. The results confirm that workplace attachment can be considered in the sense of the attachment, as defined by Bowlby (Scrima, 2018), based on the emotional component of the construct. Proven correlations suggest a more remarkable similarity between attachment styles and secure base and safe haven than between attachment styles and separation distress. Despite the weak correlations, the results indicate the difference between the two constructs and the legitimacy of their measurement.

Second hypothesis: "We assume that the workplace attachment predicts belonging to the organization" (Hidalgo & Hernández, 2001; Naništová & Mesárošová, 2000; Pretty et al., 2003), was also confirmed. The place belonging was strongly moderately related to preoccupied style, weakly negative with dismissive style, and medium strongly positive with a secure style. Relationships in the community were similarly negatively related to insecure styles and weakly positive to secure styles. With a secure attachment, the need to belong to the community grows. We also found that secure and preoccupied workplace attachment styles and separation distress were predictors of belonging to the place of community/organization.

Similarly, the dismissive and preoccupied workplace attachment styles and separation distress were predictors of belonging to the relationships within community/organization. As Allen (2020) mentioned, there is no significant difference between attachment and a sense of belonging. Both are human needs, with belonging to the community being closely tied to the place. In this case, their interrelationship is highly probable, even though the workplace attachment is based on Bowlby's attachment theory, which speaks of its dependence on the child-mother relationship (Baumeister & Leary, 1995; Grance & Ming, 2001; Naništová & Mesárošová, 2000).

In answering the third hypothesis: "We assume that the workplace attachment is related to the perceived effectiveness

of the leader” (Gomez, 2016), we confirmed the relationships between the perceived effectiveness of the leader and the perception of the leader as a safe figure (Molero et al., 2019). Secure base and safe haven, and preoccupied style were predictors of the perceived effectiveness of the leader.

The LSPS confirmed relationships between the two dimensions. Weak positive relationships were also demonstrated between the two dimensions of SBO and the dimension of secure base and safe haven and separation distress. The perceived effectiveness of a leader was negatively related to both dimensions of the LSPS questionnaire, which is known that the more employees are attached to their leader, the more they perceive him/her as an effective leader. Similar results are suggested in Molero et al. (2019), where significant relationships with the perceived effectiveness of the leader and the overall satisfaction with the leader were demonstrated. According to Molero et al. (2019), this may be because these two constructs see the leader as a secure base and safe haven. The leader’s perceived effectiveness was also related to both dimensions of belonging to the organization, where the relations were weak to medium-strong. The dimensions of community/organization place indicate the need to belong somewhere and relationships within the community, to maintain these relationships, suggesting the importance of the relationship between leader and subordinate (McMillan & Chavis, 1986). Therefore, when the emotional aspect of the need to maintain relationships is fulfilled in the community, then the perceived effectiveness of the leader increases.

The results suggest that although LSPS and WASQ are related to other similar variables dealing with leadership or belongings, they are unique. Within LSPS, we can confirm this based on the strongest Beta coefficient in the regression equation at the leader’s perceived effectiveness. Similar results are indicated in work by Molero et al. (2019). LSPS thus contributes to explaining the perceived effectiveness of the leader. On the other hand, the WASQ dimensions were the strongest predictor within the dimensions of belonging to the organization, which suggests its importance in need to belong to the organization.

Limitations and future research

Verification of the convergent validity of both constructs on the Slovak population is a significant benefit. However, it is necessary to look at the examined constructs connected

with other variables such as satisfaction (Scrima et al., 2015), work engagement, or performance (Harms, 2011; Sartori, Costantini, Ceschi & Tommasi, 2021) at work. It would also be interesting to look at these two variables related to personality, which we know is often measured concerning organizational behavior (Costantini et al., 2017).

In the future, it would be appropriate to look at the divergent validity of these two methodologies. Limitation of the work was collecting data before the Covid-19 pandemic. It is known that the activation of behavioral attachment systems occurs in situations where individuals experience complex life situations (Bowlby, 2010). We consider it essential in future research to take a closer look at the different styles of attachment to the workplace in the current pandemic situation when individuals often lose their jobs, are forced to work from the home office, or work is significantly hampered by several hygiene measures based on the current pandemic situation. For this reason, the perception of a leader as a security provider may increase in these times. Furthermore, it is precisely secure individuals who are likely to cope with the changing conditions of working life better. It is also essential to look at the similarities/differences in attachment between the leader and the subordinate. Several authors point out the increase in work efficiency due to the compatibility of attachment styles between the leader and subordinates (Keller, 2003; Mikulincer & Florian, 1995; Shah, Fonagy & Strathearn, 2010). The future intention is also to take a closer look at the perception of a leader as a security provider in terms of teams and individuals.

