Construction and validation of the Scale for the Evaluation of the Perception of Counterproductive Behaviors in Organizations (EPCBO)

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Abstract

The purpose of this study was to develop a scale for the perception of counterproductive work behaviors. Employees from four independent samples filled in the questionnaire (total N=390). Two studies were conducted. The first study aimed to item construction and exploratory factor analysis, whereas the second aimed to instrument validation and confirmatory factor analysis. The results confirmed a four factor scale (misuse of information, production deviance, absenteeism and withdrawal, as well as interpersonal counterproductive behavior). The scale has 20 items and can be applied to a wide range of organizations. Implications for managers and future research are also discussed.

Key words: *counterproductive work behavior, its perception, factor analysis*

Résumé

Cet article présente la construction d'une échelle pour évaluer la perception sociale des employées sur les comportements contra productifs a travaille. Quatre groups de participants ont répondu ce questionnaire (N = 390). On a réalisée deux études. La première étude on a génère les questions et on a réalise une analyse factorielle exploratoire. Dans le deuxième étude on a valide et on a réalise une analyse factorielle confirmatoire. Les résultats obtenus confirment une structure des questions dans quatre facteurs (utilisation erronée de information, déviance dans la production, absentéisme, retrayé, comportements interpersonnelles contre productifs). L'échelle contiens 20 questions et on peut l'utilise dans organisations variées. En fin, on discute les implications pour les managers et les nouvelles directions de recherche.

Mots cléfs: *comportements contra productifs, perception sociale, analyse factorielle*

Rezumat

Scopul acestui articol a fost de a construi o scală de evaluare a percepţiei angajaţilor asupra comportamentelor contraproductive la locul de muncă. Chestionarul a fost completat de patru grupuri independente de angajaţi (N total = 390). Au fost realizate două studii. Primul studiu a avut ca scop construirea itemilor şi realizarea unei analize factoriale exploratorii, iar cel de-al doilea studiu a avut ca scop validarea instrumentului şi confirmarea structurii factoriale a acestuia. Rezultatele au confirmat structurarea itemilor în patru factori (folosirea necorespunzătoare a informaţiilor, devianţa legată de producţie, absenteism şi retragere, precum şi comportamente contraproductive interpersonale). Scala are 20 de itemi şi poate fi utilizată într-o gamă largă de organizaţii. Sunt discutate implicaţii pentru manageri şi direcţii viitoare de cercetare.

Cuvinte cheie: *comportamente contraproductive la locul de muncă, percepţia lor, analiză factorială.*

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Introduction

Interest for research in the field of organizational deviance and counterproductive work behaviors has increased in the beginning of the '90s. Counterproductive work behavior (CWB) consists of volitional acts that harm or intend to harm organizations and their stakeholders (e.g., clients, co-workers, customers and supervisors) (Spector & Fox, 2005, p.152). Specific CWBs include abusive behavior against others, aggression (both physical and verbal), working incorrectly on purpose, sabotage, theft and withdrawal (e.g., absenteeism, lateness and turnover). Counterproductive behaviors are intentional – that is, the employee decides to behave in such a way. Starting with the identification of such behaviors in organizations, researchers were concerned with the implications that these behaviors had on employees and organizations, and also with the construction of analysis and intervention models in this field. In the literature, individual counterproductive behaviors are studied using mostly self-report instruments. Currently, the most frequently used scales are those developed by Bennett and Robinson (2000), and Fox and Spector (2002).

The interest for studying counterproductive behaviors is supported by the cost analysis of such behaviors. According to Vardi and Weitz (2004), these costs can be economic (e.g., losses of productivity due to lateness at work, theft or sabotage) or social (e.g., psychological or physical effects, withdrawal or low work satisfaction for those who are targets of such behaviors).

The purpose of this research is to develop an instrument for the analysis of the employees' perception on the counterproductive behaviors within their organization. Further on, we shall present three important theories that offer explanatory mechanisms for the relation between perceived behaviors at workplace and the tendency act in a similar manner for those who share the same working environment.

Potential predictors of counterproductive behaviors are frequently studied in the literature. The main predictors include variables such as personality dimensions, interpersonal conflicts at work, organizational justice, work satisfaction, negative emotions at work (Pitariu, Sulea, Zaborilă & Maricuțoiu, 2008; Herschovis, Turner, Barling, Arnold, Dupre, Innes, LeBlanc & Sivanthan, 2007; Dalal, 2005). A less explored aspect in this field of research refers to the implications of the perception of such counterproductive behaviors in organizations. In other words, counterproductive behaviors affect not only directly targeted persons or the organization itself, but also those who observe and witness this type of behavior within the organization or department. Previous researches on this issue reveals that employees who witness and have firsthand knowledge about violent acts tend to suffer from increased stress, lower morale, psychological withdrawal, a growing sense of insecurity, physical injuries, decreased productivity, and increased absenteeism and turnover (Towler, 2001b apud. Vardi & Weitz, 2004)

Other types of effects were emphasized by Robinson and O'Leary-Kelly (1998) who have examined how antisocial employee behavior is connected with similar behavior of colleagues. By identifying a positive relation between antisocial behaviors initiated by an individual and those observed at his/her colleagues; the authors emphasize the importance of such behaviors observed in the workplace.

