BMC Psychology

RESEARCH

Open Access

Portuguese version of the citizenship fatigue scale: adaptation and evidence of validity

Paula C. Neves[1*], Cláudia Andrade[1,3] and Lia Alves[2]

Abstract

Background Citizenship fatigue has been identified as a negative consequence of performing organizational citizenship behaviors and has been studied due to its undesirable effects on employees and organizations. This article aims to present the results of adapting the citizenship fatigue scale to Portuguese language and to provide evidence of its validity.

Methods The research methodology involved multiple stages. Initially, the Citizenship Fatigue Scale was translated into Portuguese using a robust back-translation process involving three bilingual translators to ensure semantic accuracy. Subsequently, for psychometric testing, the Citizenship Fatigue Scale and Compulsory Citizenship Behavior Scale were administered to a sample of 406 employees from different economic sectors (103 male; 303 female), aged 18 to 70 years. Reliability and validity indicators were calculated from the CFA structure, employing the maximum likelihood estimation with bootstrapping. Gender invariance was examined at three different levels: [1] configural invariance [2], factor loading invariance and [3] factor loading and intercept invariance.

Results The internal consistency, of the whole scale, measured by Cronbach's alpha, was 0.94. The composite reliability value was also very satisfactory (CF = 0.94). The variance extracted from mean (AVE) value of 0.79 was higher than the required limit of 0.50, indicating an adequate fit of the model. The confirmatory analysis supported a single-factor model and showed good to very good fit indexes (CFI = 1.00; GFI = 0.99; RMSEA ≤ 0.01). The model was successfully replicated with a male and female sample.

Discussion The results confirm that the Portuguese version of the Citizenship Fatigue Scale is a reliable instrument for research with Portuguese speaking samples and international research.

Keywords Citizenship fatigue scale, Citizenship fatigue, Psychometric properties, Validity

*Correspondence:
Paula C. Neves
pneves@esec.pt
[1]Present address: Polytechnic of Coimbra, Coimbra Education School, INED - Center for Research and Innovation in Education, Polytechnic of Porto, Coimbra, Portugal
[2]NICSH- Research Center for Social and Human Sciences- ESEC- Coimbra, Coimbra, Portugal
[3]Center of Psychology, Porto University, Porto, Portugal

Introduction

Citizenship fatigue (CF) [7] is a construct that refers to the degree to which individuals feel drained, worn out, or tired due to engaging in organizational citizenship behaviors. Organizational citizenship behaviors (OCB) [49] are all behaviors or actions performed voluntarily by employees that go beyond the requirements of their jobs and contribute to the success of organizations.

Over the last several decades, OCB has become an important topic of research because of its crucial importance for both employees and organizations [32]. Despite the many studies that showed a positive effect of OCB on employee performance [36, 44, 47, 8] and [5], draw attention to the potential negative consequences for employees who carry out OCB. The authors showed that engaging in OCB can be draining and deplete personal resources. When these resources become scarce, internal conflict might arise as the individual begins to feel worn out. Because performing OCB is self-initiated and requires personal investment, whether in time or effort, which means that it consumes personal resources [22], internal forces may act to depress or even reverse employees' willingness or ability to continue engaging in OCB.

Therefore, by performing OCB, because it is draining and depleting [5, 8], employees may experience fatigue attributed specifically to OCB, and consequently, it may decrease the likelihood of future acts of OCB. To clarify this emotional, state [7] proposed a new concept designated as citizenship fatigue, which was developed to specifically address the phenomenon of tiredness stemming from investing in organizational citizenship behaviors.

Citizenship fatigue is defined as "employees feel worn out, tired or on edge, attributed to engaging in organizational citizenship behavior". Moreover, "employees who experience citizenship fatigue feel frustrated or underappreciated" [7, p.57]. Citizenship fatigue is a state characterized by both affect and cognition [34], as well as a belief that one is going beyond the call of duty or engaging in discretionary behaviors that are contributing to these feelings. Therefore, CF is not only an unfavorable state for employees, but also leads to adverse outcomes for the organization, such as reduced levels of subsequent citizenship behavior [7].

Originally [7], rooted the CF construct in research on compassion fatigue [10]. However, while compassion is rooted in feelings of empathy and responsibility for the care of people in desperate and often hopeless situations, CF is rooted more in the willingness to engage in relatively discretionary acts that benefit the organization. Thus, whereas compassion fatigue is associated with feelings such as sadness and helplessness, employees who experience CF feel frustrated or underappreciated [7]. Although CF could resemble stress, role overload, and burnout, it is different from these constructs which means that employees can experience CF without necessarily suffering from stress, overload, or burnout [7]. Feeling stressed, overwhelmed or burned out, affects employees' ability to do perform their job in general [20], while CF is focused only on energy or personal resources devoted to engaging in OCB. Employees reporting CF, because they feel frustrated or underappreciated, stop being available to perform future OCB, but, at the same time, it may not influence other aspects of performance. This means that they may continue to perform their core job responsibilities at a high level [7].

However, not all employees who engage in OCB experience CF. Conservation of resources (COR) theory [25] is an especially useful framework for understanding why engaging in OCB does not always lead to CF, and not all people who engage in OCB experience CF. Because engaging in OCB implies increased investment and therefore leads to the expenditure of resources and energy, several personal and contextual factors can influence the balance between energy expenditure and available resources (personal and contextual) which means that the relationship between OCB and CF is contingent or conditional [7]. Citizenship fatigue is influenced by factors in the work context, such as pressure for citizenship [16, 23] quality of teamwork [17], work-family conflict [2, 16] and perception of organizational support [17, 23]. However, CF is also related to individual factors such as emotional stability [34], workaholism [2] or motives for engaging in OCB. For instance [31], suggest that when employees intrinsically enjoy going the extra mile, they are less likely to feel CF [46]. also reported that an employee who goes the extra-mile voluntarily on his or her own initiative (resulting from intrinsic motivation) shows less CF than others who perform OCB for instrumental motives (extrinsic motivation).

