

# ETHICAL CLIMATE INDEX: EVIDENCE OF VALIDITY OF THE BRAZILIAN VERSION\*



JULIANA G. ALMEIDA<sup>1</sup>

 <https://orcid.org/0000-0003-3608-494X>

JULIANA B. PORTO<sup>1</sup>

 <https://orcid.org/0000-0001-9164-2719>

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<sup>1</sup> Universidade de Brasília (UnB), Brasília, DF, Brazil.



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## ABSTRACT

**Purpose:** Ethical issues have been a growing concern in Brazilian organizations. One of the variables that have been studied in this field is the Ethical climate. Victor and Cullen's (1988) measure is the one most applied to address this phenomenon. This scale has been criticized because its structure has not been empirically supported and the need for update measures has been highlighted. As an answer to this critique, Arnaud (2010) proposed the Ethical climate index – the ECI. This measure uses Rest's (1984) model of ethical decision-making as a background. The main goal of this work was to develop a Brazilian version of the ECI.

**Originality/value:** The ECI does not yet have a Brazilian version.

**Design/methodology/approach:** The first study presents the translated measure, an exploratory and confirmatory study of the factorial structure on a sample of 1,306 employees. In Study 2 (sample of 3,087 employees), we performed first and second order confirmatory analyses of the structure found in Study 1 in a different sample.

**Findings:** The original model showed better goodness of fit in both studies. Additionally, relationships with ethical leadership and abusive leadership were identified. Overall, findings suggest the scale presents good psychometrical properties, presenting itself as a good measure to evaluate ethical climate.

## KEYWORDS

Ethical climate. Ethical leadership. Abusive leadership. Ethical decision-making. Organizational climate.

## 1. INTRODUCTION

In the past few decades, researchers have employed increasing efforts to better understand ethical behavior in the workplace. The influence of social demands and the pressure for more transparency in business and governmental actions play an important role in this increasing interest. The development of measures that evaluate ethical phenomena is a response to the applied demands of organizations (Brown & Treviño, 2006).

Multiple phenomena regarding ethics at work have been studied. In this sense, shared perceptions concerning ethics in the working environment – ethical climate – play a central role in that investigation (Akdogan & Dermitas, 2015). The main goal of this study is to present a version of the Ethical Climate Index – ECI (Arnaud, 2010) and to provide evidence of the validity of the ECI in Brazil.

## 2. ETHICAL CLIMATE STUDIES

The study of ethical climate (EC) contributes to the understanding of variables in the field of ethics and other organizational variables. First of all, focusing on ethical content, empirical studies related EC with the perception of social responsibility (Shafer, Poon, & Tjosvold, 2013), moral distress (Atabay, Çangarli, & Penbek, 2014), ethical sensitivity in business (Zhang & Zhang, 2016), ethical behavior (Wimbush, Shepard, & Markham, 1997), among others.

In addition, concerning studies focused on non-ethical related outcomes, EC had a positive effect on job satisfaction and organizational commitment (Anaza, Rutherford, Rollins, & Nickell, 2015), identification with the team (Cheng & Wang, 2015), and unit performance (Jiang, Hu, Hong, Liao, & Liu, 2016). Further, a negative effect was observed on organizational deviance (Hsieh & Wang, 2016), and employee turnover (Lee & Ha-Brookshire, 2017). Most models tested the influence of EC on indirect relations and interaction with other variables (e.g. Jiang et al., 2016).

Whereas the consequences of EC are increasingly studied, EC antecedents have received little research attention. Among the investigated antecedents are ethical leadership (Akdogan & Dermitas, 2015) and variables at the organizational level, such as corporate social responsibility and trust (Hansen, Dunford, Alge, & Jackson, 2016).

Leaders have an important influence on norms and ethical decision-making and EC is directly related to both. Several authors have suggested the importance of ethical leaders for EC (Den Hartog, 2015). The same is true for the influence of co-workers, as they might be the first at hand to share perceptions (Schneider, González-Romá, Ostroff, & West, 2016). Abusive leaders, on the other hand, can establish a negative role model and influence the perceptions of norms (Tepper, Simon, & Park, 2017), though the effect of interpersonal relations at work and EC still needs further research.

## 3. THEORETICAL REFERENCE

### 3.1 EC measures

In general, organizational climate studies state that climate is “derived from a body of interconnected experiences with organizational policies, practices and procedures and observations of what is rewarded, supported, and expected in the organization” (Schneider et al., 2016, p. 1). This phenomenon can be studied as a multidimensional or molar phenomenon. The same is true for EC. Victor and Cullen (1988) highlight that the EC is multidimensional and multidetermined.

Recently gaining emphasis on climate investigations, EC concerns characteristics of an organization that supports (or not) attitudes and ethical related behaviors (Treviño, Butterfield, & McCabe, 1998). EC was defined as “predominant perceptions of organizational procedures and practices with ethical content” (Victor & Cullen, 1988, p. 101). Victor and Cullen argue that EC can be explained as follows:

- When a decision can cause consequences for other individuals, how does an organization identify the correct choice?