The limited research from the perspective of the perception of counterproductive behaviors, the impact of such observed behaviors and limited instruments for studying such aspects constitute important premises for the present research.

The relevance of a scale that measures the employees' perception on the counterproductive behaviors within their organization is sustained by the theories that support the importance of the perception of counterproductive behaviors in working climates. The first theory presented is the *social learning theory* developed by Bandura (1986 apud Boncu, 2002) that can be used to analyze factors that encourage antisocial behavior, such as the presence of role models in the work context. Arguments that support such an approach in the deviance field are based on the fact that individuals observe in their working environments people who display counterproductive behavior. This observing process can influence observers to behave in a similar manner especially if there are no foreseen negative consequences and if there are personal reasons to act this way.

Another explaining approach is the *social information processing theory*. According to this theory, individuals use information from their immediate social environments to interpret events, develop appropriate attitudes, and understand expectations concerning their behavior and its consequences (Salancik & Pfeffer, 1978). The

social context determines how individuals behave by influencing the way they think and feel about aspects of their working environment (Salancik & Pfeffer, 1978).

Behavioral contagion may be viewed as a third explanatory perspective. This theory, was developed by Wheeler (1966) and is based on a disinhibition dynamic – initially, at the individual level, there is a blockage or a restraint for carrying out a certain behavior, but the restraint is obviated due to the presence of a model who enacts the specific behavior that is repressed by the individual (Boncu, 2002). This way, if an individual desires to manifest a certain behavior, but for some reasons he doesn't, and observes another person who displays the desired action (e.g., a form of counterproductive behavior) disinhibition can occur and the individual gets to act behaviorally in the desired direction.

The above mentioned theories were tested in empirical studies. Robinson and O'Leary-Kelley (1998) suggested that applying the perspective of a social information processing theory to antisocial behavior suggests that individual group members, working in a shared social environment, will receive similar social cues convincing them that certain types and levels of antisocial behavior are tolerable adaptations to their shared working conditions. The same authors revealed, in this frame, the influence that working groups have on the manifestation of counterproductive or antisocial behavior. Consequently, a positive relation between antisocial behavior within a group and the level of antisocial behaviors of group members was emphasized. Group climate reflects global perceptions of group members regarding a specific aspect of working environments, perceptions that influence performed behaviors within a group. Similarly, role models reflect group norms and these too can shape the behavior of members. Robinson and O'Leary-Kelly (1998) revealed in their study that groups displaying high levels of antisocial behavior may influence members to perform antisocial actions. They also found a consistent pattern suggesting that as the richness of the group experience increases, members are more likely to adjust their level of antisocial behavior to that of the group.

Sulea (2008) also pointed out that perception of counterproductive work behaviors at the working place is a significant predictor for individual self-reported counterproductive behaviors. Perception of counterproductive behavior in work setting had a moderately strong relation with negative emotions at work that had a significant relation further on with individual counterproductive behaviors (organizational and interpersonal). Also, the perception of deviance is directly related to organizational counterproductive behaviors.

The presented theory and the results of studies emphasize the fact that counterproductive working behavior is not an individual phenomenon, and that, besides personal variables, there is an important source of influence from working group members, direct leaders or managers that coordinate the implementation of organizational policies and rules.

These explaining theories and the results of studies show that organizations have the ability and responsibility to influence counterproductive behavior through shaping the working group dynamics and hierarchical relations.

Objectives

The objective of the present research is to develop and validate a questionnaire in order to assess the employees' perception on counterproductive behaviors at their working place.

In order to achieve this goal, we have conducted two separate studies. *In the first study* we have centralized the counterproductive behaviors, we have established taxonomy for them and we have obtained 115 unique behavioral examples. These were reviewed and ranked by expert panels, finally resulting in five main categories and 45 relevant behaviors. These behaviors formed the first version of the instrument, and we collected answers from 216 employees. Their answers allowed us to compute discrimination indices for each of the items, resulting in a pool of 24 behaviors that discriminated the subjects at an acceptable level. These items were included in an exploratory factor analysis. In *the second study*, we conducted a confirmatory factor analysis on 198 employees from three different organizations in order to verify the solution obtained in the first study. After this stage, the final questionnaire consisted of 20 items.

Study 1. Item construction and exploratory factor analysis

The goal of this study is the construction of the EPCBO and has three steps. The first two steps deal with the generation of an extensive behavior list so that it reflects all types of behavior consistent with the counterproductive behavior definition, as

well as the item review after certain criteria. In the final step we have proceeded to the item selection and preliminary factor analysis. The steps we have realized and the results are described below.

Method

Item generation

The purpose of this stage was to create a large pool of exemplars of counterproductive behaviors consistent with the definition of counterproductive work behaviors. For this purpose, several types of counterproductive behaviors were generated and refined in more manners. Samples of employees were asked to give examples of various forms of counterproductive behaviors. An initial pool of 115 examples of such behavior was obtained, taking into account considerable redundancy.

Sample and procedure

We recruited 15 respondents from different domains (IT, military, medical, academic, sales, logistics, financial, automotive). All the respondents were full time employees. Of all the participants, 52% were women and 33% of the respondents had management positions. The general objective of the research was presented within a working session and they were asked to generate and discuss a definition of counterproductive behaviors in organizations. Respondents also generated and defined five categories of such behaviors. Further on, respondents were asked to describe six incidents corresponding to each category they had previously defined. Table 1 presents the respondents' definition and generated categories.