CONCLUSION

In conclusion, our work confirmed the convergent validity of WASQ and LSPS questionnaires and their connection with belongings to the organization and the perceived effectiveness of a leader in the Slovak population. We verified the internal structure of the LSPS questionnaire, which is also suitable for a two-factor solution. We have contributed by validating these methodologies to the theory of attachment, which focus to the leadership, that is increasingly justified today (Bresnahan & Mitroff, 2007), and attachment theory in the workplace. The study results can help HR managers better understand the individual manifestations of employees in terms of their personality and the theory of relationships and attachments.

References

- AINSWORTH, S.M.D., BLEHAR, M.C., WATERS, E. & WALL, S.N. (2015). *Patterns of attachment: A psychological study of the strange situation*. New York: Psychology Press. doi.org/10.4324/9780203758045
- ALLEN, K. (2020). *The psychology of belonging*. Routledge.
- 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.org/10.1037/0022-3514.61.2.226
- BAUMEISTER, R.F. & LEARY, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117 (3), 497-529. doi.org/10.1037/0033-2909.117.3.497
- BOLLEN, K.A. & HOYLE, R.H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, 69 (2), 479. doi.org/10.2307/2579670
- BONAIUTO, M., FORNARA, F. & BONNES, M. (2003). Indexes of perceived residential environment quality and neighbourhood attachment in urban environments: A confirmation study on the city of Rome. *Landscape and Urban Planning*, 65 (1-2), 41-52. doi.org/10.1016/s0169-2046(02)00236-0
- BOWLBY, J. (1969). *Attachment & loss. Volume 1: Attachment*. Basic Books.
- BOWLBY, J. (2010). *Vazba: Teorie kvality ranných vztahů mezi matkou a dítětem*. Portál.
- BRESNAHAN, C.G. & MITROFF, I.I. (2007). Leadership and attachment theory. *American Psychologist*, 62 (6), 607-608. doi.org/10.1037/0003-066x62.6.607
- COLLINS, N.L. & READ, S.J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58 (4), 644-663. doi.org/10.1037/0022-3514.58.4.644
- COSTANTINI, A., DE PAOLA, F., CESCHI A., SARTORI, R., MENEGHINI, A.M. & DI FABIO, A. (2017). Work engagement and psychological capital in the Italian public administration: A new resource-based intervention programme. *SA Journal of Industrial Psychology*, 43 (1), 1-11.
- CRAWFORD, E.K., WORSHAM, N.L. & SWINEHART, E.R. (2006). Benefits derived from companion animals, and the use of the term "attachment". *Anthrozoös*, 19 (2), 98-112. doi.org/10.2752/089279306785593757
- 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.org/10.1037/0022-3514.93.4.632
- DINÇ, P. (2007). Spatial and behavioral variables that affect "emotional attachment" of users: A multi-dimensional approach for private offices. *Gazi University Journal of Science*, 20 (2), 41-50. dergipark.org.tr/en/download/article-file/83019
- FOURNIER, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research*, 24 (4), 343-353. doi.org/10.1086/209515
- GOMES, A.R. (2014). Leadership and positive human functioning: A triphasic proposal. In A.R. Gomes, R. Resende & A. Albuquerque (Eds.), *Positive human functioning from a multidimensional perspective: Promoting high performance*. Nova Science.
- GOMES, A.R. (2016). *Questionário de Eficácia da Liderança (QEL)*. Unpublished technical report. Braga: Escola de Psicologia, Universidade do Minho.
- GRANGE, A.L. & MING, Y.N. (2001). Social belonging, social capital and the promotion of home ownership: A case study of Hong Kong. *Housing Studies*, 16 (3), 291-310. doi.org/10.1080/02673030120049689
- HARMS, P.D. (2011). *Adult attachment styles in the workplace*. University of Nebraska.
- HAZAN, C. & SHAVER, P.R. (1990). Love and work: An attachment theoretical perspective. *Journal of Personality and Social Psychology*, 59 (2), 270-280. doi:10.1037//0022-3514.59.2.270.
- HAZAN, C. & SHAVER, P.R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*, 5 (1), 1-22. doi.org/10.1207/s15327965pli0501_1
- HIDALGO, M. & HERNÁNDEZ, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology*, 21 (3), 273-281. doi.org/10.1006/jevp.2001.0221
- HU, L. & 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.org/10.1080/10705519909540118
- HUGHEY, J.B. & BARDO, J.W. (1984). The structure of community satisfaction in a Southeastern American City. *The Journal of Social Psychology*, 123 (1), 91-99. doi.org/10.1080/00224545.1984.9924517
- KELLER, T. (2003). Parental images as a guide to leadership sensemaking: An attachment perspective on implicit leadership theories. *Leadership Quarterly*, 14 (2), 141-160. doi.org/10.1016/S1048-9843(03)00007-9.

