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Reliability of methodological and psychometric characteristics of the questionnaire of congruence of personal and organizational values

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Abstract

Research background: Congruence of employees' personal and organizational values means that the employee both accepts and cherishes organizational values, as well as follows them in daily activities of the organization. Different forms of values in the organization are derived from three subjects (employees, managers, and the organization as a whole). From this perspective, value congruence occurs when employees' personal values match the organizational values, which are supported by the top management of the organization and are acceptable to the majority of members of the organization.

Purpose of the article: To carry out verification of methodological and psychometric characteristics of the questionnaire of congruence of personal and organizational values.

Methods: The survey of employees was carried out in 15 organizations, of which 11 are private and 4 belong to the public sector (N=374), and on the basis of the results of the research statistical and psychometric analysis of the data was performed. By developing the instrument of congruence of personal and organizational values, an analytical reflection method was applied. To conduct the empirical study, the mixed methods approach was employed, consistently combining qualitative and quantitative research methods, substanti-

ating the research results with different data sources and forms. An expert assessment method was chosen for identification of validity of the constructed instrument and suitability of its content. To identify the perceived congruence of personal and organizational values, employees' personal values, the values prevailing in the organization and the climate of the organization, employees' attitudes towards work and organizational performance results, the employees' questionnaire surveys in fifteen organizations were conducted. The sample was formed employing the stratified sampling methodology. To identify the reliability of methodological and psychometric characteristics of the constructed questionnaire, factor distribution, Cronbach alpha and Spearman Brown coefficients, factor weights, resolutions of test steps were calculated and explained. Multivariate statistical methods: correlation and factor analysis, etc. were also applied.

Findings & value added: The reliability and validity of the questionnaire were empirically proved and it is recommended that scholars researching values in organizations and value congruence should use the Questionnaire of Congruence of Personal and Organizational Values for Employees with the authors' consent.

Introduction

Congruence of employees' personal and organizational values means that an employee working in an organization not only agrees with its values, but also keeps and cherishes them, and follows them in daily activities of the organization. From the perspective of different forms of values in the organization, which are derived from three subjects (employees, managers, and the organization as a whole), value congruence occurs when personal values of the employees match organizational values, which are supported by the top management of the organization and are acceptable to the majority of members of the organization. Theorists and practitioners recognize the benefits provided, which are obtained by attracting the employees whose values are congruent with organizational values. Therefore, value congruence in organizations is gaining an increasing importance, as it ensures a focused and desirable behaviour of members of the organization and leads to the success of the organization, a positive employees' attitude to work and organizational climate. However, the objective of congruence of personal and organizational values becomes a complex practical problem. Scientists are conducting more and more theoretical and empirical research, which aims at determining the impact of value congruence on the person and the organization. Although the impact of value congruence and interface with other personal and organizational aspects are researched thoroughly, less attention is focussed on the research of the phenomenon itself and the search for the ways to access value congruence. Therefore, the axis of research of this phenomenon should be the evaluation of values, when it is determined how much individuals understand their personal and organizational values, how much they feel the harmony between their values and

organizational values and/or how much they believe they have to “trample” on their values in order to meet the expectations of the organization. The perception of value congruence and its occurrence would help to understand how to identify the reasons of the gap between the values of employees and the values of the organization and take purposeful action to ensure the congruence between these values. It is therefore very important to have and practically apply reliable instruments which would help to evaluate congruence of personal and organizational values, and on the basis of the research results to suggest the appropriate means for strengthening the value congruence.

It is paradoxical that many empirical studies carried out confirm the benefit of congruence of personal and organizational values and a positive impact on both the employee and the organization, but it is difficult to find the studies that would examine this phenomenon and answer the following problem questions: *why does value congruence take effect on the person and the organization?; what strength of value congruence has an influence on the positive effect?; how is the selection of different types and methods of evaluation important for and influences the obtained results of research?* Although studies of moderation and mediation carried out recently allow for forming a clearer view of the phenomenon of value congruence, but the researchers, giving guidelines for the further research, raise questions about a variety of different secondary factors, the impact of which has not yet examined.

Analysis of academic literature shows that a wide range of instruments to evaluate value congruence are offered, and although the same phenomenon, the focus of which is values, is examined, the instruments are different in their internal structure of scales, types and methods of evaluation. Even in the new studies, the research instruments developed a long time ago, reliable and already classic, are used, the most common are: Cable and DeRue (2002) *subjective person-organization fit method*, O'Reilly *et al.* (1991) *compatibility of organizational culture* and McDonald and Gandz (1991) *taxonomy of values*.

Other methods are used less frequently, and the most recent instruments are usually used to carry out only one research. In addition, the latest instruments are also rarely developed by research authors themselves, and old methods used are partially adapted to new research. The analysis of studies of value congruence shows that value congruence is usually found when evaluating the employee's subjective perception of the attitude to congruence of his and organizational values, without going deeper into the fact whether the respondent understands which of his values and which values of the organization he should evaluate, or by more comprehensive instru-

ments enabling to evaluate specific values of the employee and the organization, however, from an employee's perspective, these evaluated values are exclusively related to the work. It should also be noted that value congruence from the perspective of the typology of its evaluation is most commonly evaluated by choosing one type of evaluation. However, in order to fully evaluate the phenomenon of value congruence, different types of evaluation should be integrated in one research: perceived, subjective, and objective.

The purpose of the article is to present the reliability of methodological and psychometric characteristics of the questionnaire of congruence of personal and organizational values. This study is the continuation of the authors' previous study (Vveinhardt & Gulbovaite, 2016).

Literature review

Most often, the congruence of values is investigated in the aspect of impact of this phenomenon on the person and organization. Empirical studies conducted since 1999 have proved that congruence of personal and organizational values is positively related to employees' satisfaction with work (Lauver & Kristof-Brown, 2001; Silverthorne, 2004; Verplanken, 2004; Westerman & Cyr, 2004; Siegall & McDonald, 2004; Huang *et al.*, 2005; Ostroff *et al.*, 2005; Lawrence, 2006; Cennamo & Gardner, 2008; Edwards & Cable, 2009; Greguras & Diefendorff, 2009; Chiang & Birtch, 2010; Kallas *et al.*, 2010; Posner, 2010; Suar & Khuntia, 2010; Leung & Chaturvedi, 2011; Ahmad & Veerapandian, 2012; etc.), commitment to the organisation (Finegan, 2000; Silverthorne, 2004; Westerman & Cyr, 2004; Huang *et al.*, 2005; Ostroff *et al.*, 2005; Lawrence, 2006; Cennamo & Gardner, 2008; Greguras & Diefendorff, 2009; Chiang & Birtch, 2010; Posner, 2010; Suar & Khuntia, 2010; Leung & Chaturvedi, 2011; Agarwal & Sagar, 2012; etc.), identification with the organisation (Cable & DeRue, 2002; Edwards & Cable, 2009; etc.), civic behaviour (Cable & DeRue, 2002), motivation (Lawrence, 2006; Posner, 2010; etc.), proactiveness (Suar & Khuntia, 2010), delegation of decision-making (Ren, 2010), contextual activity, when the employee performs more than stated in his / her job description (Lauver & Kristof-Brown, 2001; Vogel & Feldman, 2009; etc.), and influences employees' performance results (Huang *et al.*, 2005; Lawrence, 2006; Greguras & Diefendorff, 2009; Suar & Khuntia, 2010; etc.). It should be noted that value congruence reduces employee turnover (Lauver & Kristof-Brown, 2001; Cable & DeRue, 2002; Siegall & McDonald, 2004; Westerman & Cyr, 2004; Ostroff *et al.*, 2005; Cennamo & Gard-

