VALIDATION OF DATA COLLECTION INSTRUMENT FOR MEASUREMENT OF ETHICAL ORGANIZATIONAL CULTURE IN LITHUANIAN ORGANIZATIONS

Aurelija Novelskaite[1], Raminta Pucetaite[2]

[1,2]*Vilnius University, Lithuania*

crossref http://dx.doi.org/10.5755/j01.em.19.3.8357

Abstract

Ethical organizational culture as a social phenomenon has drawn scholars and organizations' attention after the global economic crisis in 2008 which, again, proved the importance of the ethical component of organizational culture as a phenomenon potentially accounting for organizational failures. A practical need for management of ethical virtues of organizational culture calls for robust measurement instruments which could help to diagnose potential ethical risks and improve ethical dimensions of organizational culture. The paper presents the results of confirmatory validation analysis of a measurement instrument for ethical organizational culture or the corporate ethical virtues model. The model encompasses 8 virtues, i.e. clarity, congruency of supervisors, congruency of management, transparency, feasibility, discussability, supportability, and sanctionability, measured by a 58-item scale initially.

The type of the article: *Methodological article.*

Keywords: *Ethical organizational culture, statistical analysis, Lithuania, measurement instrument.*

JEL Classification: *L31, M14.*

1. Introduction

The global economic crisis in 2008 proved again that ignoring ethical values and principles of sustainable development in business organizations' practices can have significant negative consequences to national economies and global development (Içke, 2011; Lewis, Kay, Kelso & Larson, 2010; Ruiz-Palomino, Martinez-Canas & Fontrodona, 2013). This calls for attention to the ethical dimension of organization management, in particular, organizational culture which can have a significant effect on employees' behaviour. For example, if an organization encourages risk-taking behaviour, aggressive internal competition, and reaching the objectives at any cost, it may create an environment that accounts for deceptive, organizationally detrimental behaviour and unsustainable performance in the long run (Baucus, Norton, Baucus & Human, 2008). And on the contrary, research on the impact of an ethical context has indicated its positive effect on employees' attitudes and behaviour such as commitment or sensitivity to unethical actions and socially pro-active behaviour (Trevinõ, Butterfield & McCabe, 1998; cf. Übius & Alas, 2009).

Theoretical and empirical background

The construct of ethical organizational culture is very complex; thus, there are few instruments for empirical measurement of the phenomenon in reality (DeBode, Armenakis, Field & Walke 2013). One measurement instrument was developed by Trevinõ *et al.* (1998) in the 1990s, however, empirical testing of the instrument employing factor analysis of two scales of ethical climate and ethical culture of organisation resulted in loadings combining items from both scales. This prompted the researchers to conclude that although ethical organisational climate and culture are different, they still bear many characteristics in common. Therefore, they used the term "ethical context of an organisation" and suggested further elaboration of the scale. The challenge to measure ethical organisational culture was taken by a Dutch scholar Muel Kaptein (2008) who developed a measurement instrument called the "corporate ethical values model" (CEV hereinafter) in the 2000s.

After Kaptein validated the instrument in 4 organizations which operated in one country (i.e. the Netherlands), it was subsequently used in several other studies measuring ethical culture of organisations in relation to other organizational phenomena in both public and private sectors operating

in Finland, South Africa, and the US (Riivari & Lämsä, 2013; Huhtala, Kangas, Lämsä & Feldt, 2013; Kaptein, 2010; Webb, 2012). More recently, in a newer exploration of the instruments validity and reliability, DeBode *et al.* (2013) reported that they "found evidence further substantiating the eight-dimensional factor structure of the scale and the internal consistency of each dimension" (p. 18).

The original contribution

In his study, Kaptein (2008) draws attention to four limitations of the validations which were accomplished by himself. These are peculiarities of the samples and languages of the instrument, „limited research into the convergent and discriminant validity of the new construct", lack of explanations for differences in significance of findings in different companies, and concerns regarding exhaustiveness of operational definition of the ethical culture of an organization which lay in the background of the instrument. In this paper, we contribute to elaboration of the above mentioned limitations. In particular, the contribution consists of providing the case of validation of the measurement instrument in a specific organizational setting: a public organization which operates in post-soviet societal context. Post-soviet societies may present challenges to normative models and measurements of values because of the transformations that these societies have gone through historically. Also we contribute to the field by validating the instrument in a different, i.e. the Lithuanian language. Second, accomplishing a series of correlation analysis, we present some implications for increasing the convergent and discriminant validity of the constructs in the particular organizational setting. Third, having additional knowledge about the organizational setting and sociocultural context, we contribute by suggesting possible explanations of the findings. Finally, extending our analysis of validation by exploring the other scales suggested by De Bode *et al.* (2013), we elaborate the operational definition of the construct.

2. Method

The empirical data for this study were collected in one large public organization (N=1221) by a standardized web-based questionnaire survey in Lithuania (n=757, response rate 62%) at the end of 2013. The voluntary participation based sample is dominated by women (68%), and most of the respondents are supervised by women managers (77%). An average number of years working in the studied organization is 14 years, and the majority of the respondents are in their 40s (29%) and 50s (45%). Almost all respondents have higher education (97%). In general, the sample represents actual socio-demographic features of the organization.