Most studies on EC have Victor and Cullen’s (1988) model as a background. These authors proposed nine types of EC. The typology is based on a matrix that combines three philosophical approaches (principle, benevolence, and selfishness) with three levels of analysis (personal, local, cosmopolitan). Each of the types would be related to specific normative expectations. However, empirical evidence has confirmed Victor and Cullen’s model only partially (Arnaud, 2010; Brown & Treviño, 2006), including in Brazil (Ribeiro, Porto, Puente-Palacios, & Resende, 2016). For this reason, Arnaud (2006, 2010) proposes the ECI, grounded on Rest’s decision-making

model (1984). ECI constitutes an alternative to Victor and Cullen's (1988) ethical climate measure (e.g. Kalshoven, Den Hartog, & De Hoogh, 2011).

### 3.2 Ethical decision making as background to EC studies

Kohlberg (1981) studied ethical decision-making focusing on moral judgment. However, moral judgment alone does not explain ethical decision-making (Treviño, 1986), which constitutes a limitation of Kohlberg's model. Therefore, Rest (1984, 1986) proposed four psychological processes necessary to make an ethical decision: moral sensitivity, moral judgment, moral motivation, and moral character. Having expanded Kohlberg's approach, four factors (based on the psychological processes) compose Rest's model of ethical decision-making.

The first one, Moral Sensitivity, is related to the understanding that a person's acts affect others (Chambers, 2011) and that the situation is morally relevant (You & Bebeau, 2013). The second one, Moral Judgment, is the ability to recognize moral challenges and to establish a plan of action, and is also related to the stage of moral development. In this sense, at the lowest level, one prioritizes the weight of an action's impact on oneself. At the second stage, one considers the norms of the group. Moreover, at the highest level of maturity, intangible ethical principles gain relevance.

Next, Moral Integrity is characterized by the importance given to moral values when compared to personal ones. The last factor, Moral Character (or Moral Courage), relates to aligning actions and ethical considerations. This is the most applied dimension of moral decision-making. The four dimensions of the model are independent (Jones, 1991).

Having Rest's proposition as a background, Arnaud (2010) suggested that the individual perspective could emerge to the collective level. The EC model is composed of 6 factors. The first two dimensions from Rest's model (Moral Sensitivity and Moral Judgment) were subdivided on the EC measures and originated four factors.

The first two factors of ECI come from the subdivision of Moral Sensitivity. Norms of Moral Awareness (NMA) and Norms of Empathetic Concern (NEC). Together, these factors regard the perception of ethical dilemmas and the evaluation of how actions affect others. NMA reflects the prevalence of a way of thinking that foresees alternatives of actions in a given social system. By its turn, NEC reflects the prevalence of the evaluation of the consequences of actions in terms of how such actions affect others.

The third and fourth factors come from a subdivision of the Moral Judgment dimension. These scales assess the norms of moral reasoning.



Focus on Others (FoO) and Focus on Self (FoS) reflect the reasoning adopted to evaluate whether the course of action is morally adequate or not.

The fifth dimension of EC, Collective Moral Motivation (CMM), is dedicated to understanding which ethical values are predominant in a given situation within a social system. The goal is to assess the priority given to values such as honesty, justice, and offering assistance when compared to competing values such as power, control, or personal achievements. To conclude, the last factor is Collective Moral Character (CMC). This factor is related to how a person engages in following a specific course of ethical action that he/she has designed.

The items of the ECI have different sources. Items composing NEC were based on the Empathetic Concern and Perspective Taking dimensions from the Interpersonal Reactivity Index (Davis, 1980). By turn, NMA items were developed for the ECI. Next, items that assess moral judgment (FoO and FoS) were based on the Ethical Climate Questionnaire (Victor & Cullen, 1988). Regarding the CMM scale, items were based on Benevolence and Universalism value types (Schwartz & Bilsky, 1987). These types have been linked to ethical behavior (Myyry & Helkama, 2001) and pro-social behaviors (Franc, Sakic, & Ivicic, 2002). The items were developed stressing the prevalence of one value over an opposing one (e.g. "In my department people strive to obtain power and control even if it means compromising ethical values"). For the last factor, CMC, items were based on the Core-Self Evaluations scale (Judge, Erez, Bono, & Thoresen, 2003) and the Denial of Responsibility scale (Schwartz, 1977).

Moreover, convergent, discriminant validity and nomological network were assessed by Arnaud (2010). ECI was supposed to be positively related to justice (Ambrose & Schminke, 2006, procedural justice climate (Colquitt, 2001), safety climate (Zohar, 2000), and climate for initiative (Frese, Fay, Hilburger, Leng, & Tag, 1997). As expected, ECI was positively related to justice (mean correlation = .33,  $p < .01$ ), procedural justice climate (mean correlation = .58,  $p < .01$ ), safety climate (mean correlation = .54,  $p < .01$ ), and climate for initiative (mean correlation = .54,  $p < .01$ ).