ner, 2008; Edwards & Cable, 2009; etc.), unethical behaviour in the organisation (Suar & Khuntia, 2010), monitoring of employees' work (Ren, 2010), anxiety and stress at work (Posner, 2010), organisational cynicism (Naus *et al.*, 2007), employees spare less time for activities unrelated to work (Siegall & McDonald, 2004). Scientists initiate discussions, constantly looking for new relationships of value congruence in the context of employees and the organization, confirming the benefit of this phenomenon to the employee and organization (Gulbovaite, 2017). Posner's (1993) research results demonstrate that both personal value systems and organizational value systems were found to be more important and, in the absence of one or the other, clarity of personal values was shown to have a more positive impact than clarity of organizational values. Sarabia *et al.* (2010) analysed gender differences in the aspect of congruence between personal and organizational values. The results of the study conducted by Anggraeni (2018) show that the psychological contract, organizational support, and value congruence have a positive influence on organizational citizenship behaviour of the employees by ensuring that the psychological contract of the employees is fulfilled, and the employees have congruence value to their organization. The results of study by Erkutlu and Chafra (2018) supported the positive effect of despotic leadership on employee's organizational deviance, as well as the mediating effect of employee's organizational identification. According to the authors, moreover, when the level of value congruence is high, the relationship between organizational identification and organizational deviance is strong, whereas the effect is weak when the level of value congruence is low (Erkutlu & Chafra, 2018). One of the aims of research conducted by Charbonnier-Voirin *et al.* (2017) was to identify the influence of employee-organization values congruence on the employee's perception of the employer brand. The results showed that the employer brand fully mediated the relationship between values congruence and organizational identification and positive word of mouth. After carrying out a comprehensive analysis of academic literature and insights, determining the opportunities of earlier developed instruments, a new questionnaire for complex investigation of congruence of personal and organizational values was designed.

Research methodology

The construction of the questionnaire covered 8 steps: 1) analysis of academic literature; 2) comparative analysis of conducted researches, instruments, models; 3) distinguishing components of the phenomenon; 4) dis-

tinguishing scales and subscales; 5) preparation of the questionnaire for experts; 6) expert evaluation; 7) removal of drawbacks and supplementing the questionnaire; 8) preparation of the questionnaire for the main survey. Evaluation of personal values, evaluation of organizational values, determination of value congruence and evaluation of the subjective effect on the person and the organization can be regarded as the central axes of the questionnaire.

The Questionnaire of Congruence of Personal and Organizational Values for Employees (Vveinhardt & Gulbovaite, 2016) consists of four scales: subjectively perceived congruence of personal and organizational values, personal values, organizational values, the effect on the person and the organization. The questionnaire consists of a total of 17 subscales and 116 items (in addition to socio-demographic characteristics).

In the first part of the questionnaire the perceived congruence of personal and organizational values, which is purposefully involved into the questionnaire in order to identify the trends of value congruence, is evaluated. The scale consists of five items, enabling to identify superficial congruence, without concretizing the importance of certain values neither to employees nor to the organization.

In order to determine whether the respondents truly understand their values and how they evaluate organizational values, the subjective evaluation of congruence of values of the employees and the values attributed to the organization, which is determined by comparing subjectively evaluated individual personal values of employees and organizational values attributed to the organization, is carried out. Two scales have been formed for subjective determination of value congruence: personal values and organizational values. The scale of personal values includes the following subscales: personal economic values; personal social values; personal moral values; personal spiritual values; personal professional values; personal aesthetic values; personal physical values. The seven subscales of personal values include 47 items. Seven subscales of organizational values (analogous to personal values) are presented in the questionnaire: economic values of the organization; social values of the organization; moral values of the organization; spiritual values of the organization; professional values of the organization; aesthetic values of the organization; physical values of the organization, which consist of the same number of items as in the subscales of personal values.

The scale for evaluating the effect on the person and the organization consists of 16 items, which are divided into three subscales: the employees' attitude to work, organizational climate and performance results. The purpose of this scale is to find out how value congruence relates to the effect

on the person and the organization. Respondents were asked to indicate the importance of the items in the questionnaire on the Likert scale from 1 — “not at all important” to 5 — “very important”.

The panel of foreign experts consisted of eight researchers who have excellent reputation in the field of organizational behaviour. Three of them are professors (two of them, of psychology; one, of the field of management), three are associate professors in the field of management, two are lecturers and researchers. Seven out of eight experts hold a doctoral degree: three of them in organizational behaviour, one in organizational psychology, one in social psychology, one in psychology sciences, and one in business administration. The research interest areas of all the experts who participated in the assessment are related to organizational behaviour. Experts who took part in the research had investigated employees’ values in organizations, published scientific research on congruence of personal and organizational values. Most experts have both scientific and practical experience (work or had worked as consultants) related to human resources management: personnel selection, talent management, staff motivation. The panel of foreign experts consisted of four experts from the United States and one from each country: Turkey, Belgium, Spain and Estonia. Although most of foreign experts were from the United States, this can be explained by the fact that congruence of personal and organizational values is the phenomenon that is most often investigated in the US; therefore, the majority of experts were chosen namely from this country.

The Lithuanian team of experts consisted of seven experts with more than 10 years of scientific and / or practical experience in the field of human resources management, the field of research interests is human resource management, and the researchers who participated in the research have published scientific works on the analysis of values of organizations. Thus, the competence and work experience of individuals selected for assessment enable to treat them as experts in assessment of congruence of personal and organizational values.

The results of the expert evaluation have shown that the developed questionnaire with respect to the content is high-quality, complete and appropriate for the investigation of the phenomenon of congruence of personal and organizational values. However, taking into account the experts’ comments, slight limitations of the developed questionnaire were identified and highlighted, therefore, minor corrections in the wording of the items and their layout have been carried out. On the basis of the results of the expert evaluation, the questionnaire to diagnose congruence of personal and organizational values has been prepared. The results of the experts’ evaluation are described in more detail in another article of the authors (broader

in: Vveinhardt & Gulbovaite, 2016). Thus, in order to fully determine the validity of the questionnaire, after examination of the validity of the questionnaire content, this study will evaluate the reliability of the questionnaire, criteria validity and construct validity.