The initial questionnaire under validation in this study was meant for the measurement of ethical organizational culture and consisted of 58 statements which originally were formulated by Kaptein (2008). The statements measure the following virtues: clarity (10 statements), congruency of supervisor (6 state-ments), congruency of management (4 statements), feasibility (6 statements), supportability (6 statements), transparency (7 statements), discussability (10 statements), and sanctionability (9 statements). The statements were presented for the respondents' evaluation on a Likert scale from 1 to 6, 1 denoting "strongly disagree" and 6 "strongly agree"; the possibility of "no answer" was also provided. In the next step of the validation, the instrument suggested by DeBode's at al. (2013) was used. The instrument consists of a smaller number of Kaptein's (2008) statements and involves the same 9 categories with 4 items for each category (i.e. 32 statements in total).

The data were analyzed using SPSS 22.0 for Windows software. Statistical methods for carrying out a confirmatory factor analysis were analogous with the ones originally used by Kaptein (2008) and DeBode *et al.* (2013): un-weighted least squares factorial analysis using different rotations to elucidate the best solutions. Aiming to contribute to the development of construct validity of the instrument, the next step of the validation procedure was based on correlation analysis (Pearson's product moment R) between the items and, resting on the strength/weakness of correlation coefficients, incorporation/elimination of the items into/from separate measurement categories. Finally, following commonly used procedures of empirical validations of measurement scales (e.g. Parsian & Dunning, 2009; Delmottea, De Winneb & Selsc, 2012; Kim & Cho, 2011), reliability analysis based on the calculation of Cronbach's alphas was accomplished for the evaluation of the three measurement instruments.

3. Results

The confirmatory factor analysis of the data collected in the Lithuanian organization resulted in 10 factors (i.e. the dimensions of ethical organizational culture) instead of 8 which were reported in Kaptein's (2008) study. After testing different – Varimax, Quarimax, Promax, Equamax, Direct Oblimin – rotations it was decided to rest on the Varimax rotation (see Table 1) because Quartimax rotation suggested existence of only 1 factor (dimension), and Equamax and Direct Oblimin rotations did not provide any solution.

Similarly as in Kaptein's (2008) study, the analysis of the Lithuanian data allowed to identify *Clarity, Congruency of Management, Congruency of Supervisor*, and *Supportability* as clearly separable and consistent constructs. Meanwhile factorial loadings-based compositions of the other constructs, i.e. *Feasibility*, *Transparency, Discussability,* and *Sanctionability* require longer and more detailed discussion. That is, in the case of *Feasibility* we found that 2 items (CEV21 and CEV22) seem to be falling aside from the other in this construct. They fall closer to several items aimed at measuring *Discussability* (CEV47-49) and *Sanctionability* (CEV53) (the 9th component in Table 1). Also construct of *Transparency* seems to be more scattered between the other constructs in the Lithuanian data as compared to Kaptein's (2008) findings. More specifically, this construct is split into 2 parts: the first part encompasses items which refer to potential occurrences in the future (CEV33-36); the second one involves items which are about factual existence of knowledge and practices (CEV38-39) and which seem to be close to the aspects related to *Discussability* and *Sanctionability*. Meanwhile item CEV37 seems to be attributed to measuring *Clarity* (the 1st component in Table 1) or *Congruency of supervisor* (the 10th component in Table 1).

Notwithstanding, the most tricky findings are related to the constructs measuring *Discussability* and *Sanctionability*. In general, following results of factorial analysis those 2 constructs should be reconstructed in the following way: one construct (the 3rd component in Table 1) should encompass items CEV38-40, CEV43, CEV49-51, and CEV 54, 56; the next construct (the 6th component in Table 1) should encompass items CEV42, CEV44-47; the third construct (the 8th component in Table 1) should encompass items CEV52-43, CEV55, and CEV57-58. The rest of the items that were originally assigned to these two constructs should be added to the other constructs: CEV41 seems to be the closest to the construct measuring *Supportability* (CEV27-32; the 4th component in Table 1); CEV48 (probably, together with CEV47 and CEV49), as it was mentioned before, seems to be the closest to several items measuring *Feasibility* (the 9th component in Table 1).

Table 1. Confirmatory factor analysis using Kaptein's (2008) model

		Component									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Clarity	CEV1	***,678***	,169	,078	,195	,041	,157	,091	,074	,127	,060
	CEV2	***,705***	,154	,118	,231	,122	,196	,118	,029	,101	,142
	CEV3	***,763***	,174	,173	,174	,078	,038	,055	-,022	,078	,124
	CEV4	***,694***	,285	,100	,239	,089	,030	,114	-,026	,047	,069
	CEV5	***,646***	,170	,117	,049	,123	,020	,003	,125	,005	,189
	CEV6	***,643***	,212	,019	,092	,115	,213	,116	,203	-,079	,096
	CEV7	***,762***	,250	,261	,103	,043	,037	,097	,034	,096	,050
	CEV8	***,705***	,202	,277	,112	,052	,019	,126	,122	,073	,041
	CEV9	***,421***	,005	-,195	-,032	,277	*,335*	,016	,264	,104	,285
	CEV10	***,616***	,304	,109	,266	,156	,176	,039	,094	,102	,000
Congruency of supervisor	CEV11	,274	***,723***	,065	,199	,022	,182	,156	,188	,034	,172
	CEV12	,354	***,698***	,038	,144	,105	,170	,119	,203	-,001	,157
	CEV13	,324	***,659***	,212	,135	,158	,108	,103	,025	,154	,090
	CEV14	,230	***,721***	,080	,210	,076	,124	,081	,168	,095	,116
	CEV15	,316	***,685***	,186	,166	,185	,087	,038	,069	,171	,092
	CEV16	,309	***,726***	,122	,153	,126	,121	,073	,144	,138	,076
Congruency of management	CEV17	,277	*,420*	,130	,244	,127	,122	,125	,071	,104	***,548***
	CEV18	,224	*,425*	,180	,257	,050	,075	,050	,184	,144	***,626***
	CEV19	,334	*,400*	,187	,137	,063	,065	,069	,115	,168	***,604***
	CEV20	,298	*,382*	,223	,153	,203	,007	,065	,102	,202	***,433***
Feasibility	CEV21R	,085	,189	,022	,164	,056	-,010	*,337*	,055	***,655***	,065
	CEV22R	,098	,076	,072	,144	,022	,067	*,401*	,048	***,590***	,169
	CEV23R	,089	,078	,040	,041	-,008	,098	***,794***	,068	,097	-,015
	CEV24R	,119	,059	,037	,076	,053	,109	***,847***	,043	,099	,056
	CEV25R	,130	,097	,050	,033	,090	,001	***,837***	,041	,109	,017
	CEV26R	,088	,198	,112	,057	,026	-,050	***,510***	,053	***,502***	,126