The author also contrasted ECI with variables expected to be weakly correlated to EC. Regarding perceived functional dependence, the mean correlation was .18 ( $p < .01$ ). Concerning problem-solving, only NMA ( $r = .19$ ,  $p < .01$ ) and NEC ( $r = .15$ ,  $p < .05$ ) were weakly correlated. Finally, the organizational structure was not correlated with NMA, NEC, or FoO. The mean correlation among the remaining factors was .17 ( $p < .01$ ). Expanding the nomological network, an affective commitment was positively correlated



to the six ECI factors. However, concerning job satisfaction, no significant correlations were found with NEC nor with FoO (NMA=.24, FoS=-.13, CMM=.19, CMC=.40,  $p < .01$ ). Turnover intentions were not related to ECI.

In general, the correlations between EC and demographic variables present mixed findings. Some authors suggest that EC is correlated, even though weakly, to such variables (e.g. Singhapakdy, Karande, Rao, & Vittel, 2001), while other authors have not found any significant correlations (Upchurch & Ruhland, 1996). Arnaud (2006) highlights that ECI is weakly correlated (all  $r$  values around  $|.10|$ ) with age (NMA, FoS, and CMC), gender (NMA, NEC, CMM), employee level of education (FoO), organizational tenure (NMA), and department tenure (NMA, FoO, and CMM).

Simha and Cullen (2012) suggested that ECI should be further tested in different contexts. Salamon and Mesko (2016) developed a Serbian version of ECI. These authors also found a six-factor solution using EFA. However, FoO was not confirmed and NEC was subdivided into two factors.

## 4. PILOT STUDY

The pilot study sought to determine the adequacy of the psychometric properties of the Brazilian version of the ECI. The main goal was to replicate the proposed factorial structure.

## 5. METHOD

### 5.1 Translation and back-translation

The original scale was translated into Brazilian Portuguese. The accuracy of the translation was checked by the translation – back translation procedure (Brislin, 1970) following the 2016 guidelines from the International Test Commission (ITC). The aim of this study was to use this measure in a single country and not to perform transcultural investigations (Gudmundsson, 2009). During the translation procedures, the first translator (native North American) converted the original instrument from English to Portuguese. A second translator (native Brazilian), then, back-translated the scale. The two professionals did not have any contact during the translation process. Researchers adjusted small differences. After that, the measure was again submitted to the translators until reaching the final version. Next, for content validation, five judges analyzed the translated scale. They evaluated



if items were clear and their adequacy, if they were pertinent to the factor in which they were proposed, and if they were theoretically relevant for the assessment of the construct.

## 5.2 Participants and procedures

A broad sample of employees participated in the pilot study. An online invitation was sent to employees' institutional accounts. Participation was voluntary and the survey was conducted online. In total, 1,306 employees completed the questionnaire and authorized the use of their answers. The sample size met Hinkin's criteria (1998) for scale development.

Participants' ages ranged from 26 to 70 years and 59.1% were men. All of them worked in the same company, distributed across the country. Most participants (91.7%) had a higher level of education than high school. All participants had more than four months of' organizational tenure.

## 5.3 Measures

The 36-item ECI was used. All items were in Brazilian Portuguese, and the response scale ranged from 1 (totally disagree) to 5 (totally agree). Examples of items include: "Employees feel bad for somebody that is treated unfairly" (NEC), "Employees immediately recognize a moral dilemma" (NMA), "The best for the entire unit is the main concern" (FoO), "Employees work mainly for their own interest (inverted)" (FoS), "Employees seek to obtain power and control even if it means compromising ethical values (inverted)" (CMM), and "Employees believe that they can do the right thing when confronted with moral dilemmas" (CMC). Demographic data were also collected.

## 5.4 Data analyses

We performed exploratory (EFA) and confirmatory factorial analysis (CFA) according to the proposition of Hinkin, Tracey, and Enz (1997). The EFA was conducted using SPSS, version 21. Data analysis was conducted using principal axis factorial analysis with Oblimin rotation. The CFA was performed using AMOS (maximum likelihood estimation).

## 5.5 Ethical procedures

Participants were informed about the research goal, that participation was voluntary, and that they could withdraw whenever they chose to do so.





The electronic invitation presented the study, the contact of the researcher in charge, and assured the participants of the research confidentiality. The data were analyzed together. The Ethical committee authorized this research.

## 6. RESULTS

Results were divided into two sections. In the first one, we report the EFA of the ECI. In the second one, the results of the CFA are presented.