The study involved 15 organizations, of which 11 are private and 4 belong to the public sector. According to the nature of their activity, the organizations distributed as follows: services organisations — 7, manufacturing and trade organisations — 4 of each. In the public sector, all the organizations surveyed provide services. In the private sector, by the field of activity the organizations distributed quite equally: 3 services organizations, 4 manufacturing organisations and 4 trade organisations. By the culturality of the organisations, there are 13 monocultural organizations and 2 multicultural organizations. According to the size, the surveys were conducted in 6 small groups (up to 50 employees), 5 medium sized groups (50-250 employees) and 3 large organizations (over 250 employees).

Organizations, in which the survey was carried out, were selected using a stratified sampling methodology. 374 respondents in total have completed the questionnaire. Respondents in 15 organizations of different types were interviewed. Two-thirds of the survey participants (67.4%) were private sector employees. In accordance with the areas of activity of organizations, most of the respondents (54.5%) belong to organizations providing services, the number of respondents working in the areas of production and trade activities is evenly distributed (24.1% and 21.4% respectively). This distribution of respondents by the sector and the area of activity were influenced by the principles of stratified sampling. Socio-demographic data about the employees (gender, education, age, the match between the position and the acquired speciality, the current position, length of service), which is important in further research, analysing the obtained data about the influence on the evaluation of values in respect of employees' socio-demographic criteria, has been recorded as well.

Research results

On the basis of the model of analysis of psychometric characteristics of the questionnaire, recommended by Tabachnik and Fidell (2006), firstly the reliability of the questionnaire was tested, having found Cronbach's alpha and the split half method indices. Methodological characteristics of quality of the scales forming the questionnaire of congruence of personal and organizational values — organizational values, subjective value congruence

and the impact of the person and the organization — are presented in Table 1.

In order to evaluate the internal reliability of the questionnaire, Cronbach's alpha coefficient was calculated, showing how the questionnaire items correlate. The closer Cronbach's alpha value to 1, the higher internal consistency of the questionnaire (the greater accuracy of the questionnaire measurement) is shown by the coefficient. However, different authors indicate the size of the coefficient of a reliable scale differently. According to DeVellis (1991), Nunnally and Bernstein (1994), Cronbach's alpha values are classified in accordance with the strength of the statistical connection as follows: minimally acceptable — 0.65, acceptable — 0.70, and optimal — 0.80. Churchill and Peter (1984) state that the unacceptable value is below 0.60. However, this indicator must be interpreted carefully, as its value depends not only on the strength of correlations between the variables, but also on the number of items on the scale (Netemeyer *et al.*, 2003). Values lower than 0.60 are acceptable when the scale consists only of a few items (Hair *et al.*, 2010) or the newly designed instruments (Nunnally, 1988). According to George and Mallery (2003), the coefficient of variation acceptable in the theory of testing is $0.5 \leq \alpha < 1$, but if the value of Cronbach's alpha is lower than 0.5, it shows that the scale/subscale of the questionnaire is not reliable, as the subscale contains the items, which do not meet the main suitability (validity) conditions. However, there are some reservations, i.e., if the constructs are of the psychological nature, even lower values may be acceptable (Field, 2006).

The results show that individual subscales of the questionnaire are characterized by high internal reliability, which does not require additional adjustments in the structure of the questionnaire. The found values of Cronbach's alpha coefficient range from $\alpha = 0.65$ to $\alpha = 0.93$. Cronbach's alpha values of subscales of Personal values varied from $\alpha = 0.65$ (Aesthetic values) to $\alpha = 0.84$ (Professional values), on the subscales of Organizational values from $\alpha = 0.75$ (Aesthetic values) to $\alpha = 0.92$ (Social values), of the subscales of the Impact on the person and the organization from $\alpha = 0.82$ (Organizational activity) to $\alpha = 0.93$ (Employees' attitude towards work), and the value of the scale of Subjective value congruence is $\alpha = 0.83$. The found internal reliability of the subscales of personal values is slightly lower in comparison with the reliability of subscales of organizational value.

However, high *Cronbach's alpha* values obtained with respect to the whole questionnaire suggest that the items of the subscales of personal values, organizational values, subjectively perceived value congruence and the impact on the person and the organization included in the questionnaire,

are closely related and suitable for the investigation of the distinguished components, as the identified coefficients of internal consistency show that the questionnaire complies with the requirements for their further analysis.

It should be noted that the value of *Cronbach's alpha* coefficient depends on the length of the scale — the more individual items the subscale consists of, the higher the coefficient may be. When more than five single steps of the test are integrated into the subscale, it is difficult to determine the true value and an additional measure of internal reliability of the subscale which would be more sensitive for measurement is required. Therefore, *test-retest reliability of the questionnaire* was tested by *Spearman–Brown* correlation coefficient (*Spearman's ρ*) — coefficient of statistical relationship of two variables measured on the ordinal subscale. When calculating the *Spearman–Brown*, ranks of two sequences are compared: differences between the ranks are found, squared and added together. Then additional coefficients are included in the calculations so that the values of the coefficient would vary from -1 to +1. If the value of the coefficient $\rho = 1$ means that the ranks of attributes coincide completely, and $\rho = -1$ shows the complete opposite of the attributes of ranks. The value of the *Spearman–Brown* coefficient $\rho = 0.80$ shows an adequate stability of the measure construct, and $\rho = 0.90$ — a good stability of the test construct (Kaplan & Saccuzzo, 1997). Acceptable value is $\rho = 0.60$ when the questionnaires being developed are applied (Brace *et al.*, 2006), and it should be noted that the value of the *Spearman–Brown* is always less than the *Cronbach's alpha* coefficient.

Spearman–Brown coefficient is calculated for subscales, which consist of five and more single items of the questionnaire, therefore, it could not be calculated in five subscales. *Spearman–Brown* coefficient on the scale of Personal values ranges from $\rho = 0.58$ to $\rho = 0.81$, on the scale of Organizational values from $\rho = 0.77$ to $\rho = 0.89$, on the scale of Subjective value congruence $\rho = 0.65$. The value of the *Spearman–Brown* of subscales of the Effect on the person and the organization does not fall below the really sufficient limit $\rho = 0.82$ and reaches a very high $\rho = 0.93$. Although the coefficient on the *subscale of personal moral values* is not so high $\rho = 0.58$, however, coefficients found on other scales should be evaluated not only as sufficient, but as high, thus the reliability of the questionnaire of congruence of personal and organizational values is proved again.

An important statistical index of reliability and validity of the questionnaire, *explained dispersion of the factor*, which shows whether the item of the questionnaire means the same as other items of that scale and what percentage of the total the object of study explains, has also been found. The

explained dispersion of the factor cannot be less than 10%, otherwise it shows that there are unsuitable items on the scale which must be found and removed, so that they do not reduce the dispersion, thus, the factor should be interpreted if it explains not less than 5-10% of dispersion.