Supportability	CEV27	,294	,132	,062	***,417***	,340	,138	,011	-,101	,160	,029
	CEV28	,203	,176	,116	***,691***	,030	,144	,063	,258	,028	,122
	CEV29	,265	,110	,090	***,692***	,196	,144	-,004	,183	,125	,075
	CEV30	,217	,329	,086	***,585***	,051	,199	,155	,295	,095	,215
	CEV31	,330	,187	,211	***,639***	,186	,184	,020	,067	,180	,082
	CEV32	,202	,263	,201	***,659***	,069	,176	,138	,198	,071	,103
Transparency	CEV33	,095	,121	,190	,170	***,732***	,189	,097	,034	-,040	-,021
	CEV34	,127	,082	,201	,098	***,806***	,139	,067	,102	-,014	,056
	CEV35	,103	,183	,150	,130	***,786***	,037	,048	,098	,079	,143
	CEV36	,144	,046	,170	,017	***,578***	,110	-,052	,312	,200	,053
	CEV37	*,305*	,003	*,303*	,078	,234	*,302*	,017	,151	,033	***,357***
	CEV38	,283	-,001	***,511***	,115	,214	,184	,053	,243	-,041	,280
	CEV39	,176	,086	***,601***	,005	*,375*	,077	,073	,136	,002	,142
Discussability	CEV40	,139	,112	***,651***	,149	,214	,162	,042	,201	,084	,194
	CEV41	,183	,304	*,336*	,370	-,015	,302	,210	,162	-,049	,200
	CEV42	,138	,211	*,340*	*,314*	,155	***,530***	,125	,079	-,032	,098
	CEV43	,158	,151	***,583***	,232	,087	*,419*	,100	,063	,111	,038
	CEV44	,145	,119	,176	,235	,105	***,730***	,087	,161	,009	,002
	CEV45	,150	,212	,449	,166	,179	***,563***	,085	,036	,054	,027
	CEV46	,106	,153	,140	,141	,152	***,730***	,065	,176	,039	,096
	CEV47	,242	,299	,249	,157	,177	*,363*	-,018	,240	,303	,127
	CEV48	,271	,176	*,369*	,213	,198	*,355*	-,073	,117	***,391***	-,022
	CEV49	,197	,142	***,419***	,034	,236	*,338*	-,067	,231	,311	,044
Sanctionability	CEV50	,309	,218	***,475***	*,393*	,176	,176	,078	,049	,118	-,012
	CEV51	,277	*,324*	***,481***	,283	,079	,153	,142	,271	,032	,013
	CEV52	,038	,220	,256	,294	,068	,012	,112	***,651***	,016	,082
	CEV53	,157	*,311*	,287	,008	,247	,189	,022	***,403***	*,334*	,094
	CEV54	,268	,179	***,396***	,247	,206	,117	-,023	*,348*	,216	,072
	CEV55	,009	,089	,041	,112	,106	,253	,087	***,636***	-,048	,151
	CEV56	,238	,184	***,392***	,162	,249	,191	,060	,355	,191	-,057
	CEV57	,231	,180	,311	,164	,238	,157	,039	***,507***	,257	,029
	CEV58	,137	,232	,269	,293	,124	,085	,045	***,547***	,102	,029

Methodological note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
Note: the strongest loadings are in bold.

Similar analysis of the measurement instrument suggested by DeBode *et al.* (2013) resulted in only 5 constructs of ethical organizational culture (Table 2). One the one hand, the separate constructs are almost absolutely clearly identifiable in the Lithuanian data. The only exclusion is *Sanctionability* (the 2nd and the 3rd components in Table 2). On the other hand, in this case we have only 5 categories of the constructs: *Clarity* (the 4th component in Table 2), *Congruency of Leadership* (i.e. congruency of management and supervisor as a united construct – the 1st component in Table 2), *Feasibility* (the 5th component in Table 2); *Supporting Discussability* (including positive sanctions – the 2nd component in Table 2), and *Confident Transparency* (including confidence about disciplining – the 3rd component in Table 2).