### 6.1 EFA Results

The solution with six factors explained a total variance of 65.3%, exceeding the minimum level of 60% for scale development (Hinkin, 1998). Parallel analysis (Crawford et al., 2010) corroborated the extraction of six factors. The correlation matrix presented correlations over .30. These correlations signal that the factors are related, though relatively independent of each other (Tabachnick & Fidell, 2007). However, the original CMM was divided into two, and one set of items was aggregated to CMC ones. Normality assumptions were also checked. Descriptive analyses checking for violation and exploring skewness and kurtosis did not display significant deviations. However, the normality test (Mardia) displayed deviations due to the sample size.

In addition, one item presented high loads in two factors (“employees were actively concerned with the interests of colleagues”). Two items (“Employees had a strong sense of responsibility for society and humanity” and “Employees believe that they could do the right thing when confronted with moral dilemmas”) did not present loads over .30. These items were retrieved from the results. Figure 6.1.1 presents EFA findings.

(Figure 6.1.1)

#### ECI BRAZILIAN VERSION EFA FINDINGS

Items and factors (considering items' original factor)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
<b>Norms of Moral Awareness (NMA)</b>						
People in my department recognize a moral dilemma right away. (NMA)	.79					
People around here are aware of ethical issues. (NMA)	.78					

(continue)

**(Figure 6.1.1 (continuation))**

**ECI BRAZILIAN VERSION EFA FINDINGS**

Items and factors (considering items' original factor)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
If a rule or law is broken, people around here are quick to notice. (NMA)	.66					
People in my department are very sensitive to ethical problems. (NMA)	.65					
People around here do not pay attention to ethical issues. (inverted) (NMA)	.40					
It is expected that you will always do what is right for society. (FoO)	.30					
<b>Collective Moral Motivation (CMM)</b>						
Authority is considered more important than fairness. (inverted) (CMM)		.83				
Power is more important than honesty. (inverted) (CMM)		.82				
Personal success is more important than helping others. (inverted) (CMM)		.80				
Achievement is valued more than commitment and loyalty. (inverted) (CMM)		.53				
<b>Focus On Self (FoS)</b>						
People in my department are very concerned about what is best for them personally. (inverted) (FoS)			.84			
People around here are mostly out for themselves. (inverted) (FoS)			.84			
People in my department think of their own welfare first when faced with a difficult decision. (inverted) (FoS)			.83			
People's primary concern is their own personal benefit. (inverted) (FoS)			.81			
People around here protect their own interest above other considerations. (inverted) (FoS)			.77			
<b>Norms of Empathetic Concern (NEC)</b>						
When people around here see that someone is treated unfairly, they feel pity for that person. (NEC)				.75		
Others' misfortunes do not usually disturb people in my department a great deal. (inverted) (NEC)				.74		

(continue)

**(Figure 6.1.1 (continuation))**

**ECI BRAZILIAN VERSION EFA FINDINGS**

Items and factors (considering items' original factor)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
When people in my department see someone being treated unfairly, they sometimes don't feel much pity for them. (inverted) (NEC)				.71		
People around here feel bad for someone who is being taken advantage of. (NEC)				.67		
In my department people feel sorry for someone who is having problems. (NEC)				.66		
Sometimes people in my department do not feel very sorry for others who are having problems. (inverted) (NEC)				.60		
People in my department sympathize with someone who is having difficulties in their job. (NEC)				.55		
<b>Focus On Others (FoO)</b>						
The most important concern is the good of all the people in the department. (FoO)					.68	
What is best for everyone in the department is the major consideration. (FoO)					.65	
People I work with would feel they had to help a peer even if that person was not a very helpful person. (CMC)					.32	
<b>Collective Moral Character (CMC)/Collective Moral Motivation (CMM)</b>						
In order to control scarce resources, people in my department are willing to compromise their ethical values somewhat. (inverted) (CMM)						.58
People are willing to tell a lie if it means advancing in the company. (inverted) (CMM)						.55
People strive to obtain power and control even if it means compromising ethical values. (inverted) (CMM)						.54
People in my department feel it is better to assume responsibility for a mistake. (CMC)						.49
No matter how much people around here are provoked, they are always responsible for whatever they do. (CMC)						.46
People are willing to break the rules in order to advance in the company. (inverted) (CMM)						.43

(continue)

**(Figure 6.1.1 (conclusion))**

**ECI BRAZILIAN VERSION EFA FINDINGS**

Items and factors (considering items' original factor)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
When necessary, people in my department take charge and do what is morally right. (CMC)						.37
Generally people in my department feel in control over the outcomes when making decisions that concern ethical issues. (CMC)						.35

Note: N = 1306 participants.  
Principal Axis Factoring. Oblimin rotation.  
Only coefficients higher than .30 are shown.

Source: Elaborated by the authors.