The lowest dispersion on subscales of personal values is 34.57% (Professional values), the largest is 62.33% (Physical values), the lowest dispersion on subscales of organizational values is 44.14% (Professional values), the largest is 67.54% (Physical values). The explained dispersion on all subscales of the Effect on the person and the organization is greater than 65%, and the explained dispersion of the scale of subjective value congruence is 60.33%. The high percentage of explained dispersion shows that respondents agree with the developed items of the subscales.

A significant indicator of the methodological quality of the questionnaire, reflecting the internal consistency is coefficient of *resolution* or *Item Total Correlation* (r/itt), showing a statistical relationship between estimators of a single step of the questionnaire and the total score of the questionnaire, i.e. how much the items of the questionnaire correlate with the distinguished subscale. The closer the coefficient value to one, the more precisely the indicator of the questionnaire distinguishes the respondents with or without the measured property. In the questionnaires, based on expressing an opinion rather than on solution of cognitive logical tasks it is required that coefficient of resolution would be higher than the limit of 0.20, as otherwise it means that some indicator is not very suitable for the attributed subscale. Therefore, the indicators of the questionnaire with a low correlation to the overall score of the questionnaire (< 0.2) must be removed.

Another important characteristic of reliability and validity of the questionnaire is *factor loading* (L). On the basis of the model of factor analysis of the main components, the indicator of factor loading (L) of the questionnaire shows the cohesion of statistical relation of a variable. It is expressed as a coefficient of correlation between the variable and the extracted factor. When factoring items, factor loadings are determined, and the higher the factor loading of a subscale is, the more important the item is for the subscale, i.e. the more influence it has. Coefficient values can range from -1 to +1. So that the statement would be included in the subscale, only significant items are selected, factor loading of which must be positive, and not lower than 0.6.

The estimators of factor loadings of the *subscales of Personal values* of the analysed questionnaire range from $L = 0.58$ to $L = 0.79$. As one can see, it seems that these conditions would not comply with the subscale of professional values, but according to other authors (Velicer & Fava, 1998), the

minimum factor loading cannot be lower than 0.4, as the lower one shows that there is an inadequate indicator on the subscale. The average item total correlation (r_{itt}) of subscales ranging from $L = 0.32$ to $L = 0.61$ indicates that the items of the questionnaire correlate with the distinguished subscales.

The *subscales of Organizational values* are dominated by higher factor loadings of the steps of the test from $L = 0.66$ on the subscale of professional values to $L = 0.82$ on the subscale of physical values. Resolution of the steps of the test also exceeds the minimum threshold and ranges from $L = 0.43$ on the subscale of professional values to $L = 0.67$ on the subscale of physical values.

Methodological characteristics of quality of the scale of *Subjective value congruence* are also quite high. High factor loading of the test steps $L = 0.77$ was found. It is clear that this condition is not only met, but exceeded. The estimator $L = 0.58$ of the resolution of the test steps of the scale of Subjective value congruence meets the requirements and indicates that the scale consists of relevant items.

The length of the designed subscales of the *Impact on the person and the organization* ranges from 4 to 7 steps of the test. In this case, the explained dispersion of obtained factors reaches more than 65%. Very high internal consistency of all subscales should be noted, extremely high factor loadings of subscales from $L = 0.80$ (activities of the organization) to $L = 0.82$ (employees' attitude to work) dominate. Resolution of the steps of the test also sufficiently exceeds the minimum threshold — they range from $L = 0.64$ to $L = 0.67$.

Very high internal consistency of practically all subscales should be noted, high factor loadings of indicators dominate, and therefore it can be argued that the constructed questionnaire of congruence of personal and organizational values is characterized by high methodological quality.

After finding methodological characteristics of quality of the questionnaire of congruence of personal and organizational values, *factor analysis* was carried out to determine construct validity of the questionnaire. Primary and secondary factoring was applied to test and evaluate structural (construct) validity of subscales of questionnaires of a very large volume. Construct validity indicates whether the questionnaire measures what it is designed to measure and, therefore, the items forming the (sub)scale must be similar in their logic. Secondary factoring is a method indicating whether the subscales compose one or several factors. During primary factoring, the total of the items is calculated, and during the secondary factoring the items are integrated into scales. It is necessary to carry out in order to determine whether the derived score of the test would measure a complex scale relia-

bly and validly — personal values, organizational values, and the impact on the person and the organization. Factoring method is intended to reduce variables, i.e. to densify them. The higher the loading of the subscale is, the more suitable it is for the scale, and the more significant it is considered to be. Secondary factoring is carried out by two different methods: *Principal Components (One-way model F1)* and *Alfa Factoring (F1)*. The latter method was created by Cronbach to verify the dimensional structure of the test, i.e. whether the specific test steps are taken from the same general set of potential items of a certain questionnaire. The method of factorial validation was used to test the quality of the subscales. Firstly, the items of respective subscales were factorized by the method of principal components applying rotation of the factor axes by the highest resolution (VARIMAX rotation). After finding a theoretically meaningful structure of attributes, the obtained single factors were further examined by the alpha factoring method. It was proven that all three scales of the developed questionnaire are reliable (Table 2).

Factor loadings of the subscales of personal values range from 0.54 to 0.82 according to *Principal Components* method and from 0.45 to 0.80 by *Alpha factoring* method. The explained dispersion, which shows how strongly the respondents agree with the established subscales of personal values, is 50.45% and 42.95% respectively.

The results show that different groups of values, which correspond to certain subscales of values in the questionnaire, attributed to the scale of the personal values in accordance with the meaning, can be reasonably related to an integral scale of personal values.

The explained dispersion on the scales of organizational values both using the method of *Principal Components* and *Alpha factoring* method vary even around 70%, and factor loadings of subscales are high — from 0.71 to 0.91 according to *Alpha factoring* and from 0.76 to 0.92 in accordance with *Principal Components*.

The highest indicators of methodological quality are obtained in the case of the two factorings on the scales of the Impact on the person and the organization. The explained dispersion obtained during secondary factoring, when compared to other scales of the questionnaire, was the highest and ranges from 69.8% (using *Alpha factoring* method) to 79.6% (using *Principal components* method). Estimators of factor loadings of the subscales are also quite high — from 0.76 to 0.88 according to *Alpha factoring* and from 0.86 to 0.91 in accordance with the *Principal Components*.

High factor loadings and explained dispersion show that the scales and subscales of the questionnaire in the analysis of components of the impact on the person and the organization are also reliable.

Results of secondary factor analysis reveal the fact that factor loadings of subscales of the questionnaire of personal and organizational values are high in almost all scales (with the exception of one subscale of personal values) and do not fall below 0.6, indicating a significant/strong approval for the formed scales by the respondents. In both cases of secondary factoring methods relatively high scores — factor loadings and explained dispersion of factor analysis model (in per cent) — are obtained, therefore, it is reasonable to state that the questionnaire of congruence of personal and organizational values is valid and reliable, as subscales are reliable, and the prepared questionnaire, forming integral dimensions, is suitable for the measurement of the entirety of intended characteristics.