Table 2. Confirmatory factor analysis using DeBode's *et al.* (2013) model

		Component				
		1	**2**	**3**	**4**	**5**
Clarity	CEV1	,276	,254	,118	***,643***	,117
	CEV7	,323	,149	,178	***,777***	,137
	CEV8	,285	,150	,202	***,761***	,135
	CEV10	,353	,327	,176	***,609***	,087
Congruency of supervisor	CEV11	***,742***	,311	,052	,199	,152
	CEV12	***,734***	,258	,120	,235	,106
	CEV14	***,707***	,271	,104	,180	,129
	CEV16	***,679***	,253	,157	,273	,151
Congruency of management	CEV17	***,687***	,223	,218	,160	,167
	CEV18	***,744***	,235	,195	,119	,143
	CEV19	***,704***	,136	,237	,215	,177
	CEV20	***,592***	,128	,336	,228	,187
Feasibility	CEV21R	,195	,172	,024	,060	***,722***
	CEV22R	,136	,128	,127	,079	***,744***
	CEV25R	,093	,067	,077	,104	***,669***
	CEV26R	,195	,059	,092	,088	***,779***
Supportability	CEV29	,228	***,698***	,090	,215	,071
	CEV30	,480	***,648***	,047	,117	,196
	CEV31	,250	***,684***	,129	,333	,126
	CEV32	,333	***,678***	,091	,165	,195
Transparency	CEV33	,091	,194	***,702***	,054	,058
	CEV35	,254	,077	***,698***	,048	,089
	CEV38	,169	,304	***,550***	,244	,018
	CEV39	,108	,178	***,692***	,175	,088

Discussability	CEV42	,217	***,591***	,346	,100	,063
	CEV43	,089	***,586***	,379	,204	,133
	CEV46	,185	***,526***	,351	,020	,022
	CEV48	,147	***,475***	,376	,303	,129
Sanctionability	CEV51	,325	***,485***	,314	,272	,131
	CEV55	,267	***,412***	,266	-,208	,022
	CEV56	,159	***,465***	***,461***	,190	,150
	CEV57	,261	,383	***,465***	,173	,183

Methodological note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
Note: the strongest loadings are in bold.

The analysis leads to a concluding suggestion to use DeBode's *et al.* (2013) version of the instrument for measuring ethical organizational culture in Lithuania. However, evaluation of reliability of the Kaptein's (2008) and DeBode's *et al.* (2013) instruments suggests a rather opposite conclusion as reliability of the scales is higher when all the items are included in the measurement instrument (i.e. Kaptein's model) in the Lithuanian data (Table 3). Hence, further elaboration of the instrument for measuring ethical organizational culture in Lithuania is unavoidable.

Table 3. Reliability analysis: Cronbach's alphas

	All items	Clarity	Congruency of management	Congruency of supervisor	Feasibility	Transparency	Supportability	Discussability	Sanctionability
Kaptein's (2008) model	0,965	0,897	0,922	0,876	0,836	0,873	0,839	0,897	0,861
DeBode's *et al.* (2013) model	0,942	0,847	0,900		0,760	0,869	0,748	0,777	0,702

Based on the results of correlation analysis, elaboration of convergent and discriminant validity of the original (Kaptein, 2008) measurement instrument suggested some possible modifications of the constructs. More specifically, relatively low correlation coefficients denoting a weak relation between CEV9 and the other items in the construct *Clarity* suggest elimination of the item (Table 4). It is worth drawing attention to the above given results of factorial analysis (Table 1) which point out an exclusively weak indicator of CEV9 belonging to the group of the items measuring the *Clarity* virtue. Hence, the result of correlation analysis just confirms a presupposition that CEV9 is an excessive item in the construct. Moreover, elimination of CEV9 from the construct results in the increased reliability of measuring *Clarity* to as high Cronbach's alpha as 0,916.

Table 4. Convergent and discriminant validity: *Clarity*

	Clarity									
	CEV1	**CEV2**	**CEV3**	**CEV4**	**CEV5**	**CEV6**	**CEV7**	**CEV8**	**~~CEV9~~**	**CEV10**
CEV1		,727**	,581**	,533**	,417**	,489**	,568**	,541**	~~,303**~~	,536**
CEV2			,666**	,616**	,460**	,554**	,610**	,568**	~~,356**~~	,580**
CEV3				,674**	,554**	,501**	,719**	,584**	~~,303**~~	,581**
CEV4					,540**	,541**	,650**	,566**	~~,266**~~	,559**
CEV5						,487**	,557**	,478**	~~,363**~~	,490**
CEV6							,519**	,551**	~~,431**~~	,489**
CEV7								,730**	~~,317**~~	,635**
CEV8									~~,310**~~	,599**
CEV9										,373**
CEV10										

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Further, it should be noted that clearly stronger correlations between the items measuring *Clarity* and the other items were not found. Hence, the construct was not complemented by any new items.

Similarly, *Congruency of Management* and *Congruency of Supervisor* are found to be the constructs which do not require significant corrections, i.e. exclusion or inclusion of any other items in the Lithuanian data (Table 5).

Table 5. Convergent and discriminant validity: *Congruency of Management, Congruency of Supervisor*

	Congruency of Management						Congruency of Supervisor			
	CEV11	**CEV12**	**CEV13**	**CEV14**	**CEV15**	**CEV16**	**CEV17**	**CEV18**	**CEV19**	**CEV20**
CEV11		,786**	,650**	,667**	,625**	,683**				
CEV12			,653**	,656**	,624**	,673**				
CEV13				,555**	,652**	,662**				
CEV14					,710**	,699**				
CEV15						,710**				
CEV16										

CEV17	,542**	,561**	,510**	,526**	,560**	,554**				
CEV18	,592**	,539**	,534**	,518**	,526**	,564**	,716**			
CEV19	,550**	,552**	,493**	,543**	,555**	,506**	,618**	,724**		
CEV20	,472**	,498**	,572**	,472**	,487**	,490**	,531**	,596**	,645**	

Note: ** Correlation is significant at the 0.01 level (2-tailed).

