

# A Verification of a Questionnaire to Determine the Level of Management Culture

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## Abstract

This paper discusses the management culture, as one of the sparsely analysed cultures. These management culture components are detailed: culture of managerial staff, culture of organization of management processes, culture of management work conditions, culture of documentation systems. The results of the study presented in the paper are only one part of the "Determination of management cultural level for the implementation of the concept of socially responsible company" study. Only the methodological quality characteristics of the management culture unit of the questionnaire are provided. The empirical study was conducted in two groups of industrial companies, whose employees work in branches situated in other countries (Ukraine, Russia, Estonia, Latvia, Romania). Therefore, the relevance of the questionnaire verified is also especially significant in international context.

**Keywords:** Management culture, Questionnaire, Methodological characteristics

## 1. Introduction

The conception of management culture is not a concept often found in scientific sources. Scientists analysing cultural aspects most often name culture of the organization or organizational culture, sometimes a corporate culture is mentioned as well. Management culture is revealed through its basic elements such as culture of managerial staff, culture of organization of management processes, culture of management work conditions, culture of documentation system (Zakarevicius, 2004; Vveinhardt, 2011a). Taking components of the management culture separately, staff culture, organization of management processes, working conditions, analysis of documentation system are found. Staff culture in primary schools is analysed by A. Miller (1994), academic staff culture is analysed by M. Van Houtte (2004), prison staff culture presents B. Crewe, A. Liebling & S. Hulley (2011). Organization of management processes discusses D. A. Gardin (1998), Ch. E. Beck & G. R. Schornack (2005), C. Hales (2001) et al. Working conditions analyses J. J. Jonas et al. (1969), F. G. Benavidesa et al. (2000), W. A. Firestone & J. R. Pennell (1993) et al.

Object of the study: a questionnaire to determine the level of management culture.

Aim of the study: to verify the methodological quality characteristics of subscales of the questionnaire to determine the level of management culture.

Objectives of the study:

1. To analyse components of the management culture.
2. To substantiate the reliability of methodological quality characteristics of the questionnaire scales.

Methods of the study: the paper was prepared using methods of literature analysis, synthesis and survey. For processing of empirical data the following methods were used: factorisation (primary and secondary), for determination of reliability of psychometric characteristic's scale. The data of the study was processed using SPSS (*Statistical Package for the Social Sciences*) application (version 21).

**Limitations of the study.** This paper exclusively presents only the results of verification of methodological quality characteristics of the questionnaire without going into the details on other results of the study. As the scope of the questionnaire is quite large (questionnaire consists of two blocks), this paper focuses only on one block, i.e.

management culture. This separation is also carried out in order to prove that the individual parts of the questionnaire can be used as two separate instruments.

**Directions for future research.** In the future, it would be significant to analyse the possibility of shortening the instrument by retesting. The questionnaire, as a universal instrument, could be used to research and evaluate the management culture of departments of transnational companies operating in culturally diverse countries.

**2. Theoretical substantiation**

Management culture consists of four interrelated criteria that determine the quality of management of the organization: culture of managerial staff (Furnham & Stringfield, 1993; Raz & Fadlon, 2006; Pino et al., 2008; Ford & Collison, 2011 and others), culture of organization of management processes (Pye, 1993; Gebauer, 2013; Parker & Rees, 2013 and others), culture of documentation system (Briggs & Pate, 1996; Johnson & Guthrie, 2012 and others), culture of management working conditions (Sundquist & Johansson, 2000; Blekesaune, 2005; Vveinhardt, 2009; Cremers, 2010; Vveinhart, 2011b and others). General culture of managerial staff characterizes the managers of the organization, their individual characteristics, values and managerial education which determines the management style and operational efficiency of this chain. General culture of managerial staff is named as fundamental characteristic, that determines the rationality of organization of the management processes, regulation, work organization for subordinates, communication with customers and other interested parties, use of technical and information technology tools in operational processes. System used for creation, storage and use of documentation in activities of the organization reflects the culture of documentation system. Mastering the latest management knowledge and ability to creatively interpret it and apply affects the level of working conditions' culture, that is, formation of the physical environment by creating comfortable, healthy and safe working conditions, internal organization's climate and investments which supports and promotes staff performance.