The EFA indicated that the six factors solution properly represents the sample of this study. Aiming to estimate the replicability of EFA, we conducted a replication analysis – RA (Osborne & Fitzpatrick, 2012). In both subsamples, a six factors solution was found. The explained variance was similar (65.53% and 65.54%). CMC and CMM items clustered in one factor. The same items composed the factors, with the exception of one item of CMC that clustered with FoO items in the second subsample. The items “employees are actively concerned with the interests of colleagues” and “employees have a strong sense of responsibility for society and humanity” presented high loads in two factors. The RA analyses displayed similar results between the two subsamples and when compared with the first EFA. However, this model did not corroborate the originally proposed structure. EFA serves exploratory purposes while CFA tests the theory of a latent process and confirms models (Tabachnick & Fidel, 2007). Therefore, CFA was performed to compare the structures of the ECI.

## 6.2 CFA Results

We tested the goodness of fit of the original structure in comparison to three others: a model with one factor, and the model resulting from EFA. The final model was obtained after observing the modifications indexes. This last model was a reduced version of the original model, in a parsimonious structure (Hinkin et al., 1997). Multiple indicators of fit were used (MacDonald & Ho, 2002): chi-square ( $\chi^2$ ), comparative fit index (CFI), Tucker-Lewis index (TLI), normalized fit index (NFI), standardized root

mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Results are presented in Figure 6.2.1. CFA results for the final model are presented in Figure 6.2.2.

**(Figure 6.2.1)**

**COMPARISON OF ECI ALTERNATIVE FACTOR STRUCTURES USING CFA**

Models	$\chi^2$	df	p calculated	$\chi^2/DF$	NFI	CFI	TLI	SRMR	RMSEA
6 factor parsimonious model	450.45	120	sig	3.7	.97	.98	.97	.03	.05
6 factor original model	3965.93	579	sig	6.85	.88	.89	.88	.05	.07
6 factor EFA model	2856.87	481	sig	5.94	.90	.92	.91	.08	.06
1 factor model	9292.86	495	sig	18.77	.69	.70	.68	.08	.12

Source: Elaborated by the authors.

**(Figure 6.2.2)**

**ECI BRAZILIAN VERSION CFA FINDINGS**

Names of Factors and Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
<b>Norms of Moral Awareness (NMA)</b>						
People in my department are very sensitive to ethical problems. (NMA)	.84					
People in my department recognize a moral dilemma right away. (NMA)	.73					
People around here do not pay attention to ethical issues. (inverted) (NMA)	.64					
<b>Collective Moral Motivation (CMM)</b>						
People strive to obtain power and control even if it means compromising ethical values. (inverted) (CMM)		.91				
People are willing to tell a lie if it means advancing in the company. (inverted) (CMM)		.89				
In order to control scarce resources, people in my department are willing to compromise their ethical values somewhat. (inverted) (CMM)		.83				
<b>Focus On Self (FoS)</b>						
People around here protect their own interest above other considerations. (inverted) (FoS)			.92			

(continue)

**(Figure 6.2.2 (conclusion))**

**ECI BRAZILIAN VERSION CFA FINDINGS**

Names of Factors and Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
People's primary concern is their own personal benefit. (inverted) (FoS)			.87			
People in my department are very concerned about what is best for them personally. (inverted) (FoS)			.86			
<b>Norms of Empathetic Concern (NEC)</b>						
Sometimes people in my department do not feel very sorry for others who are having problems. (inverted) (NEC)				.84		
People around here feel bad for someone who is being taken advantage of. (NEC)				.73		
When people around here see that someone is treated unfairly, they feel pity for that person. (NEC)				.71		
<b>Focus On Others (FoO)</b>						
Employees had a strong sense of responsibility for society and humanity.					.79	
Employees were actively concerned with the interests of colleagues.					.77	
The most important concern is the good of all the people in the department. (FoO)					.74	
<b>Collective Moral Character (CMC)</b>						
When necessary, people in my department take charge and do what is morally right. (CMC)						.80
No matter how much people around here are provoked, they are always responsible for whatever they do. (CMC)						.72
Generally people in my department feel in control over the outcomes when making decisions that concern ethical issues. (CMC)						.69

Note: N = 1306 participants.  
Principal Axis Factoring. Oblimin rotation.  
Only coefficients higher than .30 are shown.

Source: Elaborated by the authors.

Findings suggest that the originally proposed model, having observed the modification indexes, better fits the data when compared to the other models. The model with the worst fit is the one with a single factor. The EFA

model diverges from the theoretical proposition. In summary, the reduced original model is the one that best fits the data. Moreover, this model is theoretically aligned and corroborates the factorial structure of the ECI proposal.

To determine whether ECI factors pertain to EC, we conducted a second order CFA. The results show a good fit:  $\chi^2$  (129, N=1308)=550.9, pb.001, CFI=.97; NFI=.96; TLI=.97; RMSEA=.05; SRMR=.034. Hence, CFA results suggest that the subscales of ECI belong to the EC domain. Figure 6.2.3 presents the Cronbach’s alphas and factor correlations, as well as means and standard deviations from the variables in this study. All alpha values are over .77, achieving the minimum criteria of .70 established by Nunnally (1976) and reaffirmed by Hinkin (1995). Additionally, concerning the relation with demographic data, ECI factors were not related to gender, FNS was weakly correlated to education (r=.05), and NCS (r=.08), NPE (r=.06) and FNO (r=.06) were also weakly correlated to age.