It is interesting to note that following the results of correlation analysis those two constructs can be measured both as two separate ones and as one construct in the Lithuanian data. Moreover, unification of the items into one construct – e.g. *Congruency of Leadership* – leads to increased reliability of the measurement with Cronbach's alpha of 0,934. It is worth mentioning here that a decision to combine the 2 constructs has been suggested by the above presented factor analysis of the instrument by DeBode *et al.* (2013) (Table 2).

Table 6. Convergent and discriminant validity: *Feasibility, Supportability*

	Feasibility						**Supportability**					
	~~**CEV21R**~~	~~**CEV22R**~~	**CEV23R**	**CEV24R**	**CEV25R**	~~**CEV26R**~~	~~**CEV27**~~	**CEV28**	**CEV29**	**CEV30**	**CEV31**	**CEV32**
~~**CEV21R**~~		~~,503**~~	~~,316**~~	~~,368**~~	~~,340**~~	~~,491**~~						
~~**CEV22R**~~			~~,333**~~	~~,388**~~	~~,361**~~	~~,512**~~						
CEV23R				,624**	,622**	~~,412**~~						
CEV24R					,742**	~~,434**~~						
CEV25R						~~,456**~~						
~~**CEV26R**~~												
~~**CEV27**~~												
CEV28							~~,358**~~					
CEV29							~~,399**~~	,596**				
CEV30							~~,356**~~	,627**	,597**			
CEV31							~~,465**~~	,526**	,686**	,624**		
CEV32							~~,319**~~	,658**	,581**	,671**	,632**	

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Following the results of correlation analysis, the construct of *Feasibility* seems to be the best measured by 3 items (i.e. CEV23-25), and CEV21-22 and CEV26 should be eliminated from the originally suggested (Kaptein, 2008) set of items (Table 6). Again, confirmation of such a decision can be found in the initial factor analysis (Table 1). Moreover, in such a case, Cronbach's alpha increases to 0,852. The eliminated items from *Feasibility* could be used for developing a new construct of Personal authenticity or Freedom from coercion. Yet, the reliability of these three items (Cronbach's alpha 0,757) are just on the verge of acceptability for the basic research (Peterson, 1994; Yang & Green, 2011).

In the case of *Supportability* the results of correlation analysis suggest elimination of CEV27 from the set of the items measuring the construct (Table 6). Again, the elimination results in increased reliability of the measurement instrument to Cronbach's alpha of 0,889. It is interesting to note that, following the principle of convergence and according to the results of correlation analysis (Table 7), item CEV30 could contribute to the increase in reliability of the measurement of *Congruency of Leadership* (to Cronbach's alpha of 0,936), however, elimination of this item from the set of the items measuring *Supportability* would decrease reliability of the measurement of this construct to Cronbach's alpha of 0,862. Thus, it is recommended to leave item CEV30 in the set of *Supportability.*

Table 7. Convergent and discriminant validity for improving *Congruency of Leadership*

	Congruency of Management						**Congruency of Supervisor**			
	CEV11	**CEV12**	**CEV13**	**CEV14**	**CEV15**	**CEV16**	**CEV17**	**CEV18**	**CEV19**	**CEV20**
CEV30	,605**	,539**	,461**	,528**	,484**	,523**	,523**	,535**	,488**	,468**

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Measurement of the construct *Transparency* seems to be rather complicated because the results of factor analysis (Table 1) suggest unification of CEV33-36 and elimination of all the other items. Such a decision would result in decreased reliability of the instrument (Cronbach's alpha 0,821).

Table 8. Convergent and discriminant validity: *Transparency*

	Transparency						
	CEV33	**CEV34**	**CEV35**	~~**CEV36**~~	~~**CEV37**~~	~~**CEV38**~~	~~**CEV39**~~
CEV33		,657**	,563**	~~,392**~~	~~,298**~~	~~,341**~~	~~,417**~~
CEV34			,688**	~~,502**~~	~~,323**~~	~~,375**~~	~~,424**~~
~~**CEV35**~~				~~,500**~~	~~,354**~~	~~,354**~~	~~,404**~~
~~**CEV36**~~					~~,370**~~	~~,362**~~	~~,391**~~
~~**CEV37**~~						~~,480**~~	~~,374**~~
~~**CEV38**~~							~~,493**~~
~~**CEV39**~~							

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Meanwhile, following the results of correlation analysis, unification of CEV33-35 results in slightly increased reliability (Cronbach's alpha 0,840) and provides a rather logical solution: unification of the items measuring the respondents' confidence in that violations in the organization will be disclosed in some way (Table 8).

Furthermore, the same principle of convergence of variables resting on the results of correlation analysis suggests that 2 items eliminated from the measurement of *Transparency,* i.e. CEV38 and CEV39 should be added to the measurement of *Discussability* (Table 9). In such a case, reliability of that scale would increase its Cronbach's alpha to 0,906.