The attributes, which may be related, are determined by qualitative analysis, however, it is not enough to trace only the relationship of qualitative phenomena, facts and processes, therefore, to apply the regularity in practice, it should be evaluated quantitatively as well. Criterion validity shows to what extent the results of the applied methodology correspond to the investigated behaviour or characteristic, therefore, the *correlation analysis* was used to evaluate linear correlation of scales/subscales. Using the correlation analysis method, the statistical relationship between the measured attributes is expressed by the correlation coefficient (r — strength of relationship). If the values correlate, they are dependent, if they do not correlate, they can be both dependent and independent. The maximum correlation coefficient can be -1 or 1, depending on the coding of items. The closer to +1, the stronger the relationship between the variables is, i.e. the more reliable correlation relationships are, and the closer to zero, the weaker the correlation is. According to Mukaka (2012), values of correlation coefficients reaching 0.50–0.70 (positive correlation on average) are the indicator of quite a strong statistical relationship. The values of coefficients were interpreted on the basis of Burns (2000), i.e. 0.90–1.00 very high correlation or very strong relationship; 0.70–0.90 high correlation or strong relationship; 0.40–0.70 average correlation or relationship of average strength; 0.20–0.40 low correlation or a weak relationship; less than 0.20 is a very low correlation or very weak, insignificant relationship. Correlation relationships do not show causality between the distinguished scales and subscales, but they reveal significant facts, i.e., that when the value of one subscale varies, the value of another subscale varies as well.

The values of the indicators show that there are statistically significant and reliable relationships almost among all the subscales examined. Reliability between almost all of the examined subscales is very high ($p < 0.001$), and the values of correlation coefficients range from weak to strong (Table 3). The strongest intercorrelation relationships have been found between

professional values of the organization and *spiritual values of the organization* ($r = 0.826$) and with *social values of the organization* ($r = 0.807$). Strong, statistically significant relationships also exist between *social values of the organization* and *spiritual values of the organization* ($r = 0.782$) and with *moral values of the organization* ($r = 0.751$). Strong correlation was also found between *professional values of the organization* and *moral values of the organization* ($r = 0.736$) and the *physical values of the organization* ($r = 0.714$). Very close relationships were found between the *economic values of the organization* and *social values of the organization* ($r = 0.654$); *social values of the organization* and *physical values of the organization* ($r = 0.656$); *moral values of the organization* and *spiritual values of the organization* ($r = 0.699$); *professional values of the organization* and *aesthetic values of the organization* ($r = 0.699$).

It should be noted that only the subscales of organizational values intercorrelate by statistically significant strong relationships, and although reliable and statistically significant relationships were found between the subscales of personal values and the subscales of personal values and organizational values, they are characterized by weaker or moderate correlations. It was found that only a small percentage of subscales do not correlate. Statistically reliable relationships have not been found only between the *subscale of personal economic values* with almost all the *subscales of organizational values* and on the *subscale of personal physical values* with three *subscales of organizational values*.

It should be noted that no inverse statistically significant relationships have been found, and this shows a direct positive relationship that is meaningful, as both personal values and organizational values are encoded positively. This indicates that evaluation of importance of some values does not enable to evaluate other values as less important.

The strongest relationships have been found between *organizational values* and *the effect on the person and the organization*. Organizational climate, the employees' attitude towards work and organizational performance are best predicted by organizational values. Most *subscales of organizational values* and *effect on the person and the organization* correlate by statistically reliable relationship of average strength (from $r = 0.328$ to $r = 0.6$). Correlation of all *personal values* with *the effect on the person and the organization* is statistically significant, but weak, so it can be said that personal values are weaker to predict the effect on the person and the organization. It should also be noted that no statistically significant relationships between the subscale of *personal economic values* with any of the *subscales of the effect on the person and the organization* and the *subscale*

of personal physical values with two subscales of the effect on the person and the organization have been found.

Results showed that intercorrelational relationships between the subscales of the effect on the person and the organization are statistically reliable ($p = 0.000$) and strong: between the *employees' attitude towards work with the organizational climate* ($r = 0.647$); the *employees' attitude towards work with performance results* ($r = 0.663$); between the *organizational performance; organizational climate* ($r = 0.745$).

It can be assumed that the employees' attitude towards work, the organizational climate and organizational performance are significantly related, therefore, integrating these elements into one scale, i.e. the scale of the effect on the person and the organization is meaningful.

When analysing the strength of the correlation of united subscale indices, a strong relationship occurs between united scales of the subscales of the *effect on the person and the organization and organizational values* ($r = 0.673$). Relationships of average strength were found between the scales of *subjective value congruence and the effect on the person and the organization* ($r = 0.563$), and *organizational values and the effect on the person and the organization* ($r = 0.532$).

The results show that with predominating different organizational values within the organization (evaluated by employees as more important/occurring), the effect on the person and the organization is increasing: employees' attitude towards work improves, the organizational climate is more positive, and organizational performance improves. The effect on the person and the organization is also increasing with a stronger subjective congruence of personal and organizational values. Correlations of the united subscale indices once again confirm that personal values slightly predict organizational values, subjective value congruence, attitude towards work, organizational climate, organizational performance, therefore, great attention should be paid to the values prevailing in the organization and to the support of different values. The results of the research show that if there is a value gap in the organization, it is rather unlikely that the employees' attitude towards work, organizational climate, performance in the organization like this will be evaluated positively.

In summary it can be said that the systematic and statistically significant relationship between many subscales of personal values, organizational values and the effect on the person and the organization allows to state about the quality of the used questionnaire from the psychometric viewpoint.

Criterion validity is the most important indicator of the quality of the questionnaire (Lienert & Raatz, 1994). Although correlational relationships

show whether with the changing the value of one subscale, the value of the other subscale changes as well, but they do not show causality between the subscales. Therefore, in order to substantiate correlational relationships and to analyse the causal relationships, the *multivariate regression* (r^2) was calculated. *Linear multivariate regression model* has been drawn up to predict the values of the dependent variable according to the values of the independent variables (Hastie *et al.*, 2009). Suitability of the linear regression model for the available data was estimated by coefficient of determination r^2 . The closer the coefficient of determination is to one, the better independent variables in the regression model describe the values of the dependent variable.

The regression model was applied in order to determine whether personal values and organizational values are the factors having effect on the person and the organization. All subscales of personal values and organizational values in the regression models have been defined as independent variables (causes), and each subscale of the effect on the person and the organization and the joint estimate of the questionnaire of the impact on the person and the organization according to all subscales have been defined as dependent variables (consequence/effect). It should be noted that the larger the Fisher's statistic value, the larger the reliability of the questionnaire.