**3. Research methodology**

As it has already been discussed in the part of the theoretical review, management culture includes certain four areas that have been distinguished as scales in the questionnaire: culture of managerial staff (in the table Mc1), culture of organisation of the management processes (in the table Mc2), culture of the documentation system (in the table Mc3), culture of working conditions (in the table Mc4). Subscales of the management culture (Table 1) include 16 subscales, and the latter include 104 items (in the table Mc/i 104). The number of items on the scale is distributed quite evenly. The average number of items on the subscale of the part of the management culture is 26 items (min = Mc/i 24, max = Mc/i 28 items).

Table 1. The structure of the part of management culture of the questionnaire

Management culture	Scales	Subscales	Items number in subscales
Mc1	= <b>Mc 4</b>	= <b>Mc/s16</b>	Mc/i 1.1 – Mc/i 1.7
			Mc/i 1.8 – Mc/i 1.12
			Mc/i 1.13 – Mc/i 1.19
			Mc/i 1.20 – Mc/i 1.28
Mc2	= <b>Mc 4</b>	= <b>Mc/s16</b>	Mc/i 2.29 – Mc/i 2.35
			Mc/i 2.36 – Mc/i 2.40
			Mc/i 2.41 – Mc/i 2.45
			Mc/i 2.46 – Mc/i 2.52
Mc3	= <b>Mc 4</b>	= <b>Mc/s16</b>	Mc/i 3.53 – Mc/i 3.61
			Mc/i 3.62 – Mc/i 3.67
			Mc/i 3.68 – Mc/i 3.73
			Mc/i 3.74 – Mc/i 3.79
Mc4	= <b>Mc 4</b>	= <b>Mc/s16</b>	Mc/i 4.80 – Mc/i 4.85
			Mc/i 4.86 – Mc/i 4.90
			Mc/i 4.91 – Mc/i 4.98
			Mc/i 4.98 – Mc/i 4.104

Note: **Mc** – management culture; **Mc/s** – subscales of management culture; **Mc/i** – items of management culture.

In order to test the reliability of the questionnaire, an empirical study, the results of which are presented in more details in the next part of the article, was carried out.

#### 4. Results of the study

Two groups of Lithuanian companies whose main activity is production services were chose for this study. In both groups of production companies, in total, during the study period, 1915 employees worked (1030 and 885 employees). The main office of companies is in Lithuania, but the activity includes other countries such as Ukraine, Russia, Estonia, Latvia, Romania, where the branches of companies were established.

Top-level companies' group managers with whom the content of the questionnaire and the course of the survey was consulted, were interested in execution and results of the study. Because the timing of the study was partly unfavourable (survey carried out in July - August, 2013), only 1717 employees participated in the survey (i.e. 89.6 percent). On the whole, this sample is sufficient to draw conclusions about the quality of the methodological characteristics of the questionnaire. The sample of respondents' demographic criteria reflects the rich diversity in position, age, length of service and other aspects.

According to J. Vveinhardt (2012), it is very important to compare the methodological quality of the subscales of the pilot and basic research instrument according to the meanings of the Cronbach alpha reliability. It presents the instrument reliability in respect of repeated actions by measuring with the Spearman–Brown coefficient; it discusses the correlation of unit entity by more detailed presentation of the indicator suitability and / or incongruity to the distinguished scale. During the primary factorisation the entity of criteria is calculated, during the second – the criteria are incorporated in scales.

Table 2 shows the methodological quality characteristics of four subscales that make up the scale of managerial staff culture. Cronbach's alpha coefficient values vary from 0.74 to 0.86. As is known, the closer Cronbach's alpha coefficient value is to one, the better is internal consistency of the scale. As can be seen, the percentage of explained dispersion on this scale ranges from 39.16 to 53.77, which indicates that such percentage of the respondents agrees with isolated factors. Because explained dispersion of the factor is greater than permissible 10 percent threshold, it means this scale does not contain items that reduce the spread. Minimum factorial weight (L) cannot be lower than 0.3. If it is lower than 0.3, this indicates that an inadequate item is found in the subscale. Analysing factorial minimum weight values of the managerial staff culture scale, it appears that the lowest weight, i.e. 0.47 was recorded in only one subscale. The mean of minimal unit correlation ( $r/itt$ ) in subscales of managerial staff culture - from 0.37 to 0.53. So, not less than 0.2, which confirms that there is no inadequate claims in the subscales.