Table 9. Convergent and discriminant validity: *Discussability* with improvements

	Supportability		**Discussability**									
	CEV38	**CEV39**	**CEV40**	**CEV41**	**CEV42**	**CEV43**	**CEV44**	**CEV45**	**CEV46**	**CEV47**	**CEV48**	**CEV49**
CEV38		,493**	,505**	,396**	,405**	,456**	,375**	,423**	,341**	,422**	,399**	,433**
CEV39			,573**	,315**	,347**	,440**	,324**	,374**	,297**	,372**	,389**	,428**
CEV40				,465**	,438**	,583**	,381**	,461**	,372**	,424**	,475**	,464**
CEV41					,541**	,459**	,446**	,432**	,403**	,468**	,420**	,343**
CEV42						,564**	,565**	,572**	,512**	,452**	,438**	,385**
CEV43							,479**	,619**	,441**	,439**	,517**	,433**
CEV44								,528**	,671**	,416**	,414**	,411**
CEV45									,521**	,432**	,469**	,503**
CEV46										,441**	,401**	,393**
CEV47											,639**	,499**
CEV48												,551**
CEV49												

Note: ** Correlation is significant at the 0.01 level (2-tailed).

The results of factor analysis (Table 1) in addition to the results of the correlation analysis (Table 9) suggest several decisions concerning reconstruction of *Discussability*. One alternative is to add item CEV41 to the measurement of the above described construct *Supportability*. However, the elimination would decrease reliability of the measurement of the construct *Discussability* (to Cronbach's alpha 0,900) but would not bring changes in measurement of the construct *Supportability.* Similarly, i.e. without added value to increased reliability, item CEV41 could be added to the structure of the construct *Congruency of Leadership.* However, the meaning of the item falls apart from the ones constituting this virtue.

Another decision could be re-connecting the items for measuring *Discussability* as organizational conscientiousness. Such a construct would connect items CEV38-40, CEV43, CEV45 and CEV48-49 and would be rather highly reliable (Cronbach's alpha 0,862). Other re-construction would include such items as CEV42-48 and could focus on *Discussability* as openness. Reliability of this construct would be expressed by Cronbach's alpha equal to 0,872. However, there are two overlapping items CEV43, CEV45 and CEV48 which contribute to reliability of the two new constructs (Table 10).

Table 10. Evaluation of reliability for potentially new constructs

	Discussability as organizational conscientiousness								***Discussability as openness***							
Cronbach's alphas	*0,862*	*0,844*	*0,843*	*0,837*	*0,819*	*0,816*	*0,812*	*0,785*	*0,872*	*0,858*	*0,854*	*0,850*	*0,838*	*0,830*	*0,829*	*0,807*
CEV38	+	+	+	+	+	+	+	+								
CEV39	+	+	+	+	+	+	+	+								
CEV40	+	+	+	+	+	+	+	+								
CEV42									+	+	+	+	+	+	+	+
CEV43	+	+	+		+				+	+		+		+		
CEV44									+	+	+	+	+	+	+	+
CEV45	+	+		+			+		+	+	+		+			
CEV46									+	+	+	+	+	+	+	+
CEV47									+	+	+	+	+	+	+	+
CEV48	+		+	+		+			+		+	+			+	
CEV49	+	+	+	+	+	+	+	+								

Sign "+" denotes that the item is included into construct.

Comparison of the achieved levels of reliability in the newly constructed measurements (Table 10) suggests that item CEV43 (an attitude towards reporting about unethical behaviour) would be more important for the first construct; meanwhile item CEV45 (possibilities to report about unethical behaviour) would be more important for the second one as its elimination causes less loss in reliability. Also comparing the coefficients of reliability, item CEV48 (possibilities to improve unethical behaviour) seems to be more meaningful in the structure of the second construct.

Finally, validation of the measurement of the construct *Sanctionability* also seems rather complicated because, on the one hand, factor analysis (Table 1) and correlation analysis (Table 11) suggest some decisions for potential improvement of the measurement by eliminating/including some particular items. On the other hand, checking the level of reliability of all possible variations of hypothetically new constructs bring us to a conclusion that there is no way of improving the measurement. For example, the results of factor analysis (Table 1) suggest that items CEV52-58 potentially compose the essence of the construct, and items CEV50-51 should be eliminated. However, such a decision causes decrease in the initially established Cronbach's alpha to 0,835. Elimination of additional items with lower factorial loadings (i.e. CEV53-54, CEV56, the 8th component in Table 1) does not lead to a better decision either as Cronbach's alpha becomes as low as 0,749.

Table 11. Convergent and discriminant validity: *Sanctionability*

	CEV50	CEV51	CEV52	CEV53	CEV54	~~CEV55~~	CEV56	CEV57	CEV58
CEV50		,623**	,371**	,368**	,511**	~~,227**~~	,455**	,424**	,435**
CEV51			,470**	,420**	,505**	~~,333**~~	,484**	,470**	,461**
CEV52				,427**	,441**	~~,436**~~	,389**	,469**	,533**
CEV53					,487**	~~,296**~~	,477**	,576**	,422**
CEV54						~~,295**~~	,534**	,516**	,500**
~~CEV55~~							~~,326**~~	~~,323**~~	~~,363**~~
CEV56								,586**	,420**
CEV57									,528**
CEV58									

Note: ** Correlation is significant at the 0.01 level (2-tailed).