The value of coefficient of multivariate regression shows that (the joint index) of personal values and organizational values with the effect on the person and the organization correlate by high score (0.646) and explain 42% of the average of the dispersion. The results show that personal values and organizational values affect the person and the organization with 42 percent of success. Distinguishing individual subscales of personal values and organizational values, the effect on the person and the organization most strongly correlates with the *professional values of the organization* (0.28) and *social values of the organization* (0.21). *Moral organizational values*, by which one-fifth (20%) of the dispersion around the average can be explained by linear dependence are distinguished most of all subscales. According to the dispersion around the average, the effect on the person and the organization is also explained by *organizational physical values* (16%), *social values of the organization* (9%), and slightly less by *organizational professional values* (6%) and *organizational economic values* (5%). It should be noted that the *organizational economic values* gain a negative value and indicate that the economic values of the organization are negatively correlated with the effect on the person and the organization.

On the basis of the obtained results, the regression equation can be written down as follows:

$$PO = 1.110 - 0.166 * OEV + 0.214 * OSV + 0.161 * ODOV + 0.277 * OPV + 0.134 * OFV. \quad (1)$$

It can be argued that the effect on the person and the organization is stronger with the increase of significance of social, moral, professional, physical values of the organization, and with decreasing significance of economic values of the organization, while the other remaining values do not change.

By comparing the relationship of the scales of personal and organizational values with the scale of the effect on the person and the organization, it was found that only the scale of organizational values correlates with the scale of the effect on the person and the organization (0.645), and explains about 59 percent of dispersion.

In summary, it can be said that only organizational values have an influence on the person and the organization. With the growth (increase/gaining the importance) of organizational values, and if other values are not changing, the effect on the person and the organization is growing (increasing) as well. The regression equation can be written down as follows: $PO = 0.759 + 0.645 * OV$.

It is obvious that only the organizational values are an important lever of the effect on the person and the organization. The obtained facts and statistical regularities are meaningfully correlated with the results of studies carried out by other researchers (Leung & Chaturvedi, 2010; Seong & Kristof–Brown, 2012) that organizational values are a strong factor of the effect on the individual and the organization.

Discussion

Methodological characteristics of quality of the questionnaire of congruence of personal and organizational values for employees tested by empirical and statistical means show that the quality of the developed questionnaire is high. From the viewpoint of factor validation and criteria of internal consistency of the scales, fairly high indicators of this questionnaire have been achieved. Discussing methodological quality characteristics of the subscales of *personal values*, *organizational values*, *subjective value congruence* and *effect of the person and the organization*, a very high internal reliability of almost all of the subscales should be noted. The value of the

measure of the internal consistency on the subscales does not fall below 0.65 (in the case of the subscale of *Personal aesthetic values*) and reaches a very high coefficient of 0.93 (on the subscale of *Employees' attitude to work*). The reliability of the questionnaire in relation to the test-retest is also high, as its values range from 0.58 up 0.92. The averages of factor loadings are high (from 0.58 to 0.82), with the exception of subscales of *personal professional values*, the factor loading of which is below 0.6 (based on the mentioned rule). The explained dispersion of factors of the individual subscales reaches from 34.57% to 67.54%, while the coefficient of total item correlation ranges from 0.32 to 0.67 and correspond to the norm, thus, the minimum requirements are exceeded.

Exploratory and confirmatory factor analysis has confirmed the construct validity. High indicators obtained in the cases of both factorings show that congruence of personal and organizational values is a solid characteristic. When applying the method of Principal components, factor loadings on different subscales range from 0.54 to 0.92, and the explained dispersion is from 50.45% to 79.64%. Factor loadings of alpha factoring method range from 0.45 to 0.91, and the explained dispersion is from 42.95% to 69.79%.

Correlation analysis has confirmed the internal suitability of the questionnaire — separate scales of the questionnaire are statistically reliably correlated with each other. Reliability between almost all of the analysed subscales is extremely high ($p < 0.001$). Systematic and statistically significant correlation of the average and high strength between many scales of personal values, organizational values and the effect on the person and the organization allows to state about the quality of the used questionnaire from the psychometric viewpoint. Statistical relationships between personal values, organizational values and the effect on the person and the organization tested by the method of multivariate regression confirmed that the organizational values are a factor to ensure the strong impact on the person and the organization.

Conclusions

Quite high qualitative characteristics of the questionnaire obtained suggest that the items of the subscales of personal values and organizational values included in the questionnaire are closely related, consistent with the overall purpose of the questionnaire as a whole. The questionnaire is valid, reliable, and can be applied to diagnose congruence of personal and organizational values.

The value of the results of the research presented in this article is reflected in the fact that the newly developed original questionnaire meets high methodological and psychometric characteristics. Moreover, the questionnaire could be used by both scholars and organizations' executives in order to identify employees' personal values and highlight the prevailing values of the organization. The questionnaire is also designed to identify the congruence of perceived, objective and subjective values depending on the subjects the value congruence of which is compared.

With regard to limitations of the research this study was attended by only two multicultural organizations: one operating in Lithuania and the other located in Great Britain. Other organizations involved in the research operate in Lithuania; therefore, one of the ideas for future studies would be to conduct a study interviewing a larger number of multicultural organizations from different countries, in order to identify differences with regard to Lithuania and foreign countries. Other directions for further research could be as follows: (1) in order to shorten the questionnaire, retesting in a particular organization should be conducted; (2) in the authors' opinion, the questionnaire could be supplemented with the scale of benefits, continuing the survey in one of the organisations that participated in the survey in order to identify material benefit to organisations in the long run; (3) to carry out repeated research in the surveyed organizations in order to ensure monitoring of the value congruence process.

References

- Agarwal, P., & Sagar, P. (2012). The impact of person–organization value congruence on organizational commitment in a public sector organization. *International Journal of Research in Commerce & Management*, 3(9).
- Ahmad, K. Z., & Veerapandian, K. (2012). The mediating effect of person–environment fit on the relationship between organisational culture and job satisfaction. *International Journal of Psychological Studies*, 4(1). doi: 10.5539/ijps.v4n1p91.
- Anggraeni, A. I. (2018). The effect of psychological contract, perceived organizational support, and value congruence on organizational citizenship behavior: social exchange theory perspectives. *Quality-Access to Success*, 19(162).
- Brace, P., Arceneaux, K., Johnson, M., & Ulbig, S. G. (2006). Reprint of correction: does state political ideology change over time? *Political Research Quarterly*, 59(3). doi: 10.1177/106591290605900316.
- Burns, R. (2000). *Introduction to research methods*. Thousand Oaks: Sage.
- Cable, D. M., & DeRue, D. S. (2002). The convergent and discriminant validity of subjective fit perceptions. *Journal of Applied Psychology*, 87(5).