Although research is still uncovering the conditions under which employees experience CF, some studies have highlighted the negative implications of CF for organizations. In addition to the decrease in OCB [7] and [23], found an inverse relationship between CF and voluntary knowledge sharing and thriving at work, demonstrating that CF is an important factor in organizational and employee performance, and needs to be examined in more detail.

To date, there is only one scale that assesses CF, which has been adapted and used in various cultural contexts, such as China [34], Pakistan [2, 16], Israel [17], and the Turkish context [29]. Although a few studies (e.g. [41]) have used an adapted version of the CF Scale and have illustrated its usefulness, validation studies of the instrument for Portugal and the Portuguese language are lacking.

This study intended to generate some essential information concerning the content adequacy of the translated CF Scale for Portuguese, and some of its measurement properties, mainly regarding score reliability (e.g., internal consistency) and validity (construct-structural validity).

In addition, this study aims to test, in line with the studies by Bolino et al. [7] and [17], whether CF can be clearly distinguished from another concept linked to citizenship pressure, which is the case of compulsory citizenship behavior [54, 55].

Method

Sample

The sample used consisted of 406 participants (103 male and 303 female), aged 18 to 70 years old (M=42.96, SD=11.03). Of these, 171 (42.1%) worked in the public sector, 214 (52,7%) in the private sector, and 21 (5.2%) were self-employed. Regarding working hours, 229 (58,9.6%) worked fixed hours, 49 (12.1%) worked in shifts, and 49 (11.1%) worked flexible hours. For the level of education, 9 (2.2%) had an elementary school education, 97 (23.9%) had a secondary or vocational education, and 300 (73,9%) had a higher education.

Measures

Citizenship fatigue scale

The CF Scale, as developed by [7], is a self-report measure composed of 6 items representing a single dimension. The items are answered on a Likert scale from 1 to 5 (from "strongly disagree" to "strongly agree").

Compulsory citizenship behavior

The Compulsory Citizenship Behavior (CCB) was assessed using the Portuguese version [40] of [55] five-item scale. Participants indicated their response on a scale ranging from 1 (never) to 5 (always). The internal consistency, measured by Cronbach's coefficient, was reported as α=0.85. An example item from the scale is: "The management in this organization puts pressure on employees to engage in extra-role work activities beyond their formal job tasks."

We chose the CCB to test convergent and discriminant validity because it is similar to the Citizenship Pressure construct, used for the same purpose by the author of the CF scale. Moreover, the CCB Scale is already adapted for the Portuguese population.

Translation

The translation of the CF Scale was performed according to the procedures suggested by [18, 24] (translation-back-translation method) using two independently operating bilingual, native Portuguese-speaking translators. The back-translation of the two versions was performed by another translator. The English version thus obtained was later compared to the original version, and great similarities in the semantic content were verified. The differences were analyzed by the three intervening parties in the process, and a final formulation was submitted to a pre-test (test technique, 3).

Procedures

This study was conducted with a non-probabilistic sample consisting of professionals from different economic sectors. Data collection followed snowball methodology. The inclusion criterion factors included currently exercising a professional activity. The response rate in snowball sampling can vary significantly, often depending on the initial contacts' willingness to participate and depends on the extent of their social networks. Thus, regarding sample size, although there is no defined minimum sample size for exploratory factor analysis (EFA) [35], we followed the recommended rule of thumb ratio of a minimum of participants per item, aiming for a large size [15] and stopped data collection when the ratio was reached.

Participation was anonymous, and all individuals provides their informed consent to participate in the study. Informed consent was mandatory to start the questionnaire. The study was approved by the Ethics Committee of the Polytechnic Coimbra (N°25_CEIPC_2022).

Analytical strategy

SPSS software (version 26) and AMOS (version 28) from IBM SPSS Inc, Chicago, IL, were used for the statistical analysis of the data. AMOS facilitated structural equation modeling (SEM), allowing for the shaping of data through structural equations and providing a diagrammatic representation of our theoretical model.

Confirmatory analysis through SEM, as outlined by [37], evaluates the quality of fit of a theoretical model and the structural relationships among the measured variables. The connections between observed variables and factors are modeled using a series of linear regressions based on a covariance matrix [12].

Data screening and data management

To obtain the distribution profile of the sample's sociodemographic characteristics, descriptive analyses were carried out.

Univariate outliers were identified by examining standardized score values exceeding the absolute threshold of 3.29 [30] before confirmatory factor analysis (CFA), and no cases were excluded. Additionally, the presence of multivariate outliers was assessed using Mahalanobis squared distance (D^2). No observations exhibited values indicative of outliers (p1 and p2<0.001).

To evaluate the normality of the variables, skewness and kurtosis values were examined, adhering to the

criteria (|Sk| < 3; |Ku| < 7) outlined by [30], confirming normality. Notably, there were no missing cases for the CF Scale.