However, following the results of correlation analysis (Table 11), item CEV55 should be eliminated from the structure of the measurement of the construct *Sanctionability.* The elimination results in slightly increased reliability (Cronbach's alpha 0,869). Another trustworthy decision which can be identified following the results of correlation analysis could be connecting items CEV50-51 to some other items meant for measuring the construct of *Discussability* and highlighting organizational conscientiousness as a virtue with Cronbach's alpha of 0,900. The construct would connect such items as CEV40-43, CEV45, and CEV47-51. However, elimination of items CEV50-51 from the initial set measuring *Sanctionability* would cause decrease in reliability, i.e. to Cronbach's alpha 0,844. Hence, on the one hand, the incoherent interrelations of the items suggest existence of potentially better solutions; on the other hand, it seems that additional data would be useful for further search for the solutions. Requirement for the additional data means collecting new data not only from other organizations and strictly controlling sampling procedures but also collecting data using different orders of statements in the questionnaire because the question about the effect of the items order on the respondents' answers remains open.

4. Discussion and Conclusions

The two analyzed CEV models, i.e. the 58-item one suggested by Kaptein (2008) and its shortened version elaborated by De Bode et al. (2013) could be called valid for a Lithuanian socio-cultural context, but with some limitations because the mixed loadings of the virtues such as *Discussability*, *Transparency*, *Supportability* or *Sanctionability* seem not to be sufficiently clear in the Lithuanian data analysis. Moreover, the results of the validation analysis suggest additional solutions for restructuring the measurement dimensions both ensuring the highest possible reliability of the scale and a decreased number of the measurement items. These results are presented in Table 12.

Table 12. Elaborated model for the Lithuanian data: Constructs, items and Cronbach's alphas

Title of the construct	Items included (excluded)	Cronbach's alpha
Clarity	CEV1-8, CEV10 (Excluded CEV9)	0,916
Congruency of leadership	CEV11-20	0,934
Feasibility	CEV23-25 (Excluded CEV21-22, CEV26)	0,852
Supportability	CEV28-32 (Excluded CEV27)	0,889

Transparency	CEV33-35 (Excluded 36-39 to be considered as a new virtue of *Personal authenticity* or *Freedom from coercion*)	0,840 0,757
Discussability	CEV40-49, CEV38-39 shall be added Further elaboration is needed for decreasing the number of items to *Discussability* as conscientiousness (CEV38-40, CEV43, CEV45 and CEV48-49) or openness (CEV42-49)	0,906 0,862 0,872
Sanctionability	CEV50-54, CEV56-58 (Excluded CEV55) Further elaboration is needed for clarification of the structure	0,869

Exclusion of CEV9 from the construct of *Clarity* and CEV55 from *Sanctionability* may be conditioned by the type of the organization where the survey was carried out rather than a socio-cultural environment. It performs regulatory functions, which shifts the respondents' focus on proper use of employer's property or rules of servicing clients rather than environmental issues. On the other hand, concern for environment has not received extensive attention from Lithuanian public organizations. Rather, environmental issues are considered as individual concern, unless the organization is engaged in standardization processes of environmental management. Likewise, human resource management practices in that type of organizations are regulated by strict contractual relationships, and ethical behaviour as a criterion for promotion (CEV55) is not explicitly taken into consideration at the level of specialists.

Exclusion of CEV21, CEV22 and CEV26 from *Feasibility* and formation of a new virtue of *Personal authenticity* (or *Freedom from coercion*) is an important virtue in the post-soviet context where autonomy was suppressed for a long time, conformity was used as a strategy of survival, and at the same time rules and regulations were violated secretly as an expression of autonomy, considering the officially declared normative values as relativistic (Ivanauskas, 2011; Ryan, 2006; Ungvari-Zrinyi, 2001; Vasiljevienė & Freitakienė, 2002). Therefore, a legitimate opportunity to remain faithful to one's norms and values which is given by an organization could be perceived by employees as a different value, compared to the one that encompasses organization's attempts to enable them to carry out tasks responsibly. And contrariwise, an organization's pressure on employees to compromise their ethical values can be evaluated much more negatively from an ethical perspective than its failure to provide sufficient resources. Consequently, the socio-historical past could be relied when explaining exclusion of CEV27 from the measurement of the *Supportability* virtue. The formulation of the statement containing the phrases "totally committed to the (stipulated) norms and values of the organization" leaves no space for individual autonomy and critical assessment of those values. Perhaps excluding the adverb "totally" from the statement may change the results of statistical analysis.

Exclusion of items CEV36-39 from the *Transparency* construct can be explained by their contents rather than socio-cultural context, except CEV 36. The item relates to the perception of feedback giving on the results of criticism and expresses a rare form of organizational behavior in Lithuanian companies. CEV37-39 fall under organizational commitment and attempts to manage ethics through, e.g. ethics auditing and communicating about its results. Hence, these items, in particular CEV38-39 combine with some items of the *Discussability* construct dealing with reporting and, hence, ethics hotlines and internal whistleblowing systems. In this respect, the virtue of *Discussability* could be more focused either on ideal communication conditions providing the possibility to raise and discuss ethical issues in the organization, to be sincere and open, based on the theory of communicative action by Habermas (1984). On the other hand, it could be related to the virtue in the organization's character, highlighting self-reflection and self-correction in the form of organizational conscientiousness. These two dimensions need further exploration.