Table 1. Definition of counterproductive behaviors and main behavior categories

Counterproductive behavior is a kind of behavior that opposes the objectives of the organization or of the working group, its direct or indirect consequence being the decrease of productivity, work inefficiency; it is not benefiting for employees (as far as interpersonal relations are concerned), organization (productivity and image) or third-parties (customers, collaborators).

	Categories	Definitions
1	Misuse of information	*This category includes behaviors like information distortion, revealing secrets, misinformation, failing to inform and lie.*
2	Deviance related to production	*This category includes behaviors like failing to meet deadlines, faulty task accomplishment (as far as time and/or quality are concerned), destruction of company property, causing damage, resources abuse, alliance making and nepotism.*
3	Theft	*Appropriation of company goods/resources.*
4	Absenteeism and withdrawal	*Refers to behaviors like being late for work, pauses, leaves, spending time with other actions than task-related activities, stalling, missing.*
5	Counterproductive interpersonal behaviors	*These include gossip, telling on somebody, heavy unjustified criticism, disrespect towards people within the organization, behaviors orientated towards other colleagues or persons with the purpose of doing physical, psychological or verbal harm or aggression.*

Item review

A new group consisting of 30 people (supervisors and subordinates of various ages and professions from several organizations) has analyzed two types of lists: one with the dimensions (categories) of counterproductive behavior and their definitions and the other with randomly arranged specific examples extracted from the previous stage. The participants' task was to allocate each example to the category where it belonged (retroversion technique). Only the items that had a reallocation frequency of over 67% were retained. By using this technique we have obtained a list of 66 behavioral examples. The retained items were grouped into dimensions (categories). We have developed instructions in accordance with this, followed by the identified dimensions. Each definition was marked in the upper part of the page, followed by randomly placed items from each category. A group of 32 evaluating participants were asked to rate individually, on a scale from 1 to

7, each item, according to its gravity (minor/medium/severe), in order to have a larger and diverse pool of specific behaviors. For each item, mean and standard deviation were calculated, and for the final scale only items that have an average value that covers the scale completely and have a standard deviation of less than 1.5 were selected. If an item has a higher standard deviation, it means that evaluators could not agree on the level of gravity described by the specific example. The mean indicates the position on the scale and the standard deviation indicates the evaluators' agreement in giving a mark/grade. The lower the standard deviation, the closer the evaluators are getting towards and unanimous opinion. By proceeding this way, we have come up a list of 45 behaviors.

Item selection and preliminary factor analysis

In the third stage of this study we followed two steps: (a) item selection and (b) preliminary factor analysis for identifying the structure of factors for the current scale.

Item selection

Sample and procedure

A total of 216 respondents participated in this stage (28% worked in manufacturing; 44% in state public administration, 28% in banks). They were all full-time employees.

In the first step, our goal was to identify unsatisfactory items. A 45 item questionnaire was completed by respondents. We have calculated the discriminative indicator suggested by Stan (2002) and for the following stages were selected the items with a discriminative indicator between .20 and .80. As a result of this analysis, 13 behavioral examples were eliminated, among those being all three examples that represented the „theft" category. As a result, the factor analysis didn't further analyze this scale that was identified in the previous stage. After this step, we came up with a list of 32 behaviors that were further included in the factor analysis.

Exploratory factor analysis

Sample and procedure

In the second step, we conducted an exploratory factor analysis. Through this statistical procedure, we expected a four factor solution as the optimal solution for structuring the answers.

Participants in this study were Romanian employees form an organization that is a regional operator of public services. Overall, 192 employees completed the questionnaire and 176 data sets were complete and usable for the analysis (Mean age=43, *SD*=12.53; 56% men; 60.50 % University degree; 20% managerial positions).

The participants were briefly presented the research's general objective and that they will anonymously complete the questionnaire. The applied questionnaire had 32 items and pursued the analysis of the counterproductive behaviors observed by the employees in their work environment. Participants were asked to indicate on a scale from 1 (never), 2 (one or twice), 3 (once or twice in a month), 4 (once or twice in a week) to 5 (daily) the degree they have observed the implication of their colleagues in such behaviors. The questionnaire scales were: *scale 1*: Misuse of information; *scale 2*: Production deviance; *scale 3*: Absenteeism and withdrawal; *scale 4*: Interpersonal counterproductive behaviors.

Results

The exploratory factor analysis was conducted using the SPSS 13.0 software. We used the principal axis factoring with *oblimin* rotation of the factors. The sample adequacy index was optimal (KMO = .951). We retained items that had factor loadings higher than .30. The factor solution is presented in Table 2. The factor solution presented in Table 2 showed that several items have high loading values on more than one factor, or have high loadings on different factors than the one they were supposed to belong to. After this observation, we excluded from the questionnaire the following items: *(it 2) They do not accomplish given tasks because they "are wasting time at work"; (it 5) they like to flatter superiors in order to obtain certain favors; (it 8) to disseminate confidential information with regard to the professional activity of their colleagues; (it 11) they deliberately fail to perform their duties; (it 20) they constantly fail to meet the deadlines of their tasks; (it 23) they impose their own ideas to the group in an inflexible manner; (it 24) they are delaying on purpose the accomplishment of tasks; (it 31) they are competing dishonestly with their colleagues in order to gain the manager's appreciation*.

