

THE ROLE OF INDIVIDUAL VALUES IN PERSONAL DEVELOPMENT

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Abstract

This paper starts from the premise that there is a strong relationship between individual values and human development. In other words, the values we embrace act as facilitating factors or, on the contrary, as barrier for our personal development. Data from World Values Survey database and from Sustainable Society Foundation are used, the purpose being to determine the extent to which the existing values influence people personal development. The findings confirm the existence of a relationship between several values namely, tolerance and respect for other people, hard work, thrift saving money and things and religious faith and personal development. The analysis also deals with aspects related to Romania's position compared to other EU countries in terms of personal development and individual values.

Key words: individual values, personal development, correlation, multiple regression, principal components analysis.

JEL classification: A13, C10, C12, C81, C87, O15.

1. INTRODUCTION

It is often maintained that individual values and beliefs lie at the bottom of personal development which a strong component of sustainable development. We study this relationship both from a theoretical perspective, starting from the existing literature on this subject and empirically, using statistical data describing these phenomena.

In order to study the relationship between personal development and individual instrumental values we use several indicators. Personal Development is a component of Sustainable Society Index (SSI) 2008 released by Sustainable Society Foundation.

Taking the existing literature as a point of departure, we believe that the main individual values underpinning personal development are trust, democracy, tolerance, responsibility, independence, imagination respectively those values positively influencing economic behavior at social level. Using World Values Survey 2005-2008 we quantify the individual values identified above. In order to capture each value, one question from the survey is identified that is most closely correlated with each trait. Trust is measured by the question “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?”, Democracy by “Importance of democracy” and all other variables are selected from the list of qualities that children can be encouraged to learn at home (Independence, Hard work, Feeling of responsibility, Imagination, Tolerance and respect for other people, Thrift saving money and things, Determination/perseverance, Religious faith, Unselfishness). Due to the fact that individual values are relatively stable in time, there is no impediment in using data previously 2008 although the Personal Development value is registered for 2008.

We estimate and test the bivariate correlation coefficients [Jaba, 2002, 390-392] and we identify significant correlations between Personal Development and several individual values, the most important being Hard work, Tolerance and respect for other people, Thrift saving money and things, Religious faith, Democracy and Independence. Based on these results we estimate the multiple linear regression model [Maddala, G.S., 2001, 197-300; Nenciu, Gagea, 2009, 227-260] which describes the relationship between personal development and individual values.

The last part of the paper analyzes the relationship between individual values and personal development in Romania compared to the other countries in the sample. The statistical method used is principal components analysis (PCA). This method is justified by data set dimension, all variables being continuous quantitative ones. Using PCA we reduce the dimensionality of data by creating principal components from the original variables [Pintilescu, 2007, 30-77]. These principal components are then used i) to identify and describe relations between variables; ii) to identify possible relationships between statistical units. When it comes to this latter aspect, the analysis will focus especially on Romania's case.

The statistical data are available only for a sample of 13 EU member states: Bulgaria, Cyprus, Finland, France, Germany, Great Britain, Italy, Netherlands, Sweden, Poland, Romania, Slovenia, and Spain. Data sources are the sites of Sustainable Society Foundation [http://www.sustainablesocietyindex.com/Datasheet_SSI_2008.xls] and World Values Survey [<http://www.worldvaluessurvey.org/>]. Statistical data processing was conducted using SPSS software.

2. THEORETICAL BACKGROUND

Values describe the beliefs of individuals. What we are, as individuals, is a consequence of the values we praise. Once we internalize certain values, they become, consciously or subconsciously, standards for guiding our action. The way we behave in society, our attitude towards different aspects from everyday life emerges from our personal values. What we are, as individuals, is a consequence of the values we praise. Also, “values provide standards against which the behaviors of individuals and society can be judged” [Kates et al., 2005, 16].

Values are relatively stable in time. Not completely stable because social and individual changes would not be possible; and not completely unstable because the continuity of personality and society would be impossible.

This resistance to change makes history and our past important. North explains this as follows: “The cultural constraints not only connect the past with the present and the future, but also provide us with a key to explaining the path of historical change” [North, 1990, 6]. Cultural norms, personal values and attitudes, and inherited beliefs affect our present economic and social behaviour thus affecting the economic performance of a country and development at personal level.

The question is which values facilitate our development and which ones impede it. The most explicit set of values can be found in the UN Millennium Declaration which clearly states that “certain fundamental values are essential to international relations in the twenty-first century: freedom, equality, solidarity, tolerance, respect for nature, shared responsibility” [UN, 2000].