Statistical analysis

The psychometric properties of the Items were initially assessed using descriptive statistics [mean, standard deviation (SD), skewness (Sk), and kurtosis (Ku)]

Exploratory Factor Analyses (EFA) and Confirmatory Factor Analysis (CFA) was employed to assess the adequacy of the proposed theoretical model in capturing the correlational structure of the observed study variables. For CFA, adjustment indices were utilized for this evaluation. The maximum likelihood estimation method (MLE) was initially chosen to estimate the proposed model due to its widespread use and robustness [37]. Although our variables are technically ordinal variables, we treat them as continuous since many simulations have shown that the results obtained are reliable if the classes of the ordinal variables are at least 5 and the sample is close to a normal distribution [9, 26, 42]. To address potential concerns with this approach, we employed the bootstrap method available in AMOS to obtain robust standard errors, thereby improving the precision of our estimates with a robust estimator.

The CFA for the model involved an analysis of the indices of quality of fit, encompassing the standardized ratio of chi-squared per degrees of freedom ($\chi 2/df$; [56]), the Tucker Lewis Index (TLI; 53), the comparative fit index (CFI; 4), and the Adjusted Goodness of Fit Index (AGFI, 28) developed as an extension of the Goodness of Fit Index (GFI) to account for model complexity. The Root Mean Square Error of Approximation (RMSEA; p[rmsea ≤ 0.05] [50, 51], the Standardized Root Mean Squared Residual (SRMR; [38]), the Modified Expected Cross-Validation Index (MECVI; [11]); Akaike Information Criterion (AIC; [1]), and the Bayesian Information Criterion (BIC; [48]).

The overall quality of fit of the hypothesized model to the observed covariance matrix is deemed satisfactory when the $\chi 2/df$ is less than 2 [56]. Additionally, the relative CFI and GFI indices are considered acceptable when they exceed 0.90 [4, 37]. For the TLI, values above 0.90 indicate a good fit [53]. The RMSEA is expected to fall within the range of [0.05; 0.08], with a non-significant probability p [RMSEA ≤ 0.05] [50, 51]. Furthermore, the SRMR should be below 0.08 to indicate a good fit [39]. The MECVI is useful for comparing models, with lower values indicating a better fit [11]. Also, for model comparison and parsimony, the AIC [1] and BIC [48] suggest that smaller values indicate a better fit and a more parsimonious model.

Regarding reliability, the scale's internal consistency was analyzed by calculating the Cronbach's alpha coefficient (α) and the composite reliability (CR), with values equal to or greater than 0.70 considered acceptable [6, 43].

The scale's construct validity was tested through both an initial Exploratory Factor Analysis (EFA) followed then by a Confirmatory Factor Analysis (CFA).

Convergent validity was evaluated using composite reliability (CR) and average variance extracted (AVE), following the methodology proposed by [19]. Convergent validity refers to the degree to which items that are supposed to measure the same construct are actually related. The CR value was calculated to assess internal consistency, with values above 0.70 considered acceptable. The AVE was also calculated, with values above 0.50 indicating that the latent factor explains more than half of the variance in the observed variables, suggesting good convergent validity [19, 21]. Additionally, Pearson's correlation coefficients (r) between CF and CCB were employed as an additional measure to assess convergent validity.

Discriminant validity was assessed using the Average Variance Extracted (AVE), following the Fornell-Larcker criterion. The AVE is a measure of how much variance in the observed variables is explained by the latent factor (construct) relative to the variance due to measurement error. To establish discriminant validity, the square root of the AVE for the target construct should be greater than the correlations between that construct and other theoretically related but distinct constructs. This ensures that the construct is more strongly associated with its own items than with items measuring other constructs.

For this analysis, we chose the CCB (Compulsory Citizenship Behavior) scale to test discriminant validity. By comparing the AVE of the CF scale with its correlation to CCB, we aimed to ensure that the CF construct remains distinct from related constructs, supporting the scale's discriminant validity.

Lastly, to assess the scale's invariance across genders, three levels of measurement invariance were examined: [1] configural invariance, ensuring that the model's configuration remained consistent for different groups; [2] factor loading invariance, ensuring equivalence in the magnitude of factor loadings across groups; and [3] factor loading and intercepts invariance, as outlined by [45]. Each level of invariance was compared to the preceding one to evaluate changes in the fit quality. Chi-squared difference tests were employed, with a criterion of a change of < -0.01 in the comparative fit index (CFI) [13] for significance. Finally, t-tests for independent samples were utilized to explore gender differences, employing the total score of the scale [14]. guidelines were followed, considering effect sizes (d) of 0.20, 0.50, and 0.80 as small, moderate, and large differences, respectively.

Finally, confirmatory factor analyses were used to compare the CF Scale with the CCB Scale.

Table 1 Translation and descriptive statistics of the citizenship fatigue scale items

	Range	Mean (SD)	KU	Sk
CF1- Because of going the extra mile for my organization, I feel "on edge" about various things. **Porque extravaso as minhas funções, sinto-me "no limite"**	1–5	2.74 (1.22)	-0.805	0.166
CF 2- I feel worn out because I go beyond the call of duty for my organization. **Sinto-me desgastado (a) porque ultrapasso os meus deveres para com a minha organização.**	1–5	2.90 (1.29)	-1.050	0.028
CF 3 - Doing so much for my organization leaves me mentally or physically exhausted. **Fazer tanto pela minha organização deixa-me física e mentalmente exausto.**	1–5	3.02 (1.29)	-1.014	-0.055
CF 4 - I often lack energy because I go beyond my job duties at work. **Muitas vezes falta-me energia pois vou muito para além dos meus deveres profissionais.**	1–5	3.10 (1.31)	-1.113	−0.164
CF 5 - I am tired of going beyond the call of duty for my organization. **Estou cansado (a) de fazer muito mais do que são as minhas obrigações para com a minha organização.**	1–5	3.01 (1.32)	-1.115	−0.028
CF 6 Volunteering to take on extra tasks and assignments at work has left me feeling drained. **Voluntariar-me para assumir compromissos e tarefas extra fez-me sentir esgotado.**	1–5	2.91 (1.27)	−0.956	0.054