Tabel 2. Factor solution resulted

	Factors				Communality
Item/scale	1	2	3	4	
it9/s4	0.804				0.705
it15/s2	0.720				0.626
it10/s2	0.684				0.677
it14/s2	0.670				0.635
it8/s1	0.667				0.592
it16/s2	0.604				0.698
it17_s4	0.575				0.730
it7/s2	0.547				0.637
it28/s4	0.492		-0.303		0.670
it12/s4	0.456				0.745
it24/s2	0.452			-0.451	0.731
it22/s2	0.438			-0.302	0.659
it11/s3	0.433	0.331			0.728
it23/s4	0.411				0.636
it31/s4	0.387				0.674
it29/s3	0.385			-0.368	0.724
it4/s1		0.821			0.818
it3/s1		0.806			0.769
it2/s3		0.728			0.636
it5/s2		0.647			0.669
it1/s1		0.647			0.420
it6/s1		0.521			0.485
it26/s4			-0.767		0.878
it25/s4			-0.700		0.728
it32/s4			-0.318		0.623
it30/s3				-0.683	0.669
it21/s3				-0.665	0.817
it20/s2				-0.628	0.662
it13/s3				-0.609	0.623
it27/s3				-0.519	0.640
it19/s3			-0.395	-0.509	0.785

Note: the notation of each item includes the number of the item in the questionnaire and the number of the scale it was created for.

We conducted a new factor analysis on the remaining 24 items. Both Cattell's screeplot and Kaiser's criteria indicated that a four factor solution is optimal in order to explain why the items vary. The final solution of the first study is presented in Table 3.

These four factors represent the four types of counterproductive behavior in organizations: *misuse of information, production deviance, absenteeism and withdrawal, as well as counterproductive interpersonal behaviors*.

The four factors explain 74.13% of the item variance. Factor 1 (interpersonal counterproductive behaviors) explains 59.94 % of the variance. Factor 2 (misuse of information) explains 5.26 % of the variance. Factor 3 (production deviance) explains 4.67 % of the variance, and factor 4 (absenteeism and withdrawal) explains 4.25 % of the variance.

Results of factor analysis indicate a four-factor solution. This solution was obtained on a sample from a single organizational culture. Further on we proceeded at verifying the factorial solution obtained after the confirmatory factor analysis performed on a mixed sample, consisting of participants from different organizational cultures, in order to confirm the stability of the proposed model in various organizational cultures and climates.

Tabel 3. Factorial structure

Items	Factors			
	1	2	3	4
To tell on their colleagues to the superior with the purpose of obtaining certain personal advantages or discrediting them (i26 s4)	.833			
To pass on the gossip of colleagues to the direct superior (i25 s4)	.756			
To like criticizing constantly the management and colleagues from other departments (i32 s4)	.353			
Not to tell the truth about the accomplishment or non-accomplishment of a certain task (i3 s1)		.862		
Not to tell the truth in order to cover some deficiencies or in order to avoid performing their duties (i4 s 1)		.856		
To distort information about the degree of accomplishment of a task (i 1 s1)		.709		
To report incorrect information about a task to the superior (i6 s 1)		.486		
To misuse or to use in an abusive manner instruments/devices/resources belonging to the company (i15 s2)			.762	
To use in a careless manner the devices at work (i14 s2)			.711	
To like harassing their colleagues (I9_s4)	.332		.601	
To disregard the instructions of the superior and to do their duties as they see fit, thus affecting the efficiency of the whole team (i10 s2)			.555	
To deliberately manifest disinterest about an objective of the team (i16 s2)			.503	
To refuse to help their colleagues (I17_s4)			.448	
To manifest a verbally aggressive and vulgar behavior towards other colleagues (i28 s4)	.337		.400	
To deliberately fail to accomplish their tasks (i7 s2)		.305	.392	
To refuse to help their colleagues (it 12)	.326		.371	
To deliberately accomplish their tasks at an inferior level of quality (i22 s2)			.360	
"Stalling" for time when performing their working duties (i21 s3)				-.679
To leave the office before the end of the working hours (i30 s3)				-.664
To ask for a leave without a justification and repeatedly, thus affecting the accomplishment of their working duties in optimal conditions (i13 s3)			.323	-.654
To pretend to be busy so as they do not receive any other working duties (It19_s3)	.399			-.560
To take longer or more frequent breaks than it is allowed (i27 s3)				-.510
To pretend to accomplish a duty but to do nothing in fact (i18 s3)	.409			-.488
Not to get involved in the accomplishment of a team task but to benefit in a passive manner from the results (i29 s3)				-.415
Eigenvalue	14.388	1.263	1.121	1.020
Explained variance	59.949	5.263	4.670	4.250
Cumulated explained variance	59.94	65.21	69.88	74.13
Internal consistency	.90	.84	.89	.92

Study 2. Instrument validation – confirmatory factor analysis

This study's objective was to establish the final number of factors that have resulted from factor analysis. We conducted a confirmatory factor analysis using AMOS 4.0, in order to validate the four factor solution obtained in the exploratory factor analysis.