If “human development is the end” [UN, 1996, 11] we believe that the true values of mankind are the ones that make human efforts and human cooperation possible, the ones which allow us to develop our good side.

3. STATISTICAL ANALYSIS OF THE RELATIONSHIP BETWEEN PERSONAL DEVELOPMENT AND INDIVIDUAL VALUES

The relationship between two or more variables is most frequently analyzed using regression and correlation analysis. This method is applied in the paper in order to identify those individual values which have a strong influence on Personal Development. The identification of the significant correlations is made using Pearson correlation coefficient. We then estimate the multiple regression model equation describing the relationship between the dependent variable Personal Development and the independent factors previously selected.

An overview of the direction and intensity of the links between the variables included in the analysis but also of the relationships between the statistical units in the sample is obtained using PCA method. The analysis focuses, in particular, on Romania’s position compared to other countries included in the sample, in terms of Personal Development and individual values.

3.1 THE RELATIONSHIPS BETWEEN PERSONAL DEVELOPMENT AND INDIVIDUAL VALUES

For the sample of 13 countries, we study the bivariate correlation between *Personal Development* and the identified individual values, using Pearson correlation coefficient.

The statistical significance of the Pearson correlation coefficient is tested using Student t - test.

The statistical hypotheses are: the null hypothesis, the absence of correlation between the two analyzed variables ($H_0 : \rho = 0$), and the alternative hypothesis, the presence of significant correlation ($H_1 : \rho \neq 0$). If Sig probability associated to the calculated value of t statistic is higher than the conventional probability α , $Sig > \alpha$, the null hypothesis is validated. On the contrary, if $Sig < \alpha$, we reject the null hypothesis, with assumed α risk.

Table no.1 presents, for each analyzed correlation the estimated value of Pearson correlation coefficient (r) and Sig probability associated to the computed value of Student statistic.

Table no. 1- The correlation coefficient between Personal Development and individual values

Variable	r	Sig
Most people can be trusted	0.471	0.105
Democracy	-0.486	0.092
Independence	0.479	0.097
Hard work	-0.616	0.025
Feeling of responsibility	0.383	0.197
Imagination	0.458	0.115
Tolerance and respect for other people	0.752	0.003
Thrift saving money and things	-0.602	0.030
Determination perseverance	0.276	0.361
Religious faith	-0.799	0.001
Unselfishness	0.142	0.643
Obedience	0.201	0.511

For a risk of 5%, we accept the existence of a significant relationship between Personal Development and the following individual values: *Hard work*, *Thrift saving money and things*, *Religious faith* and *Tolerance and respect for other people*. The first three individual values are negatively correlated with *Personal Development*, while *Tolerance and respect for other people* is positively correlated.

Considering the small dimensionality of the sample, we also accept for analysis the significant correlations for a risk of 10%. The factors that strongly influence *Personal Development*, for a risk of 10%, are: *Democracy* (negative correlation) and *Independence* (positive correlation).

We estimate the multiple linear regression equation between the dependent variable Personal Development and a number of 6 independent variables, representing the individual values identified above as being significantly correlated with the analyzed dependent variable.

The multiple linear regression model takes the form

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_i X_i + \dots + \beta_k X_k + \varepsilon,$$

where:

Y is the dependent variable, i.e. *Personal Development*

$X_i, i = 1, k$, independent variables, i.e. the individual values kept in the analysis;

ε , residual variable;

β_i , regression parameters.

The estimation of parameters is made using the Method of Least Squares, which involves minimizing the sum of the squares of deviations of the dependent variable estimated values, \tilde{y}_i , from the empirical values, $y_i, i = \overline{1, n}$.

Using the Backward method we select the independent variables. This method consists in initially estimating the multiple regression model including all the independent variables considered, continuing with eliminating, one at a time, the weakest predictor, until a significance level set for F – Fisher is no longer reached [Jaba, Grama, 2004, 258-259]. This way, there can be estimated five multiple regression models, eliminating, one at a time, the

independents: 1) *Democracy*; 2) *Independence*; 3) *Hard work*; 4) *Thrift saving money and things*.

Each of the estimated regression models explains over 82% of the total variance of the dependent variable, the value of the coefficient of determination being higher than 0.822, $R^2 > 0.822$, where $R^2 = \frac{SSE}{SST}$, with *SSE* the variance explained by the regression model and *SST* the total variance of the dependent variable (Table no. 2).