Table 2. Methodological Quality Characteristics of Managerial Staff Culture Subscales

Subscales	Number of items in subscale	Explained dispersion, pct.	Cronbach's alpha	Spearman-Brown	Factorial weight (L)			Correlation of unit entity ( $r/itt$ )		
					mean	min	max	mean	min	max
General culture level of managerial staff	7	53.77	0.86	0.83	0.73	0.63	0.77	0.53	0.34	0.77
Management science knowledge level	5	41.56	0.74	0.61	0.64	0.47	0.71	0.39	0.11	0.68
Management staff's personal and professional characteristics, leadership style	5	51.01	0.76	0.66	0.71	0.64	0.77	0.50	0.25	0.76
Ability to lead (the art of leadership) level	9	39.16	0.80	0.77	0.62	0.47	0.72	0.37	0.13	0.70

Source: made by author.

Methodological quality characteristics of organization of management processes culture subscales (Table 3). Cronbach's alpha coefficient values on this scale are high, i.e. ranging from 0.72 to 0.82. Explained dispersion percentage of analysed scale falls into range of 42.21 to 49.29 percent, which indicates a relatively high level of approval. On this scale, minimal factorial weight detected in only one subscale, i.e. 0.36 in the subscale of the regulation of optimal management processes. However, the lowest factorial weight also exceeds the minimum threshold of 0.3. Correlation of unit entity indicates that items of the questionnaire correlates to each other with isolated subscale, because r/itt mean is 0.40 to 0.47.

Table 3. Methodological Quality Characteristics of Organization of Management Processes Culture Subscales

Subscales	Number of items in subscale	Explained dispersion, pct.	Cronbach's alpha	Spearman -Brown	Factorial weight (L)			Correlation of unit entity (r/itt)		
					mean	min	max	mean	min	max
Optimal management processes regulation	7	49.29	0.82	0.75	0.69	0.36	0.78	0.47	0.13	0.77
Rational organization of managerial work	5	48.60	0.73	0.70	0.69	0.55	0.75	0.47	0.22	0.75
Modern management processes' computerization level	5	49.64	0.72	0.68	0.70	0.40	0.81	0.46	0.09	0.76
Greeting visitors, meeting conduction, telephone conversations and etc. culture	7	42.21	0.77	0.76	0.64	0.48	0.73	0.40	0.17	0.71

Source: made by author.

Methodological quality characteristics of the management's working conditions culture subscales shown in table 4, indicates that the Cronbach's alpha coefficient values are ranging from 0.66 to 0.84. The lowest percentage of explained dispersion is 37.61 which is above of set 10 percent threshold. Here the minimal factorial weight is 0.50, therefore, it can be argued that the claims of the subscales of this scale are quite closely related to each other. Correlation of unit entity on this scale indicates that the lowest mean is 0.35, highest - 0.42, which confirms that the items in the questionnaire correlated with isolated subscales.

Table 4. Methodological Quality Characteristics of the Management's Working Conditions Culture Subscales

Subscales	Number of items in subscale	Explained dispersion, pct.	Cronbach's alpha	Spearman-Brown	Factorial weight (L)			Correlation of unit entity (r/itt)		
					mean	min	max	mean	min	max
Working environment level	9	43.51	0.84	0.80	0.66	0.57	0.76	0.42	0.24	0.73
Workplace organization level	5	53.29	0.78	0.72	0.73	0.68	0.78	0.52	0.32	0.77
Work and rest mode, relaxation possibilities	6	46.54	0.77	0.76	0.68	0.51	0.76	0.45	0.21	0.76
Work safety, socio-psychological microclimate	6	37.61	0.66	0.62	0.61	0.50	0.71	0.35	0.13	0.67

Source: made by author.

Methodological quality characteristics of the documentation system culture subscales are shown in Table 5. The results indicate that on this scale the strongest approval of the respondents occurred in document-processing culture, i.e., both the explained dispersion percentage (46.58), and Cronbach's alpha (0.77) coefficient values are quite high. While on the subscale of the rational use of modern information technology Cronbach's alpha coefficient value is higher (0.80), the percentage of explained dispersion in this case, although not significantly, is lower (41.75) when comparing these two subscales to each other. Minimal factorial weight on this scale ranges from 0.47 to 0.66, and the mean of the correlation of unit entity - from 0.37 to 0.45. Thus, it can be said that the discussed indicators of this scale do meet the necessary reliability conditions of the questionnaire.