- KRETOVÁ, E. (2005). *Psychosociálne aspekty príslušnosti k rómskej komunite na Slovensku*. Unpublished doctoral dissertation, Trnava University.
- LACCEUILHE, J. (2000). L'attachement a la marque: Proposition d'une échelle de mesure. *Recherche et Applications en Marketing*, 15 (4), 61-77. doi.org/10.1177/076737010001500404
- LE ROY, J. & RIOUX, L. (2012). The mediating role of workplace attachment in the relationship between organizational commitment and organizational citizenship behavior. *Revue Internationale de Psychologie Sociale*, 25 (3-4), 211-233.
- LEWICKA, M. (2010). What makes neighborhood different from home and city? Effects of place scale on place attachment. *Journal of Environmental Psychology*, 30 (1), 35-51. doi.org/10.1016/j.jenvp.2009.05.004
- LISÁ, E. (2020, november 30). *The scale of sense of belonging to a community - dimensionality and validity*. Paper presentation, Conference community psychology in Slovakia. Available at: https://fses.uniba.sk/fileadmin/fsev/uap/dokumenty/workshop/20_21/Book_of_abstracts_2020_23_11.pdf
- LITTLE, L.M., NELSON, D.L., WALLACE, J.C. & JOHNSON, P.D. (2011). Integrating attachment style, vigor at work, and extra-role performance. *Journal of Organizational Behavior*, 32 (3), 464-484. doi.org/10.1002/job.709
- MAIN, M., KAPLAN, N. & CASSIDY, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development*, 50 (1/2), 66. doi.org/10.2307/3333827
- MAYSELESS, O. (2010). Attachment and the leader-follower relationship. *Journal of Social and Personal Relationships*, 27 (2), 271-280. doi.org/10.1177/0265407509360904.
- McMILLAN, D.W. & CHAVIS, D.M. (1986b). Sense of community: A definition and theory. *Journal of Community Psychology*, 14 (1), 6-23. doi.org/10.1002/1520-6629(198601)14
- MIKULINCER, M. & FLORIAN, V. (1995). Appraisal of and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin*, 21 (4), 406-414. <https://doi.org/10.1177/0146167295214011>
- MRÁZKOVÁ, K. & LISÁ, E. (2021, April). The Workplace Attachment Styles Questionnaire in shortened 9-item version. In C. Pracana & M. Wang (Eds.), *Psychological Applications and Trends 2021*. doi.org/10.36315/2021inpact051
- NANIŠTOVÁ, E. (1998). Človek a príroda: Enviromentálna psychológia. In J. Výrost & I. Slaměník (Eds.). *Aplikovaná sociální psychologie I. Portal*.
- NANIŠTOVÁ, E. & MESÁROŠOVÁ, B. (2000). Analýza väzby na miesto a environmentálnych dispozícií detí z vidieka a mesta. *Psychológia a patopsychológia dieťaťa*, 35 (1), 3-22.
- PANKSEPP, J. & BIVEN, L. (2012). *The archaeology of mind: Neuroevolutionary origins of human emotions*. W.W. Norton & Company.
- POPPER, M. & MAYSELESS, O. (2003). Back to basics: Applying a parenting perspective to transformational leadership. *The Leadership Quarterly*, 14 (1), 41-65. doi.org/10.1016/s1048-9843(02)00183-2
- PRALONG, D. (2004). La relation homme-animal: Un lien jusqu'au bout de la vie. *Revue Internationale de Soins Palliatifs*, 19 (1), 9-12. doi.org/10.3917/inka.041.0009
- PRETTY, G.H., CHIPUER, H.M. & BRAMSTON, P. (2003). Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity. *Journal of Environmental Psychology*, 23 (3), 273-287. doi.org/10.1016/s0272-4944(02)00079-8
- RIOUX, L. (2006). Construction of a scale of commitment to the workplace: An exploratory step. *Canadian Journal of Behavioural Science - Revue Canadienne des Sciences du Comportement*, 38, 325-336. doi:10.1037/cjbs2006018
- RIOUX, L. (2017). Comfort at work: An indicator of quality of life at work. In G. Fleury-Bahi, E. Pol & O. Navarro (Eds.), *International handbooks of quality-of-life. Handbook of environmental psychology and quality of life research*. Springer International Publishing AG. doi.org/10.1007/978-3-319-31416-7_22
- RIOUX, L. & MOKOUNKOLO, R. (2005) Neighbourhood attachment and adolescence: A comparative study carried out in two neighbourhoods presenting a great cultural diversity. *Bulletin de Psychologie*, 57 (6), 611-620.
- RIOUX, L. & PAVALACHE-ILIE, M. (2013). Workplace attachment and organizational commitment - are they predictors of organizational citizenship behavior? Study on French health care workers. *Annals of the Al. I. Cuza University, Psychology Series*, 22 (1), 5-18. <https://www.psih.uaic.ro/anale-psi/wp-content/uploads/sites/10/2021/01/Workplace-attachment-and-organizational-commitment-are-they.pdf>
- RIOUX, L. & PIGNAULT, A. (2013). Workplace attachment and meaning of work in a French secondary school. *The Spanish Journal of Psychology*, 16. <https://doi.org/10.1017/sjp.2013.42>
- SARTORI, R., COSTANTINI, A., CESCHI, A. & TOMMASI, F. (2021). Social representation and assessment of salespeople personality for job performance: An overview and an Italian piece of research. *Italian Sociological Review*, 11 (1), 19-38.
- SATORRA, A. & BENTLER, P.M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von