Table 2 Results of the confirmatory factor analyses for the measurement models

	χ2(df)	χ2/df	TLI	CFI	GFI	AGFI	RMSEA	*p* [rmsea ≤ 0.05]	SRMR	MECVI
Model 1 (6 items)	67.57 (9)	7.51	0.96	0.98	0.95	0.88	0.13	≤ 0.001	0.02	0.23
Model 2 (5 items)	35.98 (5)	7.20	0.97	0.99	0.97	0.91	0.12	0.001	0.01	0.13
Model 3 (4 items)	1.61 (2)	0.81	1.00	1.00	0.99	0.99	≤ 0.001	0.72	0.004	0.04

Note χ2 = Chi square; df = Degrees of freedom; TLI = Tucker Lewis Index; CFI = Comparative Fit Index; GFI = Goodness of Fit Index; AGFI=; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; MECVI = Maximum Likelihood Expected Cross-Validation Index

Results

All the items ranged 1–5, and the mean ranged from 2.74 (SD = 1.22) for item CF 1 to 3.10 (SD = 1.31) for item CF 4. The skewness ranged from −0.164 to 0.166, and the kurtosis ranged from – -1.115 to -0.805. Accordingly, the items scores, univariately speaking, follow an approximately normal distribution for the studied population since their distributional properties, judging from the Sk and Ku values are suggestive of appropriate psychometric sensitivity [30]. The descriptive statistics of the items are shown in Table 1.

Exploratory factor analysis results

Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis (PCA) with Varimax rotation. This approach was selected as it simplifies data interpretation by reducing dimensionality and maximizing the explained variance [27, 52].

To assess the suitability of the data for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were performed. The KMO value was 0.91, indicating excellent sampling adequacy, and Bartlett's test of sphericity was statistically significant ($\chi^2 = 2564.66$, df = 15, $p < .001$), suggesting that the data were appropriate for factor analysis [52].

The factor loadings for the scale items ranged from 0.82 to 0.94, demonstrating strong relationships between each item and the underlying factor. Specifically, the loadings were: CF1 = 0.83, CF2 = 0.94, CF3 = 0.92, CF4 = 0.94, CF5 = 0.93, and CF6 = 0.82.

The Composite Reliability (CR) was calculated as 0.81, indicating good internal consistency and reliability for the unidimensional factor structure. The Average Variance Extracted (AVE) was also 0.81. The analysis revealed a single factor with an Eigenvalue greater than 1, explaining 80.5% of the total variance. The scree plot further supported the extraction of one dominant factor, confirming a unidimensional structure consistent with its original form. Additionally, the internal consistency of the factor was assessed using Cronbach's alpha, which was 0.95, indicating excellent reliability.

Confirmatory factor analysis results

The initial model (Model 1), composed of 6 items and one factor, showed poor quality fit indices, since most of the values deviated considerably from the reference intervals [$N = 406$; χ2 (9) = 67.57; χ2/df = 7.51; TLI = -96; CFI = 0.98; GFI = 0.95; AGFI = 0.88; RMSEA = 0.13; p [rmsea ≤ 0.05] ≤ 0.001; SRMR = 0.02; MECVI = 0.23; AIC = 91.57; BIC = 139.65]. The quality of fit indices for all the models are described in Table 2.

After careful analysis, we recognized that the initial model exhibited poor fit indices, making respecification necessary. Modification indices revealed significant covariances between the measurement errors of items 1 and 2 (MI = 28.41) and items 3 and 5 (MI = 13.79). To address this without allowing correlated errors, we

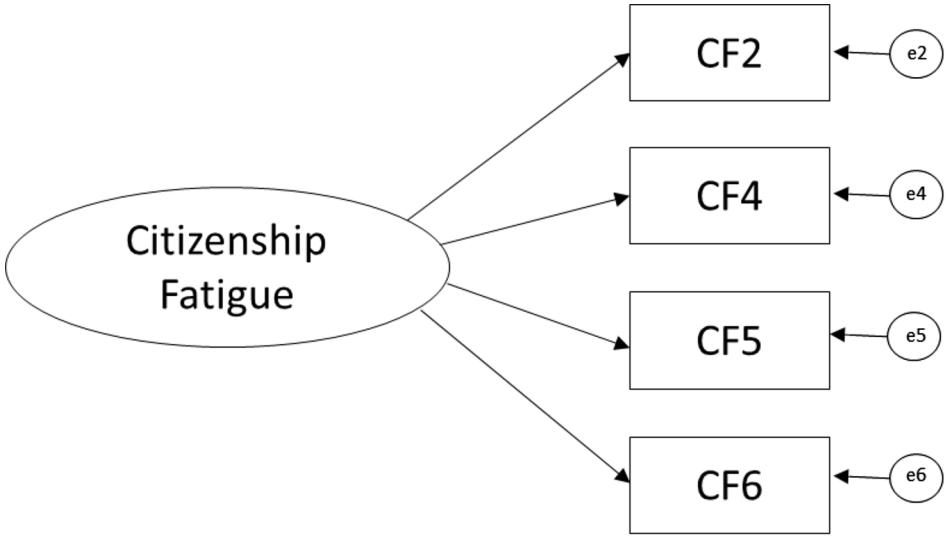

Fig. 1 Single-factor model of the citizenship fatigue scale

Table 3 Fit indices and delta values for configural, metric and scalar invariances