Method

Sample and procedure

Participants in this study were Romanian employees from three organizations (19% from banks, 48% from public administration organizations, 33% from manufacturing industries). In total, 198 employees filled in the questionnaires (Mean age=34.46, *SD*=8.69; 32.97 % men).

The general research's objective was briefly introduced to the participants - about organizational behaviors observed by employees in their working environment - and they were then asked to anonymously fill in a questionnaire. The questionnaire included 32 items but only the remaining 24 items from the exploratory factor analysis were processed. The subscales were: scale 1 – misuse of information, scale 2 – production deviance, scale 3 – absenteeism and withdrawal, scale 4 – interpersonal counterproductive behavior. For the validation of the scale process the following scales were also applied: Counterproductive Behavior Index (Fox & Spector, 2002; Spector, Fox, Penney, Bruusema, Goh & Kessler, 2006) and perceived social support scale (MMPS) - Zimet, Dahlem, Zimet & Farley (1988)

Results

In this study we conducted a confirmatory factor analysis for validating the four-factor solution indicated by the exploratory factor analysis. For this analysis, we used AMOS 4.0 software. We used the guidelines provided by Garson (2008), Schreiber, Nora, Stage, Barlow and King (2006) and Sava (2004) for interpreting the goodness of fit indices. We took into account the following indices: χ^2, GFI (index of good fit), RMR (root mean squared residuals), RMSEA (root mean squared error of approximation) and Hoelter .05.

Factor structure

The fit indices for the tested model indicated that the tested factor structure is an adequate one. The relative χ^2 index (χ^2/df) is 3, which is an acceptable value (according to Kline, 1998 apud. Garson, 2008; Schreiber et al. 2006). The RMR (root mean squared residuals) index had also an acceptable value of .05. Steiger (apud Sava, 2004) indicates that RMR values smaller than .10 indicate an adequate model). The other indices have values at the limit of acceptability: RMSEA = .09 (.08 is the critical value, according to Schreiber et al., 2006); Hoelter .05 = 76 (75 is the critical value, according to Garson, 2008), GFI = .75 (.85 is the critical value, according to Sava, 2004).

In order to achieve a better fit, this initial model was trimmed. We excluded four items that had insignificant path coefficients: *(I9_s4)To like harassing their colleagues; (I12_s4)To disregard the ideas/opinions of other colleagues; (it 12)to refuse to help their colleagues; (It19_s3) To pretend to be busy so as they do not receive any other working duties*.

After these adjustments, the fit indices improved: (χ^2/df=2.60, RMR=0.05, RMSEA=0.08, GFI=.83, Hoelter .05 index=90).

In Table 4 the indices are presented comparatively, for the two tested models - the initial one, with 24 items and the final one, with 20 items. The scales have an acceptable internal consistency, with alpha Cronbach coefficients of over .80.

In the following step, the final model (20 items) was compared with two other alternative models for grouping the items: one model has tested the presence of a second order factor of the four questionnaire's scales and the other has tested the single factor solution.

The results indicate the fact that the single factor model is less suitable for describing the way how the answers of the respondents are structured. The model that puts into theory the existence of an second order factor (also called level 2 factor) does not bring significant improvements to the model with 20 items that we have tested previously.

Table 4. Fit indices for the initial and final models for perceived organizational behaviors in organization.

Model	χ^2	df	p	χ^2/df	GFI	RMR	RMSEA low	Hoelter index .05
1 (initial - 24 items)	738	246	<.001	3.00	0.75	0.05	0.09	76
2 (final - 20 items)	427	164	<.001	2.60	0.83	0.05	0.08	90

Table 5. Fit indices for the overfactor solution and the single factor solution

Model	χ^2	df	p	χ^2/df	GFI	RMR	RMSEA low	Hoelter index .05
Overfactor	433,66	166	<.001	2,61	.825	.053	.080	90
Single factor	562,54	170	<.001	3,30	.777	.055	.098	71

Table 6. Mean values, standard deviations and correlations for the instrument sub-scales

Scale	Factor	Min	Max	Mean	SD	No. of items	*1*	*2*	*3*	*4*
1. Misuse of information	2	4.00	19.00	8.06	3.74	4	**.87**			
2. Production deviance	3	6.00	22.00	9.37	4.10	6	.79**	**.86**		
3. Absenteeism and withdrawal	4	6.00	27.00	11.36	5.14	6	.78**	.82**	**.89**	
4.Counterproductive interpersonal behaviors	1	4.00	20.00	7.61	3.86	4	.73**	.79**	.81**	**.87**

Note: N=198. *Note:* * p<.05, ** p<.01. Alpha indicators are presented on the diagonal

Table 7. Average values, standard deviations and Alpha indicator for the EPCBO scale (general score)

Scale	Min	Max	Mean	SD	No. of items	*Alpha*
EPCBO (general score)	20.00	83.00	36.40	15.48	20	**.95**

Correlations between the scales vary from .79 to .82 as they are presented in table 6. This indicates that the four types of deviance are distinct, yet related. The mean values and the standard variations for the instrument scale and the general scale are presented in Table 6 and Table 7. Confirmatory factor analysis has indicated the fact that this scale can also be used in the four scale (factor) version, but also with an second order factor integrating the four factors. The final items of the scale are presented in the Appendix section of this paper.

Validity of the EPCBO

The validation procedure included more steps and considered more aspects of validity: construct validity (convergent and discriminant).