**(Figure 6.2.3)**

**DESCRIPTIVE STATISTICS AND CORRELATIONS AMONG THE STUDY VARIABLES**

Variables	M	SD	1	2	3	4	5	6
1. Norms of Moral Awareness	3.61	.84	(.77)					
2. Norms of Empathetic Concern	3.51	.85	.55	(.81)				
3. Focus on Self	2.69	1.04	.55	.55	(.94)			
4. Focus on Others	3.07	.86	.60	.64	.65	(.81)		
5. Collective Moral Motivation	3.22	1.03	.59	.52	.64	.65	(.91)	
6. Collective Moral Character	3.27	.80	.61	.55	.56	.68	.65	(.78)

Note: N = 1306 participants.  
Cronbach’s alpha coefficients are displayed on the diagonal.  
All correlations are significant at  $p < .01$ .

Source: Elaborated by the authors.

## 7. STUDY 2

The main objective of Study 1 was to present valid evidence of the Brazilian version of the ECI. Study 2 aimed to retest the factorial structure in a larger sample and check evidence of construct validity (Hinkin et al.,

1997; Tabachnick & Fidel, 2007). Moreover, the EC relationship with justice, relationship with peers, and with climate for innovation was investigated.

One variable that is consistently related to EC is leadership (Den Hartog, 2015). Leaders' behaviors influence organizational climate and the relations among team members (Den Hartog, Van Muijen, & Koopman, 1997). Leaders that use manipulative tactics and coercion had a more unfavorable climate, while considerate and expertise leaders' tactics were linked to favorable climate (Ansari, 1988).

Hence, besides further assessing the psychometric properties, the relationships between the ECI scales and ethical and abusive leadership were also tested. We expected that EC would relate positively to ethical leadership and negatively with abusive leadership (nomological net).

## 8. METHOD

### 8.1 Sample and procedure

A Brazilian financial institution was contacted. All employees working in the headquarters of the company (5,437 employees) were invited to participate. Participation was voluntary. Data were gathered online. Of 5,437 employees, 3,100 agreed to participate in responding to the ECI (57.02%). A subsample of 1,429 employees (46.01%) also answered the additional leadership scales. Mean age of respondents was 40.29 years ( $SD=8.32$ ,  $min=22$ ,  $max=67$ ). 52.6% of participants were men.

Additionally to the relationships with ethical and abusive leadership, the relationship of the ECI scales with demographic variables was also tested (age, gender, region of the country).

### 8.2 Measures

- *EC*: the perception of EC was assessed by the 18 items of the reduced version of the ECI (see Figure 9.2 for complete items and Appendix for Brazilian version). All items were evaluated using a Likert scale of 5 points, ranging from 1 (totally disagree) to 5 (totally agree).
- *Leadership*: ethical leadership was evaluated using the 29-item Brazilian version of the Workplace Ethical and Leadership scale (Almeida, den Hartog, & Porto, 2018) proposed by Kalshoven et al. (2011). This scale is composed of seven factors: People Orientation, Power Sharing, Fairness, Role Clarification, Integrity, Concern for Sustainability, and



Ethical guidance. Cronbach's  $\alpha$  of these factors in this study ranged between .82 and .95.

The following are examples of ethical leadership items per factor: My unit leader... "Is interested in how I am feeling and how I am doing" (People Orientation), "Blames me for a job over which I did not have control" (Fairness), "Allows subordinates to influence his/her decisions" (Power Sharing), "Explains with clarity codes of ethical conduct" (Ethical Orientation), "Can trust that will do things that he/she says" (Integrity), "Clarifies who is responsible for what" (Role Clarification), and "Likes to work in an environmentally responsible manner" (Concern with Sustainability).

The 20-item Abusive Leadership scale (Almeida, Den Hartog, & Porto, 2018) was used to measure abusive leadership behaviors. The scale used in this study measures four factors: Intimidation, Excessive pressure for results, Lack of care, and Self-centeredness. The  $\alpha$  value of these factors ranged from 0.82 to 0.91. Examples of items are: My unit leader "Publically humiliates subordinates" (intimidation), "Submits the team to a high level of stress to increase performance" (excessive pressure for results), "Is concerned with the well-being of employees" (inverted) (lack of care), and "Sabotages employees to self-promote" (self-centeredness). The response scale for both leadership measures ranged from 1 ("never behaves that way") to 5 ("always behaves that way").

