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Measuring energy in team: The Italian validation of Team Boosting Behaviors scale

Flavio Urbini[1], Elena Sofia De Benedictis[1], Andrea Caputo[2], Claudio Giovanni Cortese[2], Antonino Callea[1]

[1] Department of Human Science, Lumsa University, Rome, Italy
[2] Department of Psychology, University of Turin, Turin, Italy

andrea.caputo@unito.it

ABSTRACT. Lo studio propone la validazione della versione italiana della scala di Team Boosting Behaviors. Formata da 18 item, misura tre comportamenti diversi: Mood-enhancing, riguarda l'uso dell'umorismo per migliorare il clima nel team; Energizing, ovvero proporre idee e inventare giochi per superare i momenti noiosi; e Uniting, focalizzati sulla costruzione di relazioni tra i membri del team. La ricerca ha coinvolto un campione di 426 dipendenti italiani. I risultati confermano la versione italiana come uno strumento valido e affidabile nella valutazione di questi comportamenti rivolti a migliorare il clima nel team di lavoro, comportandosi come un booster di risorse nell'ottica della Job demand-resources theory.

SUMMARY. Team Boosting Behaviors (TBBs) are defined as energetic and positive actions that aim to enhance mood, energize colleagues, and foster team unity. Reflecting the concept of 'the life of the party', TBBs are assessed using the Italian version of the TBBs scale, which comprises 18 items measuring three distinct dimensions: Mood-enhancing behaviors, Energizing behaviors, and Uniting behaviors. This study sought to validate this Italian version of the TBBs scale using the Job demands-resources model. The sample consisted of 426 Italian employees who completed an online questionnaire. Most participants worked in the private sectors with a permanent contract. The average organizational tenure was about of 11 years. Confirmatory factor analysis, via structural equation modelling, supported the three-dimensional structure of the TBBs scale and demonstrated its empirical distinctiveness from organizational citizenship behaviors (OCBs), thus confirming its discriminant validity. Correlation analyses revealed that Mood-enhancing, Energizing, and Uniting behaviors were positively associated with altruism, civic virtue, and conscientiousness. These findings indicate that the Italian TBBs scale is a reliable and valid tool for evaluating these behaviors in the workplace. While the scale does not directly influence organizational climate or performance, it provides a useful instrument for monitoring and promoting positive group dynamics and improving organizational processes.

Keywords: *Team boosting behaviors, Soft skills, Validation*

INTRODUCTION

Soft skills, or transversal competencies, are gradually more recognized as essential elements for personal and professional success. However, the limited number of validated tools can be a hindrance to measure some of these skills in Italy, requesting relevant efforts for individuals, educational institutions, companies, and the labor market as a whole.

Built on the fundamental concept that a team surpasses the combined abilities of its individual members, previous studies often highlighted processes and outcomes at group level (Kozlowski & Klein, 2000; Li, Zhao, Walter, Zhang & Yu, 2015). Nevertheless, the effectiveness of teamwork remains heavily dependent on the unique contributions of individuals within the team. Essentially, the qualities and behaviors of everyone serve as the foundational elements of teamwork (Mathieu, Maynard, Rapp & Gilson, 2014). The individual contributions may not be evenly distributed among all team members, as certain individuals can wield a distinctive impact, capable of either making or breaking the team.

In this regard, positive energy plays a pivotal role in the success of a team (Felps, Mitchell & Byington, 2006); it becomes essential to pinpoint behavioral expressions that can elevate the team's morale and that of its members (i.e., energy at work). To meet this need in the working world, Fortuin and colleagues (Fortuin, Van Mierlo, Bakker, Petrou & Demerouti, 2021) introduced a new concept, named Team Boosting Behaviors (TBBs), identified in the idiom 'the life of the party'. The formal definition of the life of the party centers on attributes of liveliness, enjoyment, and social influence, more specifically, TBBs are defined as energetic, mood enhancing, and uniting behaviors, directed towards fellow team members (Fortuin et al., 2021). TBBs are referred to the term boosting, meaning to arouse enthusiasm or to vigorously promote (American Heritage Dictionary of the English Language, 2020). In other words, TBBs effectively capture the energy and positivity inherent in the behaviors exhibited by party life (Fortuin et al., 2021). The inclusion of team emphasizes the interpersonal aspect of these behaviors and aligns with our emphasis on team contexts.

Individuals embodying these qualities have the ability to brighten social gatherings with their contagious energy. Their pronounced impact on the social ambiance underscores their potential significance as key contributors to team dynamics. Moreover, the terms 'lively' and 'amusing' associated with being the life of the party highlight energetic, positively oriented social behaviors capable of eliciting favorable emotional responses, igniting enthusiasm, and cultivating a positive and motivating environment. People with high TBBs tend to be proactive on lifting the team's mood, infusing energy, and bringing the team together, with considerable potential to contribute to teamwork engagement (Costa, Passos & Bakker, 2014). The energizing emotions and the active social behaviors may spark energy and enthusiasm in the team and may indirectly contribute to the team's performance. Despite its recognized significance, this phenomenon has thus far evaded scientific scrutiny, leaving the specific behaviors it entails and their implications for team functionality and effectiveness yet to be fully explored (Fortuin, Bakker, Van Mierlo, Petrou & Demerouti, 2023).