	χ2(df)	χ2/df	TLI	CFI	RMSEA	SRMR	Δ χ2	ΔCFI	ΔRMSEA
Configural Invariance	5.14 (4)	1.28	0.99	0.99	0.03	. 001	-	-	-
Metric Invariance	7.47 (7)	1.07	0.99	1.00	0.01	. 002	2.33	0.01	−0.02
Scalar Invariance	17.11 (11)	1.56	0.99	1.00	0.04	0.01	11.97	0.01	0.01

Note χ2=Chi square; df=Degrees of freedom; TLI=Tucker Lewis Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation; SRMR=Standardized Root Mean Square Residual

decided to reduce the scale. This decision was based on several factors: we first examined item performance statistics, such as item-total correlations and factor loadings, to identify underperforming items. We then assessed the scale's internal consistency reliability, ensuring that Cronbach's alpha values exceeded the acceptable threshold of 0.70. Finally, we conducted a Confirmatory Factor Analysis (CFA) to evaluate the factor structure and model fit. The revised model, Model 2 (after elimination of item 1), reduced to five items, did not demonstrate improved item quality [N=406; χ2 (5)=35.98; χ2/df=7.20; TLI = -96; CFI=0.98; GFI=0.95; AGFI=0.88; RMSEA=0.13; p [rmsea≤0.05]≤0.001; SRMR=0.02; MECVI=0.23; AIC=55.98; BIC=55.98].

The final scale reduction allowed for a more robust measurement, Model 3 (after elimination of items 1 and 3), shown in Fig. 1, [N=406; χ2 (2)=1.61; χ2/df=0.81; TLI=1.00; AGFI=0.99; RMSEA≤0.001; p [rmsea≤0.05]=0.72; SRMR=0.004; MECVI=0.04; AIC=17.61; BIC=49.66]. The chi-squared index per degree of freedom (χ2/df) showed a value of less than 2 (χ2/df=0.81), indicating an acceptable fit when comparing the differences between the matrix predicted by the statistical program and the actual matrix. The CFI compares the discrepancy between the data and the most restrictive hypothetical model. Ideally, the value of the index should be higher than 0.90, and in this study the CFI value was 1.00, fully satisfying this condition. The same can be said of the GFI value, AGFI and TLI. The RMSEA assesses whether the model fits the population reasonably well, which is the case in this study, where the value is below the threshold of ≤0.05, indicating a very good fit (RMSEA≤0.001). Furthermore, all the estimated factor loadings were significant at p<.01, ranging from 0.78 to 0.94.

After conducting the factor analysis, the internal consistency results were highly satisfactory. The Cronbach's alpha for the Citizenship Fatigue scale was excellent (α=0.94), as was the Composite Reliability (CR=0.94). The strong CR value of 0.94, which indicates excellent reliability, aligns with the high Cronbach's alpha, further confirming the robustness of the scale's internal consistency. The variance extracted from mean (AVE) value of 0.79 was higher than the required limit of 0.50, indicating an adequate fit of the model.

Gender invariance

Table 3 shows the fit indices for configural invariance and the differences (delta) in the CFI and RMSEA fit indices, with a view to verifying metric and scalar invariance.

The findings revealed configural invariance of the CF Scale across the two samples (male and female), as all the considered fit indices met the expected criteria. Furthermore, the results also supported the presence of metric and scalar invariance, given that the delta values for both the CFI and RMSEA were consistently equal or below 0.01 in all instances. The quality of fit indices for all the models are described in Table 3.

Once configural invariance, metric invariance and scalar invariance have been achieved, it is possible to test for gender differences in CF [33, 45]. The results of the t-test for independent samples showed that there were no significant differences between female (M=3.00, SD=1.19) and male (M=2.75, SD=0.99), t (404)=1.90, p=.057, d=0.22 regarding CF.

Pearson's correlation coefficients (r) between CF and CCB were used to assess convergent validity. As expected, the constructs correlated positively and significantly (r=.762, p<.01).

In addition, like [7] did when developed the original scale, due to the high correlation between CCB and CF (r=.762, p<.01) and to ensure that the measures of CF and CCB were distinct, confirmatory factor analysis was used to compare the fit of a model with two latent variables representing CF and CCB with the fit of a single-factor model in which all the items from the two scales were loaded onto a single factor. The separate two-factor model [χ2 (26)=69.92; χ2/df=2.69;; TLI=0.98; CFI=0.98; GFI=0.96; AGFI=0.94; RMSEA=0.07; p [rmsea≤0.05]=0.09; SRMR=0.07; MECVI=0.27; AIC=278.2; BIC=350.31] provided a significantly better fit to the data than the one-factor model [χ2 (27)=242.2; χ2/df=8.97; TLI=0.89; CFI=0.92; GFI=0.85; AGFI=0.76; RMSEA=0.14; p [rmsea≤0.05]≤0.001; SRMR=0.03; MECVI=0.69; AIC=107.92; BIC=184.04], which suggests that CF and CCB are distinct measures. We also used the average variance extracted (AVE) to further evaluate the discriminant validity between FC and CCB. Using the procedures outlined by [19], we found that the square root of the AVE of CF (88) and CCB (78) exceeded their correlation (r=.75), which suggests that the measures capture distinct constructs. Taken together, these findings indicate that citizenship fatigue, and CCB had acceptable discriminant validity.

Discussion

The current study aimed to analyze the psychometric qualities of the CF Scale [7] for use in Portuguese-speaking contexts. The translation of the scale was performed according to the procedures suggested by [18, 24].