Construct validation (conceptual validation) is the process through which it is verified if the test refers to the construct that is to be measured. This aspect was verified using experts' recommendations which have evaluated the degree of relevance of the items. This process has begun with the stage of evaluation of the items' relevance degree by the experts, on the dimensions of the EPCBO and has continued with the analysis of inter-scale correlations, which are significant for values of $p < .01$ (Tables 6 and Table 7).

In order to evaluate this type of activity we have analyzed the *convergent validity* and the *discriminant validity*. A certain measurement instrument has *convergent validity* if it measures what it also evaluates on other tests related to the same construct, therefore the scores may vary (linearly or otherwise) in a similar way as the results of the corresponding measurements (Pitariu & Albu, 1996). In this stage the scores of the EPCBO scale were compared with other scales that measure similar or theoretically related constructs. Convergent validity shall be proved if the scores on this scale are strongly related to the scores of he counterproductive behaviors scale that we have produced. In this way, the scores of the constructed scales were compared with the scores of other scales that measured counterproductive behaviors – the scale of counterproductive work behaviors (Spector & Fox, 2002) - and also with the conceptually similar behaviors, such as organizational justice or perceived organizational support (Table 9).

According with the results presented in Table 9, the relations between our scale and similar measures are in accordance with the predictions. The scores on the EPCBO scale are correlated with the dimension of self-reported organizational counterproductive behaviors (.48). The scores for the four scales of EPCBO are moderately and significantly correlated with scores from the scales that measure similar constructs, by providing an average correlation score of .38.

We have measured the relation between the constructed instrument and the constructs that are theoretically relevant. The association degree of the EPCBO scales and the scores on the procedural and perceived organizational support scales has been analyzed. The correlation indicators are moderate in value with an average of .32. These results are supporting the convergent validity of our instrument.

Table 9. Correlations between the perceived counterproductive behaviors scale and measurements of similar behaviors, behaviors related in terms of theory, and dissimilar behaviors.

Comparison criterion	Observed correlations			
	EPCBO 1	**EPCBO 2**	**EPCBO 3**	**EPCBO 4**
Similar behaviors				
Individual counterproductive behaviors *(Fox & Spector, 2002)*				
Scale of interpersonal counterproductive behaviors	.33**	.45**	.32**	.32**
Scale of organizational counterproductive behaviors	.41 **	.48**	.41**	.33**
Theoretically related concepts				
Procedural justice (Leventhal 1980 apud Colquitt, 2001)	-.21*	-.32*	-.26**	-.32*
Perceived organizational support (Rhoades, Eisenberger &Armeli 2001 apud O'Brien 2004)	-.31**	-.39**	-.37**	-.48**
Dissimilar behaviors				
Perceived social support (support from family, friends and other significant persons) (MMPS, Zimet, Dahlem, Zimet & Farley, 1988)	.14	.18	.06	.15

Note N=192,* p<.05 **p<.01

The evaluation of the discriminating value has been done by the application of another scale that measures a unrelated construct in order to prove the existence of a low correlation (the scale of perceived social support (MMPS) - Zimet, Dahlem, Zimet and Farley (1988). It is expected that the measures of the EPCBO sub-scales to have a low correlation the with measurement perception about some aspects that we hold as distinct and unrelated. Such a concept is the perceived social support from family, friends and significant persons.

The resulted correlations provide the evidence for the discriminant validity. The scales have low correlations, with an average value of .11, yet insignificant (see Table 9). This pattern of relations with similar and dissimilar relations indicates the validity of the measurement.

Discussions

The purpose of these studies has been to develop an instrument of evaluation for the perception of different counterproductive behaviors in organizations. The factor analysis has confirmed the four factor structure of the ***evaluation scale for evaluation of perception on counterproductive behaviors in organizations (EPCBO)*** which has 20 items. The four factors are: *misuse of information, production deviance, absenteeism and withdrawal as well as interpersonal counterproductive behaviors.*

These results are in accordance with the results of previous research on counterproductive behaviors within organizations, since the categories generated reflect both behaviors oriented towards the organization, as well as interpersonal behaviors (Bennett & Robinson, 2000; Spector et al., 2006).

Evidence for instrument validation has been obtained by evaluating the relation between the resulting scale and other measures that have evaluated similar constructs. Moreover, the present instrument had moderate relations with measures of theoretically related constructs, such as organizational justice or perceived organizational support. Finally, the scale has shown discriminating validity, since no significant correlation with unrelated construct (such as support from other persons) has been found.

It must be mentioned that the validation is a continuous process. Only in time, many more other studies will bring considerable support in this respect.

Although this study provides many contributions to the literature in this field, it does have certain limitations.

The scale of this study does not include all possible types of counterproductive behavior. In different stages of evolution of the scale some items were given up to, since they did not meet the necessary statistical criteria. A special attention in the process has been focused on finding a balance in the creation of a scale that was to include common types of counterproductive behavior for various organizational cultures in order to provide a complete set of behaviors and psychometric

features of the scale. Thus, the resulting scale has a good internal consistency and is practically fit. Including more behaviors would have probably been more attractive or interesting, but the value for the practical research would have been more reduced. Another limit is the intention to create a largely applicable scale to a series of contexts and professions, so the resulting scale only includes those behaviors that have been deemed as common for more organizational cultures.