Table no. 2 - The multiple regression models

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.940	.884	.768	.22018	
2	.940	.883	.799	.20489	
3	.937	.877	.816	.19631	
4	.932	.868	.824	.19155	
5	.907	.822	.787	.21117	2.105

All coefficients of determination are statistically significant, at 0.05 level, thus the null hypothesis can be rejected, meaning $Sig < 0.05$ (Table no. 3).

Table no. 3 - ANOVA Table for multiple linear regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.323	6	.387	12.546	.004 ^a
	Residual	.185	6	.031		
	Total	2.508	12			
2	Regression	2.287	5	.457	14.529	.001 ^b
	Residual	.220	7	.031		
	Total	2.508	12			
3	Regression	2.217	4	.554	15.251	.001 ^c
	Residual	.291	8	.036		
	Total	2.508	12			
4	Regression	2.177	3	.726	19.783	.000 ^d
	Residual	.330	9	.037		
	Total	2.508	12			
5	Regression	2.062	2	1.031	23.116	.000 ^e
	Residual	.446	10	.045		
	Total	2.508	12			

- a. Predictors: (Constant), Religious faith, Democracy, Thrift saving money and things, Tolerance and respect for other people, Most people can be trusted, Hard work
- b. Predictors: (Constant), Religious faith, Democracy, Thrift saving money and things, Tolerance and respect for other people, Most people can be trusted
- c. Predictors: (Constant), Religious faith, Thrift saving money and things, Tolerance and respect for other people, Most people can be trusted
- d. Predictors: (Constant), Religious faith, Thrift saving money and things, Tolerance and respect for other people
- e. Predictors: (Constant), Religious faith, Tolerance and respect for other people

The regression model which has all regression coefficients statistically significant, at the 0.05 level, is model 5 (Table no. 4). The independent variables we have kept in the model are *Tolerance and respect for other people* and *Religious faith*. The multiple regression equation which significantly explains the variance of the dependent variable *Personal Development* takes the form:

$$\tilde{y}_i = b_0 + b_1x_{1i} + b_2x_{2i} = 8.219 + 1.915x_{1i} - 1.446x_{2i},$$

where:

\tilde{y}_i is the estimated value of the dependent variable Y , *Personal Development*;

x_{1i} - the i value of the independent variable X_1 , *Tolerance and respect for other people*;

x_{2i} - the i value of the independent variable X_2 , *Religious faith*.

Table no. 4 – Multiple linear regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.219	.512		16.061	.000		
	Tolerance and respect for other people	1.915	.597	.484	3.211	.009	.782	1.280
	Religious faith	-1.446	.381	-.573	-3.798	.003	.782	1.280

The positive value of the regression coefficient β_1 , $\beta_1 = 1.915$ shows the positive influence of the variable *Tolerance and respect for other people* on *Personal Development*. The regression coefficient β_2 displays a negative value, $\beta_2 = -1.446$, pointing out a negative relationship between *Religious faith* and *Personal Development*.

We test the following assumptions on which multiple linear regression is based on: i) the average error of regression is zero; ii) the normality assumption; iii) the homoscedasticity hypothesis; iv) absence of autocorrelation; v) multicollinearity.

We test the assumption according to which the average error is zero, $H_0 : M(\varepsilon) = 0$, using Student t-test, at 0.05 significance level. The results obtained are presented in table no.5.

Table no. 5 - Student t-test for checking the significance of average

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Unstandardized Residual	.000	12	.970	.000	-.11649	.11649

The Sig probability associated to the computed value of t statistic is higher than the conventional probability α , ($Sig = 0.97$) $>$ ($\alpha = 0.05$). The null hypothesis is, thus, accepted, the average error does not significantly differ from zero.

The assumption of normality is tested with Kolmogorov-Smirnov test. The Sig probability associated to the computed value of t statistic (Table no. 6) is higher than the

conventional significance level α , ($Sig = 0.493$) $>$ ($\alpha = 0.05$). We accept the null hypothesis that is, the regression error display a normal distribution.

Table no. 6 - Kolmogorov-Smirnov test to verify the normality of regression errors

		Unstandardized Residual
N		13
Normal Parameters	Mean	.0000000
	Std. Deviation	.19277543
Most Extreme Differences	Absolute	.231
	Positive	.231
	Negative	-.127
Kolmogorov-Smirnov Z		.832
Asymp. Sig. (2-tailed)		.493

The homoscedasticity assumption consists in estimating and testing the significance of Spearman nonparametric correlation coefficient, computed for absolute errors and each of the independent variables. If the value of Spearman coefficient is not statistically significant, then we accept the fact that there is no significant relationship between the errors and the independent variables and the errors are homoscedastic.