The CF Scale is a self-reported measure composed of six items developed to measure a particular state of mind where, because of engaging in organizational citizenship behavior, employees feel worn out, tired or on edge. The single-factor structure proposed by the authors [7] was confirmed in the Portuguese population sample. Although several studies used adapted versions of the scale, only two [7, 29] present data from the instruments. Our results are similar in terms of the reliability indices and factor structure indicating that the model fit adequately to the sample. However, while the original version [7] and the Turkish version [29] have 6 items, our version has only 4 items. Items 1 and 3 have been eliminated. The Portuguese version, with only 4 items, showed good internal consistency, Cronbach's alpha for the CF Scale was very satisfactory, as was the composite reliability value (α=0.94, CR=0.94). Our results also revealed that the CF construct is distinct from that which results from Citizenship Pressure, that is, CCB.

In summary, the results of the present study underscore the validity of the CF Scale adapted to the Portuguese context and show that this instrument can be considered a valid and reliable tool for researchers and practitioners, as is now an instrument that allows us to identify the potential harmful effects of engaging in OCB, for employees and organizations.

Limitations

Although several CF Scale have already developed, the non-probabilistic, convenience-based sample of this study suggests a need for further validation in different populations to enhance generalizability. Thus, future research could use a representative and diverse sample from specific professional cohorts to have a deeper analysis of the results that were found in the current study. Future research should aim to replicate these results in diverse contexts to confirm the scale's robustness and applicability. Moreover, because our sample was collected using a snowball technique it was not possible to find a methodology to properly assess test-retest reliability, thus, to check this in future studies would be important. Another limitation that should be noted is related the use of cross-sectional data. Future research should also look at the longitudinal stability or invariance of the citizenship fatigue scale as the scale's stability over time.

It should be also noted that the use of self–report data that may increase the probability of incurring common method variance. Therefore, future research could use longitudinal designs or collect data from multiple sources to further reduce the risk of common method bias. Another limitation is that criteria validity studies were not performed. The objective of this study, being the first carried out in Portugal, was primarily to test the structural validity of the instrument and to corroborate if the unifactorial structure of CF Scale were also valid and reliable in the Portuguese population. Thus, further studies are needed to study other facets of validity, such as the CF scores criterion validity.

Implications

The concept of CF is proposed by [7] in the context of research into the negative implications of carrying out OCB. Employees reporting CF, because they feel frustrated or underappreciated, may stop being available to perform future OCB, or stop voluntary sharing knowledge, which can be very important for organizations success.

This instrument provides to Portuguese companies with a practical and useful instrument that allows them to monitor and prevent one of the negative effects of excessive OCB on employee well-being and on their organizations. At the same time, because we already know that some factors in the work context (different from OCB) potentiate citizenship fatigue, such as: pressure for citizenship, perception of organizational support, quality of teamwork or work-family conflict, this instrument can provide management with an indicator that draws attention to other contextual factors within the organization that may be negatively influencing employee performance and well-being. By assessing citizenship fatigue levels, HR can adjust workloads and enhance recognition programs to foster a more balanced work environment. This scale can inform leadership development by highlighting the impact of management styles on employee engagement and well-being. Additionally, it can help in the development of designing effective employee well-being initiatives and stress management programs.

Furthermore, it can also be used in future research to explore the dynamics of CF in various Portuguese organizational settings, potentially contributing to a better understanding and management of employee behaviors and well-being. For instance, is useful for studying the relationship between citizenship fatigue and employee engagement, job satisfaction, and organizational commitment. Additionally, it can help understanding how leadership styles, recognition programs, and workload management influence fatigue levels.

Researchers can also apply it in longitudinal studies to track the cumulative effects of CF on employee performance and mental health over time.

Conclusion

This study successfully translated and validated the CF Scale into Portuguese, ensuring its semantic accuracy through a rigorous back-translation process and expert review. The psychometric evaluation, including exploratory (EFA) and confirmatory factor analysis (CFA), demonstrated that the final model had excellent fit indices, confirming the scale's construct validity. The scale exhibited high internal consistency, with strong Cronbach's alpha and composite reliability values, and good convergent validity, as indicated by a significant positive correlation with CCB.

Thus, the present research is an important contribution to organizational behavior research for making available a valid and reliable research instrument in another different language, making research in Portuguese possible and facilitating transnational research.

Overall, this study provides a robust tool for assessing CF, with strong psychometric support, enabling future investigations into its impact on organizational behavior and employee health in Portuguese-speaking environments.

Abbreviations

CF	Citizenship Fatigue
OCB	Organizational Citizenship Fatigue
CCB	Compulsory Citizenship Behavior

Author contributions

PCN and CA carried out the investigation planning, collected the sample andcarried out the theoretical framework. PCN, CA and LA performed the statistical analysis, discussion, and conclusions. All authors contributed to the article approved the submitted version.

Funding

This work is funded by National Funds through the FCT - Fundação para a Ciência e a Tecnologia, I.P., under the scope of the project UIDB/05198/2020 (Centre for Research and Innovation in Education, inED)". https://doi.org/10.54499/UIDB/05198/2020.

Data availability

The data that support the findings of this study are available upon reasonable request to the authors.