This instrument represents the first scale in the documentation of this domain that deals with the perception of the employees on the counterproductive dimensions of the organization they work for. The importance of this study and its results is also increased by the directions of research it opens, that is, how the perception of employees on counterproductivity influences the work satisfaction within the organization, their well-being, the behaviors of those who observe certain behavior types, etc.

Future research

The approach on perception of counterproductivity in organization offers insight about what happens in organization, in terms of the impact of observed behavior on employees' behavior. It is important to analyze how this affect work relations and organizational productivity, and also how managers have an important role in dealing with this issue.

It is also significant to further analyze the perception of leaders and managers because they may be seen as role models and they also are perceived as being responsible for applying and respecting rules and norms in general, and specifically those related to organizational deviance. They need to define for employees what does organizational deviance represent in their organizations and what are the measures, rules and procedures to prevent, stop or punish counterproductive acts. In the frame of considering that in organizations are present several climate dimensions (e.g., for service, innovation, efficiency, autonomy, apud Patterson, West, Shackleton, Dawson, Lawthom, Maitlis, Robinson & Wallace, 2005) we can also propose that there is also a climate for counterproductivity. Several authors have studied so far, how certain type of organizational climates are related to organizational deviance. For example, unethical climate (the ethical climate of an organization refers to the shared perceptions of what is an ethically correct behavior and how ethical issues should be handled in the organization – Victor and Cullen (1987 apud Peterson, 2002)) was found to be related to organizational deviance (Peterson, 2002; Vardi, 2001), climate for theft (which includes the opportunity to steal and the perceived and communicated norms of the organization, management, and work group - Kulas, McInnerney, DeMuth & Jadwinski, 2007). The above mentioned authors found that theft climate is predictive for self-reported theft of time and property (as types of counterproductive work behavior). Similarly, Spector, Coulter, Stockwell and Matz (2007) analyzed the perceived violence climate (a good violence climate is perceived by employees when management emphasizes the control and elimination of violence and verbal aggression) who was found to correlate significantly with both physical violence and verbal aggression, injury from violence and perceptions of workplace danger.

The idea of defining and analyzing counterproductive climate will include policies and procedures dealing with deviance, organizational and interpersonal, and can be analyzed through the manner employees perceive that their manager/employer provides prevention policies for counterproductive work behaviors, encourage employees to report such behaviors observed in colleagues, etc. This area of research has an important potential, for research developments and practical interventions and, as an argument, we refer to the results of the previously mentioned studies in this field that emphasized that if employees perceive that managers take into consideration and take actions regarding counterproductive issues, will be less chances for counterproductive acts to occur (e.g. Robinson and O'Leary-Kelly (1998) found that the likelihood of punishment weakened the relationship between group antisocial behavior and individual antisocial behavior; Peterson (2002) who found that organizations with a low perceived emphasis on adherence to company rules and laws would be more likely to experience deviant behavior related to misuse of organizational property (stealing, damaging property).

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Appendix 1 (English version)

Administration and scoring

The evaluation scale for evaluation of perception of counterproductive behaviors in organizations (EPCBO) is an instrument that measures the perception of employees over such behaviors manifested by their colleagues within the organization. The instrument has four scales:

- Scale *Misuse of information* (4 items): 1, 5, 9, 13
- Scale *Production deviance* (6 items): 2, 6, 10, 14, 17, 19
- Scale *Absenteeism and withdrawal* (6 items): 3, 7, 11, 15, 18, 20
- Scale *Interpersonal counterproductive behaviors* (4 items): 4, 8, 12, 16

The answers must be scored on a scale from 1 (never), 2 (one time or two times), 3 (once or two times a month), 4 (once or two times a week), to 5 (daily). The scores are calculated by adding the items of each scale, or in order to obtain a global quote of the scale, all items can be summated. Instructions to the participants are presented in table 1.10. which also contains the final items of the scale.

Recommendations for application

Since this questionnaire has been developed and validated preponderantly on a population with medium and higher education, it is recommended to be applied on similar people in terms of education.

Besides, the application of this questionnaire requires that the participants remain anonymous.

EPCBO scale

In the table below there is a description of several possible behaviors that may occur within any organization. Read carefully each sentence and mark the number that illustrates best the frequency of occurrence of that particular behavior in your organization.

No.	In your organization it happens that some people...	Never	Once or two times	Once or two times a month	Once or two times a week	Daily
1	Distort information with regard to the status of accomplishment of a task	1	2	3	4	5
2	Deliberately fail to accomplish their task	1	2	3	4	5
3	Take leaves repeatedly and without justification, which does not allow the accomplishment of working duties in optimal conditions	1	2	3	4	5
4	Pass on gossip from their colleagues to their direct superior	1	2	3	4	5
5	Do not tell the truth about the fulfillment or the failure to fulfill a task	1	2	3	4	5
6	Disregard the instructions of their superior and to perform their duties as they see fit, thus affecting the efficiency of the whole team	1	2	3	4	5
7	Pretend to be executing a task but in fact they don't do anything.	1	2	3	4	5
8	Tell on their colleagues to the superior in order to obtain certain personal advantages or in order to discredit them	1	2	3	4	5
9	Do not tell the truth in order to cover certain deficiencies or to avoid accomplishing certain duties	1	2	3	4	5
10	Use in a careless manner the devices at work	1	2	3	4	5
11	"Stall" for time when performing their working duties	1	2	3	4	5
12	Have a verbally aggressive and vulgar behavior towards other colleagues	1	2	3	4	5
13	Report to the superior incorrect situations about a task	1	2	3	4	5