TBBs can be situated within the broader literature by considering several key attributes (Fortuin et al., 2021). TBBs align with individual behaviors that can be linked to early research on dimensions of individual behavior in social interaction (Durlauf, 2001). Three dimensions have been highlighted, with slight variations in terminology: dominance, positive expressiveness, and social orientation (Driskell, Driskell, Burke & Salas, 2017). Dominant behaviors exude assertiveness and energy. Positive expressiveness includes spontaneous, playful, and group-oriented behaviors rather than those focused solely on efficient task performance. Finally, social orientation involves warm interpersonal behaviors that aim to bond with others. Based on these universal dimensions of interpersonal behavior, TBBs can be characterized as dominant, sociable, and positively expressive. In addition, these behaviors can exert bottom-up effects on the entire team, and if these behaviors are demonstrated consistently and at high intensity for extended periods, they can greatly improve team dynamics and performance. It is important to identify and cultivate these behaviors among team members to foster a positive and productive work environment.

Moreover, TBBs are conceptually linked to various individual traits and actions, including those exhibited by extra milers. Li and colleagues (2015) introduced the concept of extra milers to describe the behaviors of team members who willingly 'go the extra mile', offering assistance and voicing their opinions. Their study revealed a positive correlation between average helping and voicing behaviors and team-level monitoring, supportive actions, and overall team performance (Li et al., 2015).

Many modern organizations encourage workplace fun, assuming that play and enjoyment during work may have positive implications for the well-being of individual employees and the performance of organizations as a whole (Caracuzzo, Caputo, Callea, Cortese & Urbini, 2024; Lamm & Meeks, 2009). In fact, in today's fun-oriented and distracting work environments, the question is whether TBBs are more valuable when they are aligned with the prevailing team climate/environment or when they add something that the team lacks and may need (Fortuin et al., 2023).

Recent studies have investigated how individual team members can collectively enhance their team's efforts through the practice of TBBs, encompassing mood-enhancing, energizing, and uniting actions. These behaviors aim to cultivate a positive team atmosphere rather than solely concentrating on tasks, goals, or strategic objectives. Given the positive association between teamwork engagement and performance, TBBs hold significant potential for contributing to organizational success. Additionally, they prove to be particularly advantageous when they align with the overall ethos of the team, especially in environments characterized by a fun-oriented and open-to-distraction mindset. Overall, TBBs represent a promising avenue for enhancing team engagement and are expected to become increasingly vital in modern work settings (Fortuin et al., 2023). Hence, our objective has been to validate a measurement tool for this construct, enabling scientific exploration of the impact these behaviors exert within teams.

The Team Boosting Behaviors scale

Starting from interpersonal behaviors conceptualization, the Team Boosting Behaviors (TBBs) scale has been recently developed and validated (Fortuin et al., 2021). In the original validation paper by Fortuin and colleagues (2021), a formal definition of the construct was developed, critical TBBs were identified (Study 1) and, finally, a questionnaire to measure TBBs (Studies 2 and 3) was designed. Study 1 produced three behavioral dimensions that, together, defined TBBs as the extent to which team members exhibit: mood-enhancing, energizing, and uniting behaviors, directed towards other team members. Firstly, mood-enhancing behaviors are characterized by actions such as using humor and adopting a positive perspective on team functioning (Fortuin et al., 2021). Individuals engaging in mood-enhancing behaviors often employ humor, share amusing anecdotes, and reframe negative team events into positive ones. These behaviors underscore the spontaneous and somewhat impulsive nature of mood-enhancing actions, which prioritize social dynamics over task-oriented activities within interpersonal behavior dimensions.

Secondly, energizing behaviors are defined as actions that invigorate the team through energetic initiatives, such as organizing team activities and suggesting innovative ideas to surpass previous achievements (Fortuin et al., 2021). Team members exhibiting energizing behaviors may propose engaging games or initiate friendly competitions during lulls, serving as catalysts for change and innovation. These behaviors position individuals at the forefront of dominance and assertiveness within interpersonal dynamics. Lastly, uniting behaviors are characterized by their emphasis on sociability and fostering togetherness among team members. These actions involve inclusive participation in group activities, facilitating relationships through informal conversations, and showing genuine interest in the interests, work, and personal lives of all team members. Uniters prioritize building camaraderie and strengthening bonds within the team, fostering a sense of unity and cohesion (Fortuin et al., 2021).