Declarations

Ethics approval and consent to participate

The Research was carried out in compliance with the Helsinki Declaration and was approved by the ethics committee of the Polytechnic of Coimbra (N°25_CEIPC_2022). All participants gave their written informed consent to participate in this study, before starting the questionnaire.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 5 June 2024 / Accepted: 4 November 2024
Published online: 13 November 2024

References

1. Akaike H. A new look at the statistical model identification. IEEE Trans Autom Control. 1974;19(6):716–23. https://doi.org/10.1109/TAC.1974.1100705.
2. Ali Nisar Q, Haider S, Waqas A, Khan WA, Selem KM. (2024). Cost of organizational citizenship behaviors: serial mediation model of citizenship fatigue. Management Research Review, December 2023. https://doi.org/10.1108/mrr-08-2023-0540
3. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. Spine. 2000;25(24):3186–91.
4. Bentler PM. Comparative fit indexes in structural models. Psychol Bull. 1990;107(2):238–46. https://doi.org/10.1037/0033-2909.107.2.238.
5. Bergeron DM. The potential paradox of organizational citizenship behavior: good citizens at what cost? Acad Manage Rev. 2007;32(4):1078–95. https://doi.org/10.5465/AMR.2007.26585791.

6. Bland JM, Altman DG. Statistics notes: Cronbach's alpha. BMJ. 1997;314(7080):572. https://doi.org/10.1002/9781118445112.stat00164.
7. Bolino MC, Hsiung HH, Harvey J, LePine JA. Well, i'm tired of tryin'! Organizational citizenship behavior and citizenship fatigue. J Appl Psychol. 2015;100(1):56–74. https://doi.org/10.1037/a0037583.
8. Bolino MC, Turnley WH. The personal costs of citizenship behavior: the relationship between individual initiative and role overload, job stress, and work-family conflict. J Appl Psychol. 2005;90(4):740–8. https://doi.org/10.1037/0021-9010.90.4.740.
9. Bollen KA. Structural equations with latent variables. Wiley; 1989.
10. Bride BE, Figley CR. The fatigue of compassionate social workers: an introduction to the special issue on compassion fatigue. Clin Soc Work J. 2007;35(3):151–3. https://doi.org/10.1007/s10615-007-0093-5.
11. Browne MW, Cudeck R. Alternative ways of assessing model fit. Sociol Methods Res. 1992;21(2):230–58. https://doi.org/10.1177/0049124192021002005.
12. Byrne BM. (2013). Structural equation modeling with Amos: Basic Concepts, applications, and programming, Routledge, Taylor and Francis Group. https://doi.org/10.4324/9781410600219
13. Chen F, Curran PJ, Bollen KA, Kirby J, Paxton P. An empirical evaluation of the use of fixed cutoff points in RMSEA test statistic in structural equation models#. Sociol Methods Res. 2008;36(4):462–94. https://doi.org/10.1177/0049124108314720.
14. Cohen J. A power primer. Psychol Bull. 1992;112(1):155–9. https://doi.org/10.1037/0033-2909.112.1.155.
15. Costello AB, Osborne J. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. Practical Assess Res Evaluation. 2005;10:1–9. https://doi.org/10.7275/jyj1-4868.
16. De Clercq D, Suhail A, Azeem MU, Haq IU. Citizenship pressure and job performance: roles of citizenship fatigue and continuance commitment. Asia Pac J Hum Resour. 2021;59(3):482–505. https://doi.org/10.1111/1744-7941.12241.
17. Eliyahu N, Somech A. Team citizenship pressure: how does it relate to OCB and citizenship fatigue. Small Group Res. 2023;54(2):243–76. https://doi.org/10.1177/10464964221105422.
18. Figueiredo JM, Lemkau PV. Psychiatric interviewing across cultures: some problems and prospects. Social Psychiatry. 1980;15:117–21. https://doi.org/10.1007/BF00578142.
19. Fornell C, Larcker DF. Structural equation models with unobservable variables and measurement error: Algebra and statistics. J Mark Res. 1981;18(3):382–8. https://doi.org/10.1177/002224378101800313.
20. Gilboa S, Shirom A, Fried Y, Cooper C. A meta-analysis of work demand stressors and job performance: examining main and moderating effects. Pers Psychol. 2008;61:227–71. https://doi.org/10.1111/j.1744-6570.2008.00113.x.
21. Hair JF, Black WC, Babin BJ, Anderson RE. Multivariate Data Analysis. EMEA: Cengage Learning; 2019.
22. Halbesleben JRB, Harvey J, Bolino MC. Too engaged? A conservation of resources view of the relationship between work engagement and work interference with family. J Appl Psychol. 2009;94(6):1452–65. https://doi.org/10.1037/a0017595.
23. He P, Zheng W, Zhao H, Jiang C, Wu TJ. Citizenship pressure and knowledge hiding: the mediating role of citizenship fatigue and the moderating role of supervisor–subordinate guanxi. Appl Psychol. 2023;June(1–34). https://doi.org/10.1111/apps.12490.
24. Hill M, Hill A. (2002). Investigação por questionário: Sílabo. Lisboa.
25. Hobfoll SE. Conservation of resources: a new attempt at conceptualizing stress. Am Psychol. 1989;44(3):513.
26. Hutchinson SR, Olmos A. Behavior of descriptive fit indexes in covariance structure modeling when variables are treated as continuous but are in fact categorical. Multivar Behav Res. 1998;33(4):511–50. https://doi.org/10.1080/10705519809540111.
27. Jolliffe IT, Cadima J. (2016). Principal component analysis: A review and recent developments. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 374(2065), 20150202. https://doi.org/10.1098/rsta.2015.0202
28. Jöreskog KG, Sörbom D. (1981). The use of LISREL in factor analysis and structural equation modeling. In T. A. Widaman, editor, Handbook of multivariate experimental psychology (pp. 293–340).