- Eye & C.C. Clogg (Eds.), *Latent variables analysis: Applications for developmental research*. Sage Publications, Inc.
- SCANNELL, L. & GIFFORD, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology, 30* (1), 1-10. doi.org/10.1016/j.jenvp.2009.09.006
- SCRIMA, F. (2015). The convergent-discriminant validity of the Workplace Attachment Scale (WAS). *Journal of Environmental Psychology, 43*, 24-29. doi.org/10.1016/j.jenvp.2015.05.009
- SCRIMA, F., DI STEFANO, G., GUARNACCIA, C. & LORITO, L. (2015b). The impact of adult attachment style on organizational commitment and adult attachment in the workplace. *Personality and Individual Differences, 86*, 432-437. doi.org/10.1016/j.paid.2015.07.013
- SCRIMA, F., MOFFAT, E. & RIOUX, L. (2015). Italian validation of the scale of satisfaction with the work environment. *BPA-Applied Psychology Bulletin, 274*, 35-48.
- SCRIMA, F., MOFFAT, E. & RIOUX, L. (2016). The relationship between environmental satisfaction in the workplace and job satisfaction. A reciprocal longitudinal model. *Psicologia Sociale, 11* (2), 141-158. doi.org/10.1482/84096
- SCRIMA, F., RIOUX, L. & DI STEFANO, G. (2017). I hate my workplace but I am very attached to it: Workplace attachment style: An exploratory approach. *Personnel Review, 46* (5), 936-949. doi.org/10.1108/PR-05-2015-0128
- SCRIMA, F., RIOUX, L. & LORITO, L. (2014). Three-factor structure of adult attachment in the workplace: Comparison of British, French, and Italian samples. *Psychological Reports, 115* (2), 627-642. doi.org/10.2466/49.pr0.115c2522
- SHAH, P.E., FONAGY, P. & STRATHEARN, L. (2010). Is attachment transmitted across generations? The plot thickens. *Clinical Child Psychology and Psychiatry, 15* (2), 329-345. doi.org/10.1177/1359104510365449.
- SWIM, J.K., STERN, P.C., DOHERTY, T.J., CLAYTON, S., RESER, J.P., WEBER, E.U., GIFFORD, R. & HOWARD, G.S. (2011). Psychology's contributions to understanding and addressing global climate change. *American Psychologist, 66* (4), 241-250. doi.org/10.1037/a0023220
- VELASCO, L. & RIOUX, L. (2010) Psychosocial approach to workplace attachment: A study carried out among hospital staff. *Estudios de Psicología, 31* (3), 309-323.
- ZIMBEROFF, D. & HARTMAN, D. (2002). Attachment, detachment, nonattachment: achieving synthesis. *Journal of Heart-Centered Therapies, 5* (1), 3-94. doi:10.1.1.469.2175&rep=rep1&type=pdf