The purpose of the Study 2 was to develop a self-assessment tool to measure team empowerment behaviors and its factorial validity (Phase 1). Individual TBBs were assessed through an initial set of 39 items. The result of the exploratory factor analysis suggested selecting 18 items, reflecting the hypothesized three-factor structure (mood-enhancing, energizing, and uniting behaviors). Furthermore, in the same study Fortuin and colleagues (2021) examined the conceptual links between the three dimensions of TBBs and related constructs. The results suggested that the associations were stronger for constructs that reflected behaviors (e.g., personal initiative), which are closer to TBBs, than for more distant, trait-like constructs (e.g., trait activity). Therefore, conceptual linkages showed that TBBs are consistently related to several individual characteristics and behaviors, which can be qualified along the team pathway.

In Study 3, CFA results supported the three-factor structure of the TBBs scale. Furthermore, criterion validity was examined based on correlations of TBBs with conceptually related team variables. TBBs were found to be positively correlated with affective and performance indicators of team effectiveness, indicating good validity of

criteria. Overall, the results confirmed the reliability and factorial, convergent, and criterion validity of the TBBs scale.

Aims of the study

In the present study, we aim to validate the Italian version of the TBBs. Firstly, we examined the factor structure, expecting alignment with mood-enhancing, energizing, and uniting behaviors. Secondly, we assessed psychometric properties through item-total correlations and reliability, anticipating strong reliability across the three dimensions. Finally, we explored the relationship between TBBs and Organizational citizenship behaviors (OCBs), expecting conceptual and empirical differentiation. The perspective of TBBs (Fortuin et al., 2021) posits that employees wield a considerable impact on the social milieu, emphasizing their potential significance as pivotal components in group dynamics (Costa et al., 2014). This aligns with discretional individual behaviors, not directly or explicitly recognized by the formal reward system, but which on the whole promote the effective functioning of the organization, exemplified by OCBs as proposed by Organ (1988). The relationship between TBBs and OCBs is rooted in how employees go beyond their formal job requirements to support team success. Social exchange theory (SET) (Blau, 1964) may explain this relationship. According to SET, individuals in a team or organization are motivated to engage in helpful and supportive behaviors based on the reciprocal exchange of benefits. Applied to the present study, we propose that when team members feel supported, respected, and valued, they are more likely to give back to the team these positive feelings through behaviors, both TBBs and OCBs. While TBBs specifically target team success by enhancing morale, cooperation, and team functioning, OCBs have a broader scope, encompassing actions that benefit the organization as a whole without necessarily improving the immediate team climate or dynamics. Thus, the perspective operates under the premise that TBBs prompt energizing emotions and proactive social behaviors by employing into the energy and enthusiasm within the team, thereby indirectly contributing to team performance (Durlauf, 2001).

Given the growing scientific interest in workplace energy and the absence of an Italian measure on this subject, our study seeks to validate the Italian version of the TBBs. This endeavor aims to address this gap, fostering more empirical research on TBBs in Italy, including its antecedents and outcomes.

METHOD

Translation and administration procedure

For the translation procedure from English to Italian, we followed the recommendations of Beaton and colleagues (Beaton, Bombardier, Guillemin & Ferraz, 2000) through three steps: (1) forward translation and adaptation of the original scale from English to Italian; (2) back translation; (3) revision committee. After the original 18-item English version of the TBBs scale (as presented by Fortuin and colleagues, 2021) was translated into Italian by two experts in work psychology and methodology, the first Italian version was retranslated into English by a bilingual psychologist. Once checked that there were no substantial differences between the final Italian version and the original English version, the final step involved a committee that agreed on the final Italian version.

The present study was part of a research project entitled 'Productive Energy Measure (PEM): A new assessment questionnaire', approved by the Ethics Committee of LUMSA University in Rome in May 2024.

A snowball sampling technique for recruiting participants in this study was used. Snowball sampling is a non-probability sampling method; participants were personally contacted via email by three researchers, according to the proximity, availability, and accessibility criteria. The inclusion criteria were: (a) age>18 years old and (b) employed in an organization. Each respondent was asked to invite other people to fill the questionnaire, and so on.

Regarding the administration procedure, data were collected through an online questionnaire on Google form. Each participant received a link to the questionnaire; the first page stated the research aims and asked them to answer with complete sincerity. Moreover, participants were informed that they voluntarily and anonymously took part in the study after reading and approving its general objectives and the informed consent before completing the questionnaire. The questionnaire required approximately 10 min to complete. Data collection began in May 2024 and ended in July 2024.

Participants

The sample consisted of 426 Italian employees (42.01% males; 57.76% females; .23% missing). Regarding age, the highest percentage of participants was aged 26-35 (42%), compared to others age range, that were, 18-25 (15%), 36-45 (10%), 46-55 (19%), 55-65 (13%) and more than 56 years old (1%).

In regards to educational attainment, 2% completed the compulsory school, 38% had a high school degree, and the remain of the sample had a University degree (i.e., 55.3%) or higher qualification (i.e., 4.7%). The average organizational tenure was about of 11.05 years (*SD* = 10.90). Participants worked mostly in the private sectors (65.3%), compared to public sector (34.7%). Most participants (86%) worked under permanent contracts and 14% were employed on a temporary basis. With regard to organizational size, 53% worked in organizations with more 250 employees, 12% worked in organizations composed from 50 to 250 employees, 23% worked in organizations composed from 10 to 50 employees, and 12% worked in organizations with less than 10 employees.