No.	In your organization it happens that some people...	Never	Once or two times	Once or two times a month	Once or two times a week	Daily
14	Misuse or use in an abusive manner the devices/instruments/resources of the company	1	2	3	4	5
15	Take longer breaks than allowed	1	2	3	4	5
16	Like criticizing constantly the management and the colleagues from other departments	1	2	3	4	5
17	Willingly manifest their disinterestedness towards and objective of the team	1	2	3	4	5
18	Do not get involved in the accomplishment of certain team tasks, but they only benefit passively from the results	1	2	3	4	5
19	Deliberately accomplish their duties at a lower level of quality	1	2	3	4	5
20	Leave before the end of the working hours	1	2	3	4	5

Appendix 2 (Romanian version)

Administrare şi cotare

Scala de evaluare a percepției comportamentelor contraproductive în organizații (SEPCCO) este un instrument ce măsoară percepția angajaților asupra comportamentelor de acest tip manifestate de colegii lor în cadrul organizației. Instrumentul are patru scale:

- Scala *Folosirea necorespunzătoare a informațiilor* (4 itemi): 1, 5, 9, 13
- Scala *Devianța legată de producție* (6 itemi): 2, 6, 10, 14, 17, 19
- Scala *Absenteism şi retragere* (6 itemi): 3, 7, 11, 15, 18, 20
- Scala *Comportamante interpersonale contraproductive* (4 itemi): 4, 8, 12, 16

Răspunsurile se cotează pe o scală de la 1 (niciodată), 2 (o dată sau de două ori), 3 (o dată sau de două ori pe lună), 4 (o dată sau de două ori pe săptămână), la 5 (zilnic). Scorurile de calculează prin însumarea itemilor pe fiecare scală, sau pentru a obține o cotă globală a scalei, se pot însuma toți itemii. Instrucțiunile date participanților sunt prezentate în tabelul 5.10. care conține şi itemii finali ai scalei.

Recomandări pentru aplicare

Deoarece acest chestionar a fost construit şi validat preponderent pe o populație cu studii medii şi superioare, este recomandată aplicarea pe o populație cu caracteristici asemănătoare din punct de vedere al educației.

De asemenea aplicarea acestui chestionar presupune respectarea anonimatului participanților.

În propozițiile de mai jos sunt descrise o serie de comportamente posibile care pot apărea în orice organizație. Citiți cu atenție fiecare propoziție şi încercuiți cifra corespunzătoare frecvenței cu care considerați că respectivul comportament se manifestă în organizația dumneavoastră.

Nr. crt	În organizația dumneavoastră se întâmplă ca unele persoane...	Niciodată	O dată sau de două ori	O dată sau de două ori pe lună	O dată sau de două ori pe săptămână	Zilnic
1	Să distorsioneze informațiile legate de stadiul realizării unei sarcini	1	2	3	4	5
2	Să nu îşi finalizeze în mod intenționat sarcina	1	2	3	4	5
3	Să se învoiască în mod repetat şi nejustificat, fapt ce nu mai permite realizarea sarcinilor de serviciu în condiții optime	1	2	3	4	5
4	Să transmită bârfele colegilor către şeful direct	1	2	3	4	5
5	Să nu spună adevărul cu privire la executarea sau neexecutarea unei sarcini	1	2	3	4	5
6	Să desconsidere instrucțiunile şefului şi să se achite de sarcini după capul lor, afectând eficiența întregii echipe	1	2	3	4	5
7	Să se prefacă că execută o sarcină dar de fapt să nu facă nimic	1	2	3	4	5
8	Să îi pârască şefului pe colegi pentru a obține anumite avantaje personale sau pentru a-i discredita	1	2	3	4	5
9	Să nu spună adevărul pentru a-şi acoperi unele deficiențe sau pentru a se sustrage de la anumite îndatoriri	1	2	3	4	5
10	Să utilizeze cu neatenție aparatura de la serviciu	1	2	3	4	5
11	Să "tragă de timp" în realizarea sarcinilor de serviciu	1	2	3	4	5
12	Să aibă față de alți colegi un comportament agresiv verbal şi vulgar	1	2	3	4	5
13	Să raporteze şefului situații incorecte despre o sarcină	1	2	3	4	5
14	Să folosească necorespunzător sau abuziv instrumente/aparate/resurse din dotarea companiei	1	2	3	4	5
15	Să ia pauze mai dese sau mai lungi decât sunt prevăzute	1	2	3	4	5
16	Să le placă să critice în mod constant conducerea şi colegii din alte departamente	1	2	3	4	5
17	Să îşi manifeste dezinteresul voit față de un obiectiv al echipei	1	2	3	4	5
18	Să nu se implice în realizarea unor sarcini de echipă, dar să beneficieze pasiv de rezultate	1	2	3	4	5
19	Să îşi îndeplinească intenționat sarcinile la un nivel inferior de calitate	1	2	3	4	5
20	Să plece înainte de terminarea programului de lucru	1	2	3	4	5