For both correlation coefficients we obtained Sig values associated to the computed value of Student statistic higher than α , ($Sig = 0.256$) $>$ ($\alpha = 0.05$) and, respectively, ($Sig = 0.107$) $>$ ($\alpha = 0.05$) (Table no. 7). Consequently, the null hypothesis is accepted, i.e. the regression errors are not correlated with the independent variables and they are homoscedastic.

Table no. 7 - Spearman correlation coefficient

		abs_error	Tolerance and respect for other people	Religious faith
abs_error	Pearson Correlation	1	-.378	.340
	Sig. (2-tailed)		.203	.256
	N	13	13	13
Tolerance and respect for other people	Pearson Correlation	-.378	1	-.467
	Sig. (2-tailed)	.203		.107
	N	13	13	13
Religious faith	Pearson Correlation	.340	-.467	1
	Sig. (2-tailed)	.256	.107	
	N	13	13	13

The absence of autocorrelation is checked with Durbin-Watson test. For $\alpha = 0.05$, sample size $n = 13$ and $k = 3$ regression parameters, the critical values read from the Durbin-Watson table are $d_L = 0,715$ and $d_U = 1,816$. The computed value is $dw = 2.105$ (Table no. 2). This value is located in the average range of variation ($d_U; 4 - d_U$) = (1,816; 2,184), which corresponds to the region where the null

hypothesis can be accepted. For a risk of 5%, we can state that the variables are not autocorrelated.

The multicollinearity hypothesis is verified by analyzing VIF (Variance Inflation Factor) and TOL (Tolerance) indicators. A small value registered for VIF, $VIF < 10$, and a high value for TOL, $TOL \rightarrow 1$, indicate the absence of collinearity. The results obtained (Table no. 4), $VIF = 1.280$ and $TOL = 0.782$, lead us to the acceptance of the null hypothesis that is, there is no collinearity of the independent variables.

All assumptions are verified; then multiple regression model between the dependent variable *Personal Development* and the independent variables *Tolerance and respect for other people* and *Religious faith* is statistically significant.

For Romania, there have registered the following results: the value for *Personal Development* indicator is $y_{RO} = 8.20$, below the average, $\bar{y} = 9.369$; the value of *Tolerance and respect for other people* is $x_{1RO} = 0.60$, also below the average, $\bar{x}_1 = 0.774$; the value for *Religious faith* is $x_{2RO} = 0.640$, above the average, $\bar{x}_2 = 0.230$. All these values indicate negative aspects.

The estimated value for *Personal Development* in Romania is:

$$\tilde{y}_i = 8.219 + 1.915x_{1i} - 1.446x_{2i} = 8.219 + 1.915 \cdot 0.60 - 1.446 \cdot 0.64 = 8.438.$$

The deviation of the estimated value from the empirical value, computed for Romania is: $e_i = y_i - \tilde{y}_i = 8.20 - 8.438 = -0.238$

3.2 ROMANIA'S POSITION COMPARED TO THE OTHER COUNTRIES IN THE SAMPLE FROM THE PERSPECTIVE OF PERSONAL DEVELOPMENT AND INDIVIDUAL VALUES

In order to analyze Romania's position, compared to the other countries in the sample, from the perspective of personal development and individual values, we use principal components analysis (PCA).

The preliminary analysis aims to verify the adequacy of data for a factorial analysis. We use Barlett's test of sphericity to test the null hypothesis that the variables in the correlation matrix of the population are uncorrelated, and the indicator MSA (Measure of Sampling Adequacy) of Kaiser-Meyer-Olkin to evaluate in which degree each variable may be predicted by all the other variables.

The results obtained with SPSS (Table no. 8), by including all initial variables in the analysis, show a significant value associated to Barlett's test of sphericity, with χ^2 statistic, $Sig = 0.000$ is smaller than 0.05 (conventional value), which means the null hypothesis of variables' uncorrelation is rejected, and the considered variables are adequate for a PCA. The value of the indicator MSA of KMO (0.392), smaller than 0.5, show that the solution obtained with PCA cannot be accepted.