Participants worked within team equally distributed by number, that were team with less five components (34%), from six to ten components (32%), and more than ten components (34%). The age and team size variables have been codified in dummies to test the invariance measurement. More specifically, for gender dummy variable was male (0) and female (1), while team size was codified as follow: 'less five components' and 'from six to ten components' (0), and 'more than ten components' (1).

Measures

Team Boosting Behaviors (TBBs). Team Boosting Behaviors were evaluated using the Italian version of the TBBs scale. As in its original version (Fortuin et al., 2021) the scale consists of 18 items, measuring three distinct dimensions: Mood-enhancing behaviors, Energizing behaviors and Uniting behaviors. Each dimension was assessed by six items on a 7-point frequency scale, ranging from 0 = almost never to 6 = almost always. The Italian and English versions of the TBBs are presented in Appendix.

Organizational citizenship behaviors (OCBs). Organizational citizenship behaviors was assessed using 15 items from the Italian version of Podsakoff et al.'s (Podsakoff, MacKenzie, Moorman & Fetter, 1990) questionnaire (Argentero, Cortese & Ferretti, 2008). Unlike the original scale, the Italian version of the questionnaire emphasized the three areas most frequently described in the literature to explain and analyze OCBs: Altruism, measured by 6 items (e.g., "willingly help others who have work-related problems"); Civic virtue, measured by 5 items (e.g., "I respect company rules and policies even when no one is watching me"); and Conscientiousness, measured by 4 items (e.g., "I attend functions that are not required, but help the company image"). Participants were asked to evaluate each behavior using a 7-point Likert scale, ranging from 1 = it doesn't describe me at all to 7 = it describes me completely, consistent with Podsakoff et al.'s (1990) questionnaire. The Italian version of the scale showed good psychometric properties (e.g., Urbini et al., 2023). In the present study this measure is reliable for each dimension: Altruism (McDonald omega of .92); Civic virtue (McDonald omega of .86); Conscientiousness (McDonald omega of .86).

Data analysis

Firstly, descriptives and reliabilities (i.e. internal consistency) of the 18 items of TBBs scale and related dimensions were performed using statistical analysis software jamovi (version 2.3).

Secondly, in order to test confirmatory factor structure and measurement invariance of the TBBs scale in the Italian work context, we used linear structural equation models (SEM) via the M-PLUS package (version 8.53). To verify and confirm the factorial structure of the Team Boosting Behaviors scale, a confirmatory factor analysis (CFA) was performed on the data set to identify the best factorial model to fit the data. Thirdly, a series of multigroup confirmatory factor analysis (MGCFA) were tested on the entire sample in order to investigate whether the factor model showed measurement invariance and could be generalized across gender and team size. Following the guidelines and recommendations suggested by Cheung and Rensvold (2002), invariance analyses were performed applying parameter constraints in different step models to examine potential decreases in fit within the groups reported above. A configural invariance model (i.e., no constraints of the unstandardized item factor loadings) was initially tested, then a metric invariance model (i.e., all item factor loadings were constrained equal across groups)

and lastly a scalar (i.e., all factor loadings and intercepts were constrained equal across groups) and measurement (i.e., all measurement errors were constrained equal across groups) invariance model were examined.

Several indices were used for CFA and MGCFA to verify the goodness of fit of the TBBs scale in the Italian context, including the χ^2, the Root Mean Square Error of Approximation (RMSEA) (Steiger, 1990), the Standardized Root Mean Square Residual (SRMR) (Jöreskog & Sörbom, 1982), the Comparative Fit Index (CFI) (Bentler, 1990) and the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973). A model is usually considered reaching a satisfactory level of goodness of fit when RMSEA is lower than .08. Values of SRMR close to .06 are indicative of a good fit; values between .07 and .08 are considered a moderate fit; and values between .08 and .10 are indicative of a marginal fit. For the CFI and TLI indices, higher values demonstrate better adaptation. Values above .95 indicate very good adaptation; values between .90 and .95 indicate marginally acceptable adaptation; and values below .90 indicate poor adaptation. Also used were the χ^2 and chi-square difference tests ($\Delta\chi^2$) values, presented among the competing models, which assume multivariate normality and are sensitive to sample size. Specifically, a significant $\Delta\chi^2$ suggests rejecting the null hypothesis of invariance (Cheung & Rensvold, 2002), whereas a non-significant $\Delta\chi^2$ is an indicator that the hypothesis of measurement invariance cannot be rejected.

Finally, divergent validity was investigated using a comparison with alternative models, combining TBBs dimensions with Organizational citizenship behaviors (OCBs) dimensions via the M-PLUS package (version 8.53). More specifically, to investigate the divergent validity, i.e., how TBB scale diverges from another similar construct as the OCBs, the hypothesized measurement model with six distinct latent factors (Mood-enhancing behaviors, Energizing behaviors, Uniting behaviors, Altruism, Civic virtue, and Conscientiousness) was compared via a series of competitive models using the $\Delta\chi^2$ test.