- *Relationship with peers*: a scale from the organization where data were gathered assessed the relationship with co-workers. The 6-item scale presented a Cronbach's  $\alpha$  of .89 in this study. A sample item is "employees trust each other".
- *Justice*: an 11-item scale developed by the organization studied assessed employees' perceptions of fairness of organizational procedures. The justice scale presented a Cronbach's  $\alpha$  of .93 in this study. A sample item is "the organization has the same rules for all employees."
- *Climate for innovation*: an 8-item scale developed by the organization studied assessed climate for innovation. This scale presented a Cronbach's  $\alpha$  of .94 in this study. A sample item is "employees' new ideas are encouraged by the organization."

### 8.3 Data analysis

For retesting the factor structure, we performed first and second order CFA (maximum likelihood estimation). Structural equation modeling (SEM)

through AMOS 21 and SPSS 21 software packages was used for CFA. Correlations between EC and the other variables were calculated using SPSS 21.

## 9. RESULTS

The goodness of fit of the factorial structure of ECI shown in Study 1 was tested in comparison with three other concurrent models that ranged from a single factor to five factors. Results are presented in Figure 9.1. To compare the models, we analyzed the same indicators of fit used in Study 1. The results illustrate that the six-factor model is the best fitting model. The items loaded on the expected factors.

**(Figure 9.1)**

### COMPARISON OF ECI ALTERNATIVE FACTOR STRUCTURES USING CFA - STUDY 2

Models	$\chi^2$	df	p calculated	$\chi^2/DF$	NFI	CFI	TLI	SRMR	RMSEA
6 factors model	1,572.88	120	sig	3.7	.95	.96	.95	.05	.06
5 factors model (NMA + NEC)	2,618.21	125	sig	20.95	.92	.93	.91	.05	.08
4 factors model	4,387.98	129	sig	34.01	.87	.88	.85	.07	.10
1 factor model	8,429.54	135	sig	62.44	.76	.76	.73	.07	.14

Source: Elaborated by the authors.

To determine whether our ECI dimensions load on a second order overall ethical climate factor, we performed a second-order CFA. This second-order factor structure also showed a good fit: (129, N=3100) = 2037.04 p=0.001, CFI=.94; NFI=.94; TLI=.93; RMSEA=.069; SRMR=.05.

Cronbach's alphas and intercorrelations are presented in Figure 9.2. The intercorrelations were similar to those found in Study 1. These findings provide further evidence of the construct validity of ECI.

(Figure 9.2)

**DESCRIPTIVE STATISTICS AND INTERCORRELATIONS FOR STUDY 2**

Variables	M	SD	1	2	3	4	5	6
1. Norms of Moral Awareness	3.71	.80	(.78)					
2. Norms of Empathetic Concern	3.71	.77	.56	(.75)				
3. Focus on Self	3.11	1	.49	.56	(.92)			
4. Focus on Others	3.31	.82	.56	.61	.69	(.83)		
5. Collective Moral Motivation	3.271	.92	.59	.56	.65	.63	(.88)	
6. Collective Moral Character	3.55	.71	.55	.51	.5	.67	.60	(.76)

Note. N = 3100 participants.

Cronbach's alpha coefficients are displayed on the diagonal.

All correlations are significant at  $p < .01$ .

Source: Elaborated by the authors.

Findings concerning the relationship of EC variables with the other variables were in line with the theoretical assumptions. Ethical leadership was positively and significantly associated with all ECI dimensions, and correlations ranged from .27 to .51 ( $p < .01$ ). For abusive leadership, the correlations with ECI scales found were negative, and ranged from -.29 to -.56 ( $p < .01$ ). As expected, a positive and significant relationship was found with all ethical leadership scales and a negative one with abusive leadership scales. EC dimensions were more strongly correlated to a relationship with peers (ranging from .48 to .71,  $p < .01$ ) than to leadership. EC was also correlated to perceptions of justice (ranging from .39 to .58,  $p < .01$ ) and climate for innovation (ranging from .41 to .62,  $p < .01$ ).

## 10. DISCUSSION

The EC has become consolidated in the literature as a variable of scientific interest. Concerning organizational relevance, EC has been applied to the understanding of ethical issues in the work environment and holds strategic importance for the definition of organizational policies and practices as well. Organizational climate is a summary of the perceptions of specific work context elements shared by the employees. The main concern for studying these shared perceptions is the role they have for the promotion of future desired behaviors (Schneider, 1973). This effect can also be expected from the EC.



The majority of EC studies applied to Victor and Cullen's scale (1988). This scale has been criticized in the literature for being outdated and for the lack of subsequent studies providing empirical corroboration of the theoretical structure proposed (Arnaud, 2006, 2010). Therefore, based on Rest's ethical decision-making model (1984), Arnaud proposed the ECI, and this study provides validity evidence for it in Brazil.

The contributions of these studies are twofold. First of all, the original studies that propose the ECI (Arnaud, 2006, 2010) did not perform second-order CFA. Findings from Study 2 stress the goodness of fit of the second order CFA by the ECI, underlining that all factors do pertain to the EC domain. Moreover, considering the nomological network first explored by the ECI's author, our studies expand the ECI's nomological network as the relationship of the dimensions with positive (and negative) leadership had not been previously investigated, even though leadership holds a clear influence on ethical and organizational climate (Den Hartog, 2015). Additionally, as the climate is a shared perception (Schneider et al., 2016), relationship with peers also presented a significant relationship with ECI dimensions. ECI dimensions were also positively correlated to justice perceptions and climate for innovation.