- Cennamo, L., & Gardner, D. (2008). Generational differences in work values, outcomes and person–organization values fit. *Journal of Managerial Psychology*, 23(8). doi: 10.1108/02683940810904385.
- Charbonnier-Voirin, A., Poujol, J. F., & Vignolles, A. (2017). From value congruence to employer brand: impact on organizational identification and word of mouth. *Canadian Journal of Administrative Sciences-Revue Canadienne Des Sciences De L Administration*, 34(4). doi: 10.1002/cjas.1379.
- Chiang, F., & Birtch, T. (2010). Pay for performance and work attitudes: the mediating role of employee–organization service value congruence. *International Journal of Hospitality Management*, 29(4). doi: 10.1016/j.ijhm.2009.11.005.
- Churchill, Jr. G. A., & Peter, J. P. (1984). Research design effects on the reliability of rating scales: a meta-analysis. *Journal of Marketing research*, 21(4). doi: 10.2307/3151463
- DeVellis, R. (1991). *Scale development: theory and applications*. London: Sage Publications.
- Edwards, J. R., & Cable, D. M. (2009). The value of value congruence. *Journal of Applied Psychology*, 94(3). doi: 10.1037/a0014891.
- Erkutlu, H., & Chafra, J. (2018). Despotism leadership and organizational deviance: the mediating role of organizational identification and the moderating role of value congruence. *Journal of Strategy and Management*, 11(2). doi: 10.1108/JSMA-04-2017-0029.
- Field, A. (2006). *Discovering statistics using SPSS*. London: SAGE Publications.
- Finegan, J. E. (2000). The impact of person and organizational values on organizational commitment. *Journal of Occupational and Organizational Psychology*, 73(2). doi: 10.1348/096317900166958.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: a simple guide and reference. 11.0 update*. Boston: Allyn & Bacon.
- Greguras, G. J., & Diefendorff, J. M. (2009). Different fits satisfy different needs: linking person–environment fit to employee attitudes and performance using self–determination theory. *Journal of Applied Psychology*, 94(2). doi: 10.1037/a0014068.
- Gulbovaite, E. (2017). Strengthening the congruence of personal and organizational values. In J. Vveinhardt (Ed.). *Congruence of personal and organizational values*. Croatia: InTech. doi: 10.5772/68033.
- Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis*. New Jersey: Prentice Hall.
- Hastie, T., Tibshirani, R., & Friedman, J. (2009). *The elements of statistical learning: prediction, inference and data mining*. New York: Springer.
- Huang, M.-P., Cheng, B.-S., & Chou, L.-F. (2005). Fitting in organizational values: the mediating role of person–organization fit between CEO charismatic leadership and employee outcomes. *International Journal of Manpower*, 26(1). doi: 10.1108/01437720510587262.
- Kallas, E., Mötsmees, P., & Reino, A. (2010). Tuning organizational values on job satisfaction: the case of international manufacturing corporation. *Review of International Comparative Management*, 11(4).

- Kaplan, R. M., & Saccuzzo, D. P. (1997). *Psychological testing: principles, applications, and issues*. Pacific Grove, CA: Brooks/Cole.
- Lajunen, T., & Ozkan, T. (2011). Self-report instruments and methods. In B. Porter (Ed.), *Handbook of traffic psychology*. London: Elsevier.
- Lauver, K. J., & Kristof-Brown, A. L. (2001). Distinguishing between employees' perceptions of person–job and person–organization fit. *Journal of Vocational Behavior*, 59(3). doi: 10.1006/jvbe.2001.1807.
- Lawrence, A. (2006). Person-organization congruence of high performance values in Australian universities. *International Journal of Knowledge, Culture & Change Management*, 6(4).
- Leung, A., & Chaturvedi, S. (2011). Linking the fits, fitting the links: connecting different types of PO fit to attitudinal outcomes. *Journal of Vocational Behavior*, 79(2). doi: 10.1016/j.jvb.2011.02.007.
- Lienert, G. A., & Raatz, U. (1994). *Testaufbau und Testanalyse*. Weinheim: Psychologie Verlags Union.
- McDonald, P., & Gandz, J. (1991). Identification of values relevant to business research. *Human Resource Management*, 30(2). doi: 10.1002/hrm.3930300205.
- Mukaka, M. M. (2012). A guide to appropriate use of Correlation coefficient in medical research. *Malawi Medical Journal*, 24(3).
- Naus, F., van Iterson, A., & Roe, R. (2007). Value incongruence, job autonomy, and organization-based self-esteem: a self-based perspective on organizational cynicism. *European Journal of Work and Organizational Psychology*, 16(2). doi: 10.1080/13594320601143271.
- Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: issues and applications*. Thousand Oaks: Sage Publications.
- Nunnally, J. C. (1988). *Psychometric theory*. New Jersey: McGraw-Hill.
- Nunnally, J. C., & Bernstein, I. R. (1994). *Psychometric theory*. New York: McGraw-Hill.
- O'Reilly, C. A., Chatman, J. A., & Caldwell, D. F. (1991). People and organizational culture: a profile comparison approach to assessing person–organization fit. *Academy of Management Journal*, 34(3). doi: 10.2307/256404.
- Ostroff, Ch., Shin, Y., & Kinicki, A. (2005). Multiple perspectives of congruence: relationships between value congruence and employee attitudes. *Journal of Organizational Behavior*, 26(6). doi: 10.1002/job.333.
- Posner, B. Z. (2010). Another look at the impact of personal and organizational values congruence. *Journal of Business Ethics*, 97(4). doi: 10.1007/s10551-010-0530-1.
- Posner, B. Z. (1993). Values congruence and differences between the interplay of personal and organizational value-systems. *Journal of Business Ethics*, 12(5). doi: 10.1007/BF00882023.
- Ren, T. (2010). Value congruence as a source of intrinsic motivation. *Kyklos*, 63(1). doi: 10.1111/j.1467-6435.2010.00462.x.

- Sarabia, M. G., Vedina, R., & Dolan, S. (2010). Gender differences in congruence between personal and organizational values. In D. Vrontis, Y. Weber, H. R. Kaufmann & S. Tarba (Eds.). *3rd annual Euromed conference of the Euromed academy of business: business developments across countries and cultures*.
- Seong, J. Y., & Kristof–Brown, A. L. (2012). Testing multidimensional models of person–group fit. *Journal of Managerial Psychology*, 27(6). doi: 10.1108/02683941211252419.
- Siegall, M., & McDonald, T. (2004). Person–organization value congruence, burn-out and diversion of resources. *Personnel Review*, 33(3). doi: 10.1108/00483480410528832.
- Silverthorne, C. (2004). The impact of organizational culture and person–organization fit on organizational commitment and job satisfaction in Taiwan. *Leadership & Organization Development Journal*, 25(7). doi: 10.1108/01437730410561477.
- Suar, D., & Khuntia, R. (2010). Influence of personal values and value congruence on unethical practices and work behavior. *Journal of Business Ethics*, 97(3). doi: 10.1007/s10551-010-0517-y.
- Tabachnik, B. G., & Fidell, L. S. (2006). *Using multivariate statistics*. New York: HarperCollins.
- Velicer, W. F., & Fava, J. L. (1998). Effects of variable and subject sampling on factor pattern recovery. *Psychological Methods*, 3(2).
- Verplanken, B. (2004). Value congruence and job satisfaction among nurses: a human relations perspective. *International Journal of Nursing Studies*, 41(6). doi: 10.1016/j.ijnurstu.2003.12.011.
- Vogel, R., & Feldman, D. (2009). Integrating the levels of person–environment fit: the roles of vocational fit and group fit. *Journal of Vocational Behavior*, 75(1). doi: 10.1016/j.jvb.2009.03.007.
- Vveinhardt, J., & Gulbovaite, E. (2016). Expert evaluation of diagnostic instrument for personal and organizational value congruence. *Journal of Business Ethics*, 136(3). doi: 10.1007/s10551-014-2527-7.
- Westerman, J. W., & Cyr, L. A. (2004). An integrative analysis of person–Organization fit theories. *International Journal of Selection and Assessment*, 12(3). doi: 10.1111/j.0965-075X.2004.279_1.x.