RESULTS

Descriptive statistics and reliability

An item analysis, i.e., means, standard deviations, skewness, and kurtosis were assessed in order to evaluate the goodness of fit of the items in the Italian version (see Table 1). The item analysis showed that items had no extreme means and standard deviations close to zero; furthermore, no item violated normality assumptions, showing skewness and kurtosis values between −2 and +2 (Kline, 2011).

As the assumption about the equivalence of factor loadings may be not supported, reliability was assessed via coefficient omega (McDonald, 1970) rather than Cronbach's alpha coefficient. The coefficient omega was computed for each dimension of the TBBs scale to test reliability and showed excellent internal consistency: Mood-enhancing behaviors = .93, Energizing behaviors = .93, and Uniting behaviors = .92. Furthermore, corrected item-total correlations are between .72 and .86 for Mood-enhancing behaviors, .72 and .82 for Energizing behaviors, .71 and .85 for Uniting behaviors. In sum, these results show good psychometric properties for the 18 items of the TBBs scale and good reliability of each factor.

The descriptive statistics, skewness and kurtosis of the 18 items and reliability for each dimension are reported in Table 1.

Confirmatory factor analysis

The factorial structure proposed in the original version of TBBs scale (Fortuin et al., 2021), composed by Mood-enhancing behaviors, Energizing behaviors, and Uniting behaviors fits with the Italian sample. The three factors overall explained 82.4% of the total variance and all factor loadings (Table 1) were higher .32 (Tabachnick & Fidell, 2014).

In this study, indices indicated acceptable to good fit to the data for the three-factor solution, except for the RMSEA. The following fit indexes were obtained: [χ^2 (132) = 779.94, SRMR = .04, RMSEA = .11, CFI = .91, TLI = .90]. As reported, RMSEA showed a not-so-good fit (Browne & Cudeck, 1992; Little, 2013). However, as noted by Lai and Green (2016) the problem of inconsistent fit indices is not uncommon in applications of SEM, especially between RMSEA and CFI. When these two indexes are inconsistent it does not mean a diagnosis of particular problems in model specification or data (Lai & Green, 2016).

Table 1 – Psychometric properties and reliabilities of TBBs scale

Dimensions	Item	*M* (*SD*)	Skewness	Kurtosis	λ	C_{it}^{c}	ω-i	ω total
Mood-enhancing behaviors (MEB)	MEB1	4.43 (1.58)	−.94	.10	.81	.75	.93	
	MEB4	4.39 (1.10)	−.89	−.15	.86	.83	.92	
	MEB7	3.97 (1.59)	−.63	−.18	.89	.86	.91	
	MEB10	4.32 (1.52)	−.99	.38	.91	.86	.91	
	MEB13	3.65 (1.74)	−.50	−.70	.75	.72	.93	
	MEB16	3.77 (1.69)	−.62	−.45	.80	.76	.92	
								.93
Energizing behaviors (EB)	EB2	3.87 (1.52)	−.57	−.25	.80	.79	.91	
	EB5	3.73 (1.52)	−.49	−.24	.80	.80	.91	
	EB8	4.47 (1.53)	−.99	.29	.75	.72	.92	
	EB11	4.05 (1.55)	−.72	−.26	.84	.80	.91	
	EB14	3.91 (1.55)	−.69	−.18	.88	.82	.91	
	EB17	3.81 (1.61)	−.65	−.35	.85	.79	.91	
								.93
Uniting behaviors (UB)	UB3	4.20 (1.58)	−.82	.07	.85	.80	.91	
	UB6	4.25 (1.56)	−.83	.06	.90	.85	.90	
	UB9	4.50 (1.46)	−1.06	.59	.80	.76	.91	
	UB12	4.13 (1.61)	−.38	−.72	.73	.71	.92	
	UB15	4.49 (1.50)	−1.07	.46	.84	.81	.91	
	UB18	4.02 (1.67)	−.69	−.39	.77	.74	.91	
								.92

Legenda. λ = factor loadings; C_{it}^{c} = corrected item-total correlations; ω-i = omega if item is deleted.

Multigroup confirmatory factor analysis (MGCFA) and invariance across gender and team size

As a further psychometric test to verify the goodness and adaptation of the TBBs scale in the Italian context, we tested a series of multiple-group CFAs, in which different and progressively more stringent forms of measurement equivalence (configural, metric, scalar, measurement error) were used for the variables gender and team size.