The main limitation of this study is that the data were collected in a public organization where about a half of the respondents were in their 50s and older. It is logical to expect that the instruments would bring different results working with different samples. Moreover, it is also possible that the order of the statements as they were presented for the respondents could have an effect on the results. In other words, it could be expected that presenting the items measuring *Sanctionability* and/or *Discusability* first and then the items measuring *Clarity* and/or *Feasibility*

would result in different distributions of answers simply because of such human factors as fatigue and decreased concentration on the statements etc. Thus, still further explorations are essential for elaborating the instrument of ethical organizational culture in Lithuania.

Acknowledgement

The research was funded by the European Social Fund under the Global Grant measure.

References

Ayuso, S., Rodríguez, M. Á. & Ricart, J. E. (2006).Using stakeholder dialogue as a source for new ideas: A dynamic capability underlying sustainable innovation. *Corporate Governance*, 6 (4), 475–490.

Baucus, M. S., Norton, W. I., Baucus, D. A. & Human, S. H. (2008). Fostering creativity and innovation without encouraging unethical behavior. *Journal of Business Ethics*, 81 (1), 97-115.

Boons, F., Montalvo, C., Quist, J. & Wagner, M. (2012). Sustainable innovation, business models and economic performance: An overview. *Journal of Cleaner Production*, 45, 1–8.

DeBode, J. D., Armenakis, A. A., Feild, H. S. & Walker, A. G. (2013). Assessing ethical organizational culture: Refinement of a scale. *Journal of Applied Behavioral Science,* 49(4), 460-484.

Delmottea, J., De Winneb, S. & Selsc, L. (2012). Toward an assessment of perceived HRM system strength: scale development and validation. *The International Journal of Human Resource Management* 23 (7), 1481–1506.

Habermas, J. (1984). The Theory of Communicative Action. Boston: Beacon Press.

Huhtala, M., Kangas, M., Lämsä, A.-M. & Feldt, T. (2013). Ethical managers in ethical organizations? The leadership-culture connection among Finnish managers. *Leadership and Organization Development Journal,* 34 (3), 250 – 270.

Içke, M. A. (2011). Global financial crisis from an ethical perspective. *Research Journal of International Studies*, 19, 82–94.

Ivanauskas, V. (2011). *Lietuviškoji nomenklatūra biurokratinėje sistemoje: Tarp stagnacijos ir dinamikos (1968-1988) [Lithuanian Nomenclature in Bureaucratic System: Between Stagnation and Dynamics (1968-1988)]*. Vilnius: Lietuvos istorijos instituto leidykla.

Kaptein, M. (2008). Developing and testing a measure for the ethical culture of organizations: The Corporate Ethics Virtue Model. *Journal of Organisational Behaviour*, 29, 923–947.

Kaptein, M. (2010). The ethics of organizations: A longitudinal study of the U.S. working population. *Journal of Business Ethics*, 92, 601–618.

Kim, K. & Cho, B. (2011). Development of an individualism-collectivism scale revisited: a Korean sample. *Psychological Reports* 108(2), 393-401.

Lewis, V., Kay, K. D., Kelso, C. & Larson, J. (2010). Was the 2008 financial crisis caused by a lack of corporate ethics? *Global Journal of Business Research,* 4 (2), 77–84.

Parsian, N. & Dunning, T. (2009). Developing and validating a questionnaire to measure spirituality: A psychometric process. *Global Journal of Health Science* 1(1), 2-11.

Peterson, R. A. (1994). A meta-analysis of Cronbach's coefficient alpha. Journal of Consumer Research, 21(2), 381-391.

Riivari, E. & Lämsä, A.-M. (2013). Does it pay to be ethical? Examining the relationship between organization's ethical culture and innovativeness. *Journal of Business Ethics*, DOI 10.1007/s10551-013-1859-z.

Ruiz-Palomino, P., Martinez-Canas, R. & Fontrodona, J. (2013). Ethical culture and employee outcomes: The mediating role of person-organization fit. *Journal of Business Ethics*, 116, 173-188.

Ryan, L.V. 2006. Current ethical issues in Polish HRM. *Journal of Business Ethics*, 66, 273–290.

Solomon, R. C. (2004). Aristotle, ethics and business organizations. *Organization Studies*, 25, 1021–1043.

Trevinõ, L. K., Butterfield, K. D. & McCabe, D. L. (1998). The ethical context in organizations: Influences on employee attitudes and behaviors. *Business Ethics Quarterly,* 8(3), 447-476.

Ungvari-Zrinyi, I. (2001). Moralinės kultūros tendencijos postkomunistinėse visuomenėse [Moral culture in post-communist countries]. In N. Vasiljevienė (Ed.), *Dalykinė etika [Business ethics]* (pp. 229-247). Kaunas: Vilnius University.

Übius, Ü. & Alas, R. (2009). Organizational culture types as predictors of corporate social responsibility. *Engineering Economics*, 1 (61), 90-99.

Vasiljevienė, N., Freitakienė, R. (2002). Are we ready to accept European standards? In N.Vasiljevienė and R.J.M. Jeurissen (Eds.), *Business Ethics: From Theory To Practice* (pp. 172-195). Vilnius: Vilnius University.

Vogt, W. P. (2005). *Dictionary of Statistics & Methodology. A Nontechnical Guide for the Social Sciences* (3rd ed.). Sage.

Webb, W. N. (2012). Ethical culture and the value-based approach to integrity management: a case study of the department of correctional services. *Public Administration and Development*, 32, 96–108.

Yang, Y. & Green, S. B. (2011). Coefficient alpha: A reliability coefficient for the 21st century. Journal of Psychoeducational Assessment, 29(4), 377-392.