The extraction communalities, that are estimates of the variance in each variable accounted for by the components in the factor solution, may also suggest unsuitable variables. It can be noticed that, after extracting the factors, the variances of several statistic variables such as, *Determination/perseverance* and *Obedience* register small values, which show the lack of correlation between those variables with the factorial axes and, consequently, we will eliminate them from the analysis.

Table no. 8 - Values of KMO test and χ^2 statistic

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.392
Bartlett's Test of Sphericity	Approx. Chi-Square	106.288
	df	55
	Sig.	.000

The analysis proceeds by keeping only the significant variables.. The results show a significant value both for Barlett's test of sphericity, with χ^2 statistic ($Sig = 0.000$), and for the indicator MSA of KMO (0.732), that is the solution obtained with PCA can be accepted.

After extracting the factors all the estimated variances of variables kept in the analysis have values of variances estimations greater than 0.5 and should be kept in the analysis as they all fit well with the factor solution.

Factorial solution indicates variables' grouping in two principal components which have an explicative power of approximately 70% of the total variance (Table 2). We will analyze below the disparities of personal development and individual values in EU countries according to the positions of variables and of cases in the factorial plane determined by this first two components.

The results obtained for the correlation coefficients between the variables and the factorial axes (Table no. 9) and the graphical representation of variables in the two first factorial axes system (Figure 1) point out that: several individual values namely, *Most people can be trusted*, *Tolerance and respect for other people*, *Feeling of responsibility*, are situated in the positive quadrant of the first axis, positively correlated with *Personal Development*; other individual values such as, *Democracy*, *Hard work*, *Religious faith*, lie in the negative quadrant of the first factorial axis, being negatively correlated with the variables in the positive quadrant, thus, with *Personal Development*.

Table no.9 - Variables coordinates in the two first factorial axes

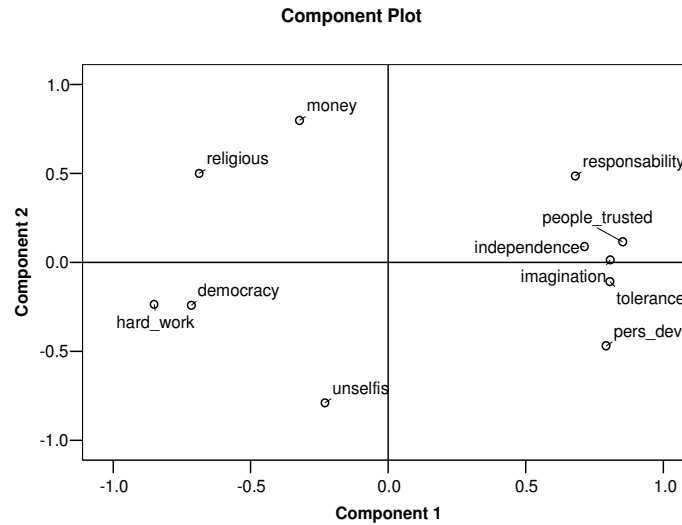
	Component	
	1	2
Personal Development	.792	-.469
Most people can be trusted	.853	.116
Democracy	-.716	-.241
Independence	.714	.089
Hard work	-.851	-.236
Feeling of responsibility	.680	.486
Imagination	.808	.014
Tolerance and respect for other people	.806	-.108
Thrift saving money and things	-.323	.797
Religious faith	-.688	.499
Unselfishness	-.230	-.789

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

The second factorial axis is explained by *Thrift saving money and things*, located in the positive quadrant, and *Unselfishness*, situated in the negative quadrant.

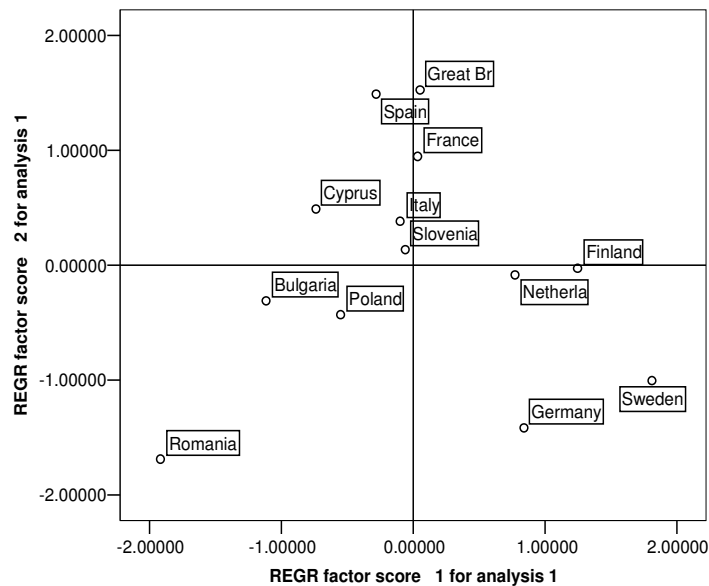
Variables' position on the first two factorial axes confirms the results obtained with the correlation regression and regression analysis.