The first multiple-group analysis tested a model of configural invariance (Model 1), i.e., an unconstrained baseline model in which all parameters freely differ between male and female samples. The fit of this configural model provides the baseline value against which subsequently specified equivalence models are compared. In fact, all nested models were formally contrasted via the $\Delta\chi^2$ comparison. Model 2 was tested for metric invariance (see Table 2), i.e., all factor loadings are simultaneously constrained across gender groups. More specifically, $\Delta\chi^2$ M2-M1 was non-significant and this suggested that Model 2 (i.e., metric against configural models of measurement invariance) could be considered equivalent, i.e., no significant group differences for factor loading, compared to Model 1. This result indicates that metric invariance is supported. Therefore, males and females attributed the same meaning to the items measured by the latent factors. The third model investigated is the scalar invariance (Model 3), i.e., a model in which the intercepts are constrained to be equal across groups. The results on the comparison M3-M2 showed a significant $\Delta\chi^2$, indicating that scalar invariance is not supported.

A second multi-group analysis was tested on a configurational invariance model (Model 1) of small and medium team size. Model 2 was tested for metric equivalence. Results indicated that Model 2 could be considered equivalent to Model 1, as $\Delta\chi^2$ M2-M1(18) = 11.69 was non-significant. Thus, metric invariance was supported. In other words, employees within small and medium groups attributed the same meaning to the items measured by the latent factors. The third model tested for the scalar invariance (Model 3). Results ($\Delta\chi^2$ M3-M2(18) = 11.73 was non-significant) indicated that scalar invariance is supported. Therefore, the factor model is equivalent across small and medium groups. Finally, we tested the measurement error invariance (Model 4), i.e., a model in which the measurement errors are constrained to be equal across groups. The following results were found: $\Delta\chi^2$ M4-M3(18) = 23.12 was significant. This result indicates that measurement error invariance is not supported.

All fit indices and $\Delta\chi^2$ for Measurement invariance across gender and team size were reported in Table 2.

Divergent validity

Via CFA a hypothesized measurement model (M1) with six distinct latent factors, including three TBBs factors and three OCBs factors was tested. Subsequently, we compared M1 to alternative models: a one-factor model (M2); a two-factor model (M3), with as factor 1 the TBBs dimensions and factor 2 the OCBs dimensions; nine five-factor models (M4-M12), combining, by couple, TBBs dimensions with OCBs dimensions. The fit indices of each model and model comparison are reported in Table 3.

CFA results showed that M1 had acceptable fit indices. Furthermore, the results indicated that $\Delta\chi^2$ was significant; therefore, the alternative models did not fit better to the data than M1.

Therefore, the hypothesized M1 should be preferred (see Figure 1), suggesting that three TBBs dimensions are empirically distinct from OCBs dimensions. In other words, the discriminant validity of the TBBs scale was supported. Furthermore, Mood-enhancing behaviors was positively and significantly correlated with Altruism (r = .42; p<.001), Civic virtue (r = .26; p<.001), and Conscientiousness (r = .25; p<.001). In a similar vein, Energizing behaviors was positively and significantly correlated with Altruism (r = .47; p<.001), Civic virtue (r = .36; p<.001), and Conscientiousness (r = .43; p<.001). Finally, also Uniting behaviors was positively and significantly correlated with Altruism (r = .52; p<.001), Civic virtue (r = .38; p<.001), and Conscientiousness (r = .39; p<.001).

DISCUSSION

Our research indicates that Team-Boosting Behaviors (TBBs) differ from other positive discretionary behaviors, such as Organizational citizenship behaviors (OCBs), that also contribute to organizational success. While OCBs involve extra-role actions that enhance organizational effectiveness and psychological well-being through altruism,

Table 2 – Results of invariance across gender and team size

Invariance	Model	χ^2	*df*	CFI	TLI	SRMR	RMSEA	$\Delta\chi^2$	Δdf	*p*-value
				Gender (Male: *N* = 179; Female: *N* = 246)						
Configural invariance	M1	1002.58	264	.895	.878	.046	.118	–	–	–
Metric invariance	M2	1012.62	282	.901	.892	.066	.110	10.04	18	ns
Scalar invariance	M3	1046.64	300	.899	.897	.066	.108	44.06	18	<.01
				Team size (Small: *N* = 281; Medium: *N* = 145)						
Configural invariance	M1	1049.19	264	.886	.867	.069	.097	–	–	–
Metric invariance	M2	1060.88	282	.896	.887	.050	.114	11.69	18	ns
Scalar invariance	M3	1072.61	300	.897	.895	.051	.110	11.73	18	ns
Measurement error invariance	M4	1095.73	318	.896	.900	.052	.107	23.12	18	<.001

Legenda. Model = model of measurement invariance; *df* = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; $\Delta\chi^2$ = chi squared difference between the compared models; Δdf = degrees of freedom difference between the compared models; M1 = hypothesized 6-factor model; M2 = 1-factor model; M3 = 2-factor model (TBB, OCB); M4 = 5-factor model (MEB and AL).

conscientiousness, and civic virtue, TBBs specifically focus on behaviors that enhance team mood and effectiveness through assertiveness, sociability, and expressivity. This validation study adds to other international versions of the scale, such as the Polish one (Haffer, 2024). TBBs assess the impact of individual team-building behaviors on team dynamics and performance. The scale provides valuable insights into psychological factors that can improve the work environment and serves as a bridge between academics, practitioners, and labour experts, deepening the understanding of psychological aspects of the workplace. TBBs join those approaches which improve work outcomes. Indeed, TBBs act at team level (Bakker, 2022), complementing, for example, the playful work design approach, which acts at the individual level in facilitating positive organizational outcomes, such as OCBs themselves (Caracuzzo et al., 2024).