Annex

Table 1. Methodological and psychometric characteristics of the subscales of the questionnaire of congruence of personal and organizational values (N=374)

Scale	Subscales	Number of items	Explained dispersion %	Internal consistency of subscales		Factor loading (L)			Total item correlation (r _{itt})		
				Cronbach's alpha	Spearman-Brown	mean	min	max	mean	min	max
Perceived value congruence	-	5	60.33	0.83	0.65	0.77	0.60	0.88	0.58	0.29	0.84
	Economic values (PEV)	5	51.66	0.77	0.72	0.72	0.69	0.79	0.50	0.31	0.82
Personal values (PV)	Social values (FSV)	10	37.44	0.81	0.76	0.60	0.39	0.79	0.35	0.10	0.76
	Moral values (PMV)	5	52.74	0.77	0.58	0.72	0.53	0.81	0.51	0.19	0.78
Personal values (PV)	Spiritual values (PSPV)	5	56.78	0.81	0.81	0.75	0.63	0.83	0.55	0.31	0.83
	Professional values (PPV)	13	34.57	0.84	0.79	0.58	0.36	0.73	0.32	0.01	0.70
Personal values (PV)	Aesthetic values (PAEV)	3	59.09	0.65	-	0.77	0.70	0.82	0.57	0.30	0.81
	Physical values (PPHV)	4	62.33	0.80	-	0.79	0.74	0.83	0.61	0.33	0.85

Table 1. Continued

Scale	Subscales	Number of items	Explained dispersion %	Internal consistency of subscales		Factor loading (L)			Total item correlation (r/itt)		
				Cronbach's alpha	Spearman-Brown	mean	min	max	mean	min	max
Organizational values (OV)	Economic values (OEV)	6	46.25	0.77	0.77	0.68	0.56	0.76	0.44	0.22	0.77
	Social values (OSV)	11	55.75	0.92	0.89	0.74	0.52	0.85	0.54	0.19	0.84
	Moral values (OMV)	5	64.93	0.86	0.82	0.80	0.75	0.86	0.64	0.44	0.85
	Spiritual values (OSPV)	5	60.82	0.84	0.81	0.78	0.71	0.82	0.60	0.40	0.82
	Professional values (OPV)	13	44.14	0.89	0.84	0.66	0.47	0.79	0.43	0.14	0.77
	Aesthetic values (OAEV)	3	66.31	0.75	–	0.81	0.75	0.85	0.65	0.43	0.84
	Physical values (OPHV)	4	67.54	0.84	–	0.82	0.77	0.86	0.67	0.49	0.85
	Effect on person work/job (EA)	7	67.54	0.93	0.92	0.82	0.64	0.88	0.67	0.37	0.88
	Organizational climate (OC)	5	67.10	0.87	0.82	0.81	0.62	0.88	0.66	0.37	0.87
	Organizational performance (OP)	4	65.16	0.82	–	0.80	0.70	0.86	0.64	0.42	0.85

Note: L* – factor loading; r/itt** – total item correlation (resolution); Spearman–Brown is not calculated –.

Table 2. Results of secondary factoring (N = 374)

Subscales	PV			OV			EPO		
	One-way model F1	Alpha factoring F1	Subscales	One-way model F1	Alpha factoring F1	Subscales	One-way model F1	Alpha factoring F1	Subscales
PPV	0.82	0.80	OPV	0.92	0.91				
PSV	0.76	0.72	OSV	0.90	0.89	OP	0.91	0.88	
PAEV	0.76	0.74	OSP	0.87	0.83				
PSPV	0.72	0.64	OMV	0.85	0.82				
PMV	0.69	0.59	OPHV	0.82	0.79	OC	0.90	0.86	
PPHV	0.64	0.57	OAEV	0.81	0.78				
PEV	0.54	0.45	OEV	0.76	0.71	EA	0.86	0.76	
Explained dispersion	50.45%	42.95%	Explained dispersion	71.73%	67.22%	Explained dispersion	79.64%	69.79%	

Table 3. Intercorrelation of the subscales of the questionnaire of congruence of personal and organizational values (N=374)

<i>Subscales</i>	PEV	PSV	PMV	PSPV	PPV	PAEV	PPHV	OEV	OSV	OMV	OSPv	OPV	OAEV	OPHV
Economic values (PEV)	-													
Social values (PSV)	0.407 ***	-												
Moral values (PMV)	0.167 **	0.438 ***	-											
Spiritual values (PSPV)	0.318 ***	0.495 ***	0.499 ***	-										
Professional values (PPV)	0.329 ***	0.589 ***	0.490 ***	0.600 ***	-									
Aesthetic values (PAEV)	0.415 ***	0.510 ***	0.414 ***	0.456 ***	0.542 ***	-								
Physical values (PPHV)	0.369 ***	0.379 ***	0.356 ***	0.344 ***	0.468 ***	0.501 ***	-							
Economic values (OEV)	0.036 ***	0.208 ***	0.111 *	0.205 ***	0.126 *	0.134 **	-0.04	-						
Social values (OSV)	-0.083 ***	0.240 ***	0.269 ***	0.180 ***	0.199 ***	0.163 **	0.111 *	0.654 ***	-					
Moral values (OMV)	0.000 ***	0.288 ***	0.312 ***	0.234 ***	0.281 ***	0.188 ***	0.086 ***	0.582 ***	0.751 ***	-				
Spiritual values (OSPv)	-0.084 ***	0.252 ***	0.282 ***	0.288 ***	0.256 ***	0.157 **	0.173 **	0.508 **	0.782 ***	0.699 ***	-			
Professional values (OPV)	0.011 ***	0.298 ***	0.233 ***	0.218 ***	0.225 ***	0.163 **	0.101 **	0.595 ***	0.807 ***	0.736 ***	0.826 ***	-		
Aesthetic values (OAEV)	0.134 **	0.278 ***	0.266 ***	0.264 ***	0.262 ***	0.335 ***	0.160 **	0.557 ***	0.617 ***	0.625 ***	0.595 **	0.699 ***	-	
Physical values (OPHV)	0.015 ***	0.221 ***	0.228 ***	0.226 ***	0.235 ***	0.237 ***	0.185 ***	0.566 **	0.656 ***	0.583 ***	0.659 ***	0.714 ***	0.699 ***	-