The evidence of validity for the adaptation of the ECI to Brazil indicates adequate psychometric properties. ECI assesses the phenomenon from six dimensions: Norms of emphatic concern, Norms of moral conscience, Focus on the self, Focus on others, Collective moral motivation, and Collective moral character. We observed the stability of the factorial structure and psychometric properties of the version of the ECI translated into Portuguese in two different samples (meeting the guidelines for the construction of instruments proposed by Hinkin, 1998).

The final Brazilian version of the ECI is composed of 18 items distributed in the 6 originally proposed factors. The original factorial structure was corroborated by CFA findings that suggest the construct validity of the ECI. Although EFA did not replicate the exact item distribution of the original study, this last analysis does not allow an assessment of the model fit (Tabachnick & Fidell, 2007). Moreover, results corroborated the original model and found a better adjustment for the reduced version of the ECI when compared with concurrent alternative models (Hinkin, 1998).

Additionally, the expected relationships of ECI dimensions with abusive and ethical leadership, relationship with peers, perceptions of justice, and climate for innovation were found. For this reason, the nomological network explored in Study 2 constitutes a strength of our study and is important for



construct validity (Mesick, 1995). The sample sizes and stability of the factorial structure found are also strengths, besides the goodness of fit.

Limitations of this study include the use of self-report measures that can inflate common variance. To reduce this bias, the confidentiality of participants' identity was assured. Furthermore, employees of the same company participated in both studies. New studies should further investigate ECI psychometric properties in different organizations and industries. As the development of a scale is a continuous process (Kalshoven et al., 2011) new studies should replicate our findings in different samples, even though we corroborate the proposed structure. This study sought to expand the validity of ECI by testing it in a different context from the original proposition.

## 11. CONCLUSION

Findings suggest that the ECI is an adequate alternative for the investigation of EC. EC can contribute to the understanding of how employees perceive ethical aspects in the work environment, of how these shared perceptions concerning ethics are formed, and also how they can affect behavior. Such contributions are relevant from a theoretical and from an applied perspective. The ethical issue is highly important for employees and organizations. The possibility of measuring EC contributes to advance the theory and to the design of strategic and organizational plans directed toward corporate ethical development.

## ÍNDICE DE CLIMA ÉTICO: EVIDÊNCIAS DE VALIDADE DA VERSÃO BRASILEIRA

### RESUMO

**Objetivo:** O assunto da ética no trabalho é crescente no cenário organizacional brasileiro. Uma das variáveis de interesse de pesquisa nessa temática é o clima ético organizacional. A escala mais utilizada para abordar o fenômeno clima ético é a de Victor e Cullen (1988). Essa escala tem recebido críticas porque a estrutura proposta pelos autores não foi corroborada empiricamente. Além disso, há a necessidade de medidas mais atuais. Como resposta a essas demandas, Arnaud (2010) propõe o

índice de clima ético (ICE). Essa medida teve por base a proposta de tomada da decisão ética de Rest (1974). O objetivo deste trabalho foi realizar a adaptação do ICE.

**Originalidade/valor:** O ICE ainda não foi adaptado para o Brasil.

**Design/metodologia/abordagem:** O primeiro estudo apresenta a tradução – retradução da escala, teste exploratório e confirmatório da estrutura fatorial, com uma amostra de 1.308 profissionais. No estudo 2, foi realizado o teste confirmatório de primeira e segunda ordens da estrutura encontrada no estudo 1, em outra amostra.

**Resultados:** O modelo original reduzido apresentou melhor ajuste nos dois estudos. Adicionalmente, as relações com a liderança ética e a liderança abusiva foram confirmadas. Juntos, os resultados sugerem que o ICE apresenta boas propriedades psicométricas, sendo uma ferramenta adequada para mensurar o clima ético.

## PALAVRAS-CHAVE

Clima ético. Liderança ética. Liderança abusiva. Tomada de decisão ética. Clima organizacional.

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## AUTHOR NOTES

**Juliana G. Almeida**, Amsterdam Business School, University of Amsterdam (UvA); Psychology Institute, Universidade de Brasília (UnB); & **Juliana B. Porto**, Psychology Institute, Universidade de Brasília (UnB).

Juliana G. Almeida is now a post PhD researcher at the Leadership and Management Section, Amsterdam Business School, University of Amsterdam (UvA); & Juliana B. Porto is now Associate professor at Psychology Institute at Universidade de Brasília (UnB).

Correspondence concerning this article should be addressed to Juliana G. Almeida, Rie



Juliana G. Almeida, Juliana B. Porto

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