Limitation and future studies

Limitations of the study concern its cross-sectional design with self-reported data. Assessing individuals' TBBs with observer-rated measures could enhance the depth of the exploration of TBBs' dynamics with team outcomes.

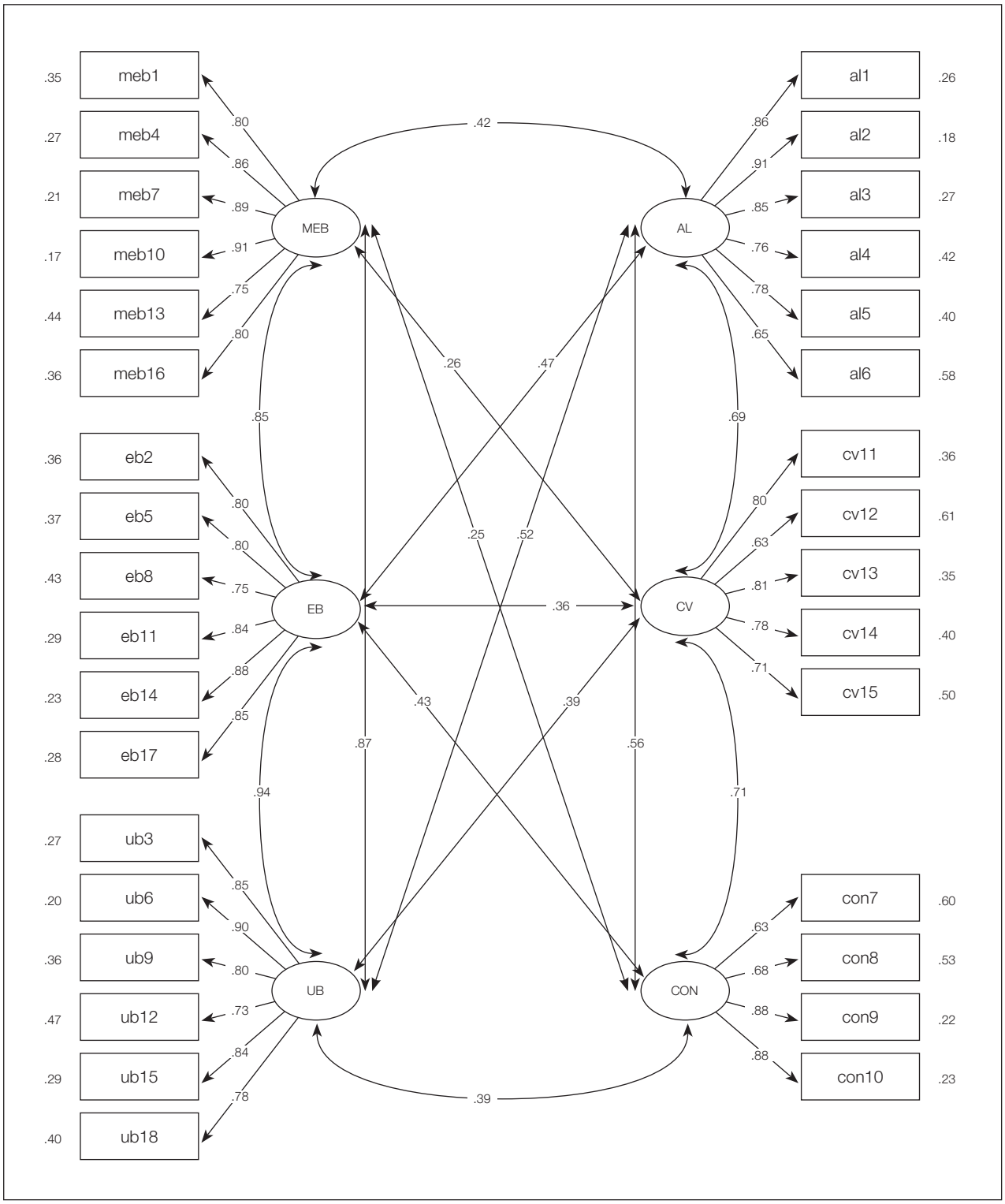
Table 3 – Divergent validity – model comparisons among dimensions' of TBBs and OCBs