29. Karadeniz G, Uzunbacak H. Adaptation of citizenship fatigue scale into Turkish culture: the study of reliability and validity. Sosyal Mucit Acad Rev. 2023;4:558–76. https://doi.org/10.54733/smar.1377965.
30. Kline RB. Principles and practice of structural equation modeling. 4th ed. New York, NY: The Guilford Press; 2016.
31. Klotz AC, Bolino MC, Song H, Stornelli J. Examining the nature, causes, and consequences of profiles of organizational citizenship behavior. J Organizational Behav. 2018;39(5):629–47. https://doi.org/10.1002/job.2259.
32. Kossek E, Ozeki C. Work-family conflict, policies, and the job-life satisfaction relationship: a review and directions for organizational behavior-human resources research. J Appl Psychol. 1998;83:139–49.
33. Luong R, Flake JK. Measurement invariance testing using confirmatory factor analysis and alignment optimization: a tutorial for transparent analysis planning and reporting. Psychol Methods. 2023;28(4):905–24. https://doi.org/10.1037/met0000441.
34. Liu X, Yu K. Emotional stability and citizenship fatigue: the role of emotional exhaustion and job stressors. Pers Indiv Differ. 2019;139(March):254–62. https://doi.org/10.1016/j.paid.2018.11.033.
35. MacCallum RC, Widaman KF, Zhang S, Hong S. Sample size in factor analysis. Psychol Methods. 1999;4:84–99. https://doi.org/10.1037/1082-989x.4.1.84.
36. Mallick E, Pradhan RK, Tewari HR, Jena LK. Organizational citizenship behaviour, job performance and HR ractices: a relational perspective. Manage Labour Stud. 2014;39(4):449–60. https://doi.org/10.1177/0258042X15578023.
37. Marôco J. Análise de equações estruturais: Fundamentos teóricos, software and aplicações. 2nd ed. Report Number: Pero Pinheiro; 2014.
38. Maydeu-Olivares A. Assessing the size of model misfit in structural equation models. Psychometrika. 2017a;82(3):533–58. https://doi.org/10.1007/s11336-016-9552-7.
39. Maydeu-Olivares A. Maximum likelihood estimation of structural equation models for continuous data: standard errors and goodness of fit. Struct Equation Modeling: Multidisciplinary J. 2017b;24(3):383–94. https://doi.org/10.1080/10705511.2017.1286221.
40. Neves P. Comportamentos compulsivos de cidadania organizacional na população Docente Portuguesa. In: Cró ML, editor. Currículo E Formação. Coimbra: Instituto Politécnico de Coimbra; 2009. pp. 119–27.
41. Neves PC, Andrade C. Citizenship fatigue as mediator between compulsory citizenship behavior and work-family conflict. Revista Psicologia Organizações E Trabalho. 2021;21(4):1785–91. https://doi.org/10.5935/rpot/2021.4.21945.
42. Norman G. Likert scales, levels of measurement and the laws of statistics. Adv Health Sci Educ. 2010;15:625–32. https://doi.org/10.1007/s10459-010-9222-y.
43. Nunnally JC. (1978). An overview of psychological measurement, Wolman, B.B, editor, Clinical Diagnosis of Mental Disorders, Springer, Boston, MA, pp. 97–146.
44. Podsakoff PM, MacKenzie SB, Paine JB, Bachrach DG. Organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research. J Manag. 2000;26(3):513–63. https://doi.org/10.1177/014920630002600307.
45. Putnick DL, Bornstein MH. Measurement invariance conventions and reporting: the state of the art and future directions for psychological research. Dev Rev. 2016;41:71–90. https://doi.org/10.1016/j.dr.2016.06.004.
46. Qiu Y, Lou M, Zhang L, Wang Y. Organizational citizenship behavior motives and thriving at work: the mediating role of citizenship fatigue. Sustain (Switzerland). 2020;12(6):2231. https://doi.org/10.3390/su12062231.
47. Santoso PB, Asbari M, Siswanto E, Fahmi K. The role of job satisfaction and organizational citizenship behavior on performance: evidence from Indonesian teachers. Int J Social Manage Stud. 2020;01:22–31. https://doi.org/10.5555/ijosmas.v1i1.2.
48. Schwarz G. Estimating the dimension of a model. Annals Stat. 1978;6(2):461–4. https://doi.org/10.1214/aos/1176344136.
49. Smith CA, Organ DW, Near JP. Organizational citizenship behavior: its nature and antecedents. J Appl Psychol. 1983;68(4):653–63. https://doi.org/10.1037/0021-9010.68.4.653.
50. Steiger JH. Structural model evaluation and modification: an interval estimation approach. Multivar Behav Res. 1990;25(2):173–80. https://doi.org/10.1207/s15327906mbr2502_4.
51. Steiger JH, Lind JC. (1980). Statistically based tests for the number of common factors. In Paper presented at the Annual Meeting of the Psychometric Society, Iowa City, 1980.
52. Tabachnick BG, Fidell LS. (2019). Using multivariate statistics (7th ed.). Pearson.
53. Tucker LR, Lewis C. A reliability coefficient for maximum likelihood factor analysis. Psychometrika. 1973;38(1):1–10. https://doi.org/10.1007/BF02291170.

54. Vigoda-Gadot E. Compulsory citizenship behaviour: theorizing some dark sides of the good soldier syndrome in organizations. J Theory Social Behav. 2006;36:77–93. https://doi.org/10.1111/j.1468-5914.2006.00297.
55. Vigoda-Gadot E. Redrawing the boundaries of OCB? An empirical examination of compulsory extra-role behavior in the workplace. J Bus Psychol. 2007;21(3):377–405. https://doi.org/10.1007/s10869-006-9034-5.
56. Wheaton B, Muthen B, Alwin DF, Summers GF. (1977). Assessing reliability and stability in panel models. Sociol Methodol, 8, 84–136.

Publisher's note