Source: [Output obtained in SPSS with PCA]

Figure no. 1 Variables' position on the first two factorial axes

Overlapping of graphical representation of countries on the factorial map (Figure 2) and variables map obtained with PCA (Figure 1) permits us to identify several characteristics for Romania in the context of the analyzed sample.



Source: [Output obtained in SPSS with PCA]

Figure no. 2 Countries' position on the first two factorial axes

Thus, Romania registers high values for *Religious faith*, *Hard work* and *Democracy* and small values for *Personal Development* and *Tolerance and respect for other people*. On the contrary, Finland, Sweden, and Germany, for example are opposing to Romania's situation. Also, Romania registers low scores for *Trust*, *Independence* and *Imagination*.

These negative aspects can be explained by several factors among which the most important we consider to be *the oppressive nature of the former communist regime* and *the cultural heritage of Romanians*. When referring to the first factor, we must have in view the fact that in Romania communism suppressed any private initiative and individual freedom. From a cultural point of view, communism was a "trauma" by itself [Voicu, Voicu, 2007, 307] since, in its attempt to create a new individual, the system tried to educate and to proliferate values in contradiction with human nature. The Romanian people have the tendency to consolidate these values since the population is disappointed by the political, economic and social changes after the fall of the Communist regime. As a consequence, the Romanians' reluctance maintained socialism-influenced beliefs or managed to push society towards traditionalism and constantly cultivated the tendency towards not accepting the modernising of values [Baciu, Asandului, Iacobuță, 2009, 247].

On the other hand, Romanians are considered to have a series of negative traits inherited from the past. Ethno-psychological studies show that Romanians tend to be obedient in front of authority, expect that somebody offers them assistance, and believe that the State should provide a better life for everybody, easily use connections and bribe to solve their problems [Baciu et al., 2007].

The results we obtained from our analysis confirm the fact that the Romanian society is one of the most religious in EU due to the fact that the Orthodox Church has a cvasi-

monopoly position and also because we have a low level of human capital. It has been stated the level of religious faith decreases with the level of education [Voicu, Voicu, 2007, 174]. Also, in Romania work is still seen as an obligation towards society coming from a strong sense of obedience. The Romanians inherited this from communism where work was seen as the main value, a right and a duty at the same time [Voicu, Voicu, 2007, 282]. Nowadays, work is considered more important in those societies which are less developed from the economic point of view and traditionalist from a cultural perspective [Voicu, Voicu, 2007, 283]. Intolerance is very high in Romania, compared to Finland or Sweden, for example, aspect which once again suggests traditionalism and reluctance to change.

As proven by the regression and correlation analysis presented above these individual values negatively influence personal development which, furthermore, hampers the ability of the country to achieve sustainability.

4. CONCLUSIONS

This research started from the premise that there is strong relationship between individual values and beliefs (trust, democracy, tolerance, responsibility, independence, imagination, determination, hard work, thrift saving money and things, religious faith) and personal development, as a major component of sustainable development. In other words, the values and beliefs we embrace affect our behavior and, furthermore, the way we act impacts on our personal development and socio-economic performance of the society we live in.

The findings of the research have led to the following conclusions:

- There is a strong positive relationship between *Tolerance and respect for other people*, as an individual value and personal development.
- Several individual values namely, *Hard work, Thrift saving money and things, Religious faith* are rather traditional values with a negative impact on people personal development.
- Romania is a traditionalist society, characterized by high levels of *Religious faith, Hard work* and *Democracy* and low levels of *Tolerance and respect for other people, Trust, Independence* and *Imagination*. Also, Romania scores very low in terms of personal development compared to the other analyzed countries.

This last conclusion is very important from our point of view since in Romania, due to several conjunctures, there is a situation of reluctance towards adopting and praising “good” individual values, i.e. the ones which positively influence economic behavior at social level and allow us to develop ourselves as human beings. This attitude can be dismantled only by education and learning, as sources of good rules of conduct.

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