Model	χ^2	*df*	χ^2/df	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$	Δdf
M1	1727.108	488	3.53	.895	.887	.077	.060	–	–
M2	5174.468	495	10.45	.605	.579	.149	.146	3.477.36**	7
M3	3008.680	494	6.72	.788	.773	.109	.066	1.281.57**	8
M4	3232.204	485	6.66	.768	.748	.115	.122	1.505.09**	3
M5	2629.651	485	5.42	.819	.803	.102	.114	902.53**	3
M6	2780.213	485	4.82	.689	.653	.123	.116	587.70**	3
M7	3084.724	485	6.36	.781	.761	.112	.104	1.357.61**	3
M8	2496.613	485	5.14	.830	.815	.099	.097	769.50**	3
M9	2671.642	485	5.50	.816	.799	.103	.112	944.54**	3
M10	3023.958	485	6.23	.786	.767	.111	.102	1.296.85**	3
M11	2508.492	485	5.17	.829	.814	.099	.095	781.38**	3
M12	2660.295	485	5.48	.817	.800	.103	.110	933.18**	3

Legenda. Model = model of measurement invariance; *df* = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; Δdf = degrees of freedom difference between the compared models; M1 = hypothesized 6-factor model; M2 = 1-factor model; M3 = 2-factor model (TBB, OCB); M4 = 5-factor model (MEB and AL); M5 = 5-factor model (MEB and CON); M6 = 5-factor model (MEB and CV); M7 = 5-factor model (EB and AL); M8 = 5-factor model (EB and CON); M9 = 5-factor model (EB and CV); M10 = 5-factor model (UB and AL); M11 = 5-factor model (UB and CON); M12 = 5-factor model (UB and CV).
** $p<.001$

Moreover, as mentioned in the Results section, even if the RMSEA values do not fit properly, it might depend on the sample size. Thus, future studies involving different samples should pay attention to this fit index. Additionally, this study was limited to assess the psychometric properties of the TBBs scale, also distinguishing TBBs' dimensions to other similar constructs (i.e., OCBs). Thus, inferential studies evaluating the TBBs' antecedents and TBBs' effects on organizational outcomes are needed. Lastly, since TBBs refer to team-level behaviors, multilevel analyses are necessary to thoroughly understand TBBs' effects on organizational outcomes. Managers could benefit from being aware of TBBs' influence at team level, thus future studies may be designed with the aim of performing multilevel analyses.

Figure 1 – Comparison among TBBs' dimensions and OCBs' dimensions



Legenda. MEB = Mood-enhancing behaviors; EB = Energizing behaviors; UB = Uniting behaviors; AL = Altruism; CV = Civic virtue; CON = Consciousness.

CONCLUSION

This study shows that the Italian version of TBBs scale is a valid and reliable instrument for conducting empirical research in organizations. The TBBs are part of a set of behaviors grounded in a proactive personality. Proactive individuals who engage in actions aimed at enhancing team morale can effectively do so through the three behaviors identified by the TBBs' framework. Given the complex dynamics underlying team building, future research should examine the relationship between TBBs and individual factors (e.g., personality traits, emotions), as well as team-specific characteristics (e.g., context type, team activity, leadership styles, team size, etc.).

Exploring the various ways in which proactivity occurs in the workplace – similar to the existing literature on job crafting and playful work design – provides deeper insights into how both mood and productivity can be improved within teams. This, in turn, helps managers and employees create positive and dynamic work environments that support a healthy balance between psychological well-being and the achievement of optimal performance.

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APPENDIX

Items of English and Italian version of Team Boosting Behaviors scale

ENGLISH [ITALIAN]
Mood-enhancing behaviors (MEB)
1. I make sure that there is laughter in our team [Mi assicuro che ci siano momenti allegri nel mio team]
2. In my team, I make jokes [Nel mio team, faccio battute]
3. I try to entertain my team mates [Cerco di intrattenere/divertire i colleghi del mio team]
4. I add a cheerful touch to our team [Aggiungo un tocco di allegria nel mio team]
5. I break a negative atmosphere in our team with a joke [Quando nel nostro team l'atmosfera è negativa, faccio una battuta]
6. I tell stories when we meet [Racconto storie divertenti quando ci incontriamo]
Energizing behaviors (EB)
1. I take initial action to set our team in motion [Faccio la prima mossa per attivare il mio team]
2. I am the first to take action in our team [Sono il primo ad agire nel mio team]
3. In our team, I set the example by doing [Nel mio team, do l'esempio con i fatti]
4. I propose new ideas for our team [Propongo nuove idee per il mio team]
5. I stimulate our team [Stimolo il mio team]
6. I convince my team mates to join the action [Convinco i miei colleghi di team a partecipare all'azione]
Uniting behaviors (UB)
1. I strengthen the ties between my team mates [Contribuisco a rafforzare i legami tra i miei colleghi di team]
2. I strengthen the ties with my team mates [Contribuisco a rafforzare i legami con i miei colleghi di team]
3. I respond to my fellow team members' need [Rispondo alle necessità dei membri del mio team]
4. I approach my team mates in a personal way [Mi relaziono con i miei colleghi di team anche a livello personale]
5. I assess the atmosphere in our team [Sono attento all'atmosfera che c'è nel mio team]
6. I involve all my team mates in what we do [Coinvolgo tutti i miei colleghi di team in ciò che facciamo]

Note. Items in the Team Boosting Behavior scale are reported in their respective factors: (MEB) = Mood-enhancing items; (EB) = Energizing items; (UB) = Uniting items.