Table 5. Methodological Quality Characteristics of the Documentation System Culture Subscales

Subscales	Number of items in subscale	Explained dispersion, pct.	Cronbach's alpha	Spearman -Brown	Factorial weight (L)			Correlation of unit entity (r/itt)		
					mean	min	max	mean	min	max
Document-processing culture	6	46.58	0.77	0.66	0.68	0.62	0.72	0.45	0.23	0.71
Optimal document search and delivery system	5	48.33	0.73	0.72	0.69	0.66	0.74	0.47	0.28	0.73
Rational use of modern information technologies	8	41.75	0.80	0.74	0.64	0.54	0.69	0.40	0.19	0.69
Rational archival storage system	6	39.59	0.69	0.63	0.62	0.47	0.74	0.37	0.12	0.70

Source: made by author.

Traditionally, when the methodological quality characteristics of questionnaire's subscales are established, their secondary factorization must be performed. Primary and secondary factorization is needed when there is a very large-scale questionnaires. Subscales that make up the scale must be comparable in content and logic. During the primary factorization the criteria set is deducted, and during the secondary factorization those criteria are combined into the scales. 6th table shows the factorization results of general management culture scales and subscales.

Table 6. Factorization Results of Management Culture Scales and Subscales

Scales and subscales of the questionnaire	Principal components	Alpha factoring
Managerial staff culture		
Ability to lead (the art of leadership) level	0.87	0.84
Management staff's personal and professional characteristics, leadership style	0.87	0.82
General culture level of managerial staff	0.86	0.82
Management science knowledge level	0.74	0.62
Explained dispersion:	70.38%	61.27%
Management processes organization culture		
Optimal management processes regulation	0.90	0.89
Rational organization of managerial work	0.87	0.82
Greeting visitors, meeting conduction, telephone conversation culture	0.87	0.82
Modern management processes' computerization level	0.84	0.76
Explained dispersion:	75.74%	67.85%
Management working conditions culture		
Working environment level	0.86	0.84
Workplace organization level	0.80	0.67
Work safety, socio-psychological microclimate	0.77	0.72
Work and rest mode, relaxation possibilities	0.69	0.56
Explained dispersion:	61.28%	49.40%
Documentation system culture		
Rational use of modern information technologies	0.88	0.85
Optimal document search and delivery system	0.87	0.83
Document-processing culture	0.84	0.77
Rational archival storage system	0.80	0.71
Explained dispersion:	71.70%	62.54%

Source: made by author.

The results of the secondary factorization of managerial staff culture indicates that factorial weights in the subscales of this scale ranges from 0.74 to 0.87 (according to *Principal Components* method) and from 0.62 to 0.84 (according to *Alpha factoring* method). Subscales covering the organization of management processes culture scale, reflects such results of the factorization: minimal weight 0.84, maximal 0.90 (according to *Principal Components* method)

and minimal 0.76, maximal 0.89 (according to *Alpha factoring* method). On the scale of management's working conditions culture such subscales' indicators were determined: 0.69 - 0.86 and using the secondary method 0.56 - 0.84. The results of the secondary factorization of documentation system culture indicates that factorial weights ranges from 0.80 to 0.88 (according to *Principal Components* method) and from 0.71 to 0.85 (according to *Alpha factoring* method).

Secondary factorization results indicate that factorial weights are high, so the scales are reliable, a questionnaire is suitable for measuring the entirety of set features. In this case an explained dispersion, which shows how much respondents agree with this criterion is also high, i.e. in overall context of management culture scales it ranges from 61.28 percent to 75.74 percent (according to *Principal Components* method) and from 49.40 percent to 67.85 percent (according to *Alpha factoring* method).

## 5. Conclusions or results and discussion

The development level of management culture can be considered as a methodological basis for organic systematic integration of social responsibility concept.

Very high requirements are raised for the newly created questionnaire, therefore a verification of the methodological quality characteristics of each part, scale and subscale is particularly important. Most complicated is the fact that the results of a verification of the questionnaire may vary in the cases of varying sample sizes. Results of this study confirms the successful formation process of the questionnaire. Although, obtained indicators sometimes show lower results, however, they are consistent with validity and reliability requirements of the questionnaire. So, the high values of the coefficients, indicates that the items of the management culture subscales, included in the instrument, are closely related, the instrument can be applied to diagnose the determination of the level of management culture.

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