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THE ECONOMIC FACTORS AND RELIGIOUS BEHAVIOR. A SURVEY IN ROMANIA

Abstract. *From a religious point of view, after the fall of communism, Romania has known a distinct transition within the Central and East-European countries, at present a high degree of religiosity and a great confidence in church being recorded, compared with other institutions of state. This paper presents, according to a national survey, the results on causality relations among the different economic factors and the religious behavior in private life. We use, to this end, correlation models statistically tested and validated. The conclusions could be of help for a better understanding of the evolution trend of certain sides of social life in Romania.*

The originality of our demarche is firstly induced by the fact that survey statistical researches focused on analyzing the religious phenomenon have been almost inexistent in Romania. It is the first complex statistical research, after more than half a century. Excepting WVS (World Values Survey) which included more than the two usual questions of statistical researches (religious affiliation and frequency of religious service attendance) excepting also some questions added by INSOMAR to a 2006 questionnaire, and some questions related to spending free time by attending religious services, in the Inquiry on Free Time accomplished by INS (National Institute of Statistics) this kind of researches has been quasi – inexistent.

Key words: *statistical modeling, representative survey, non-parametric correlation, religious behavior, economic impact, regression model, cluster.*

JEL Classification: C8, C51, P29, Z12, Z13

1. Transition from Imposed Atheism to Assumed Religiosity

Romania, among former communist countries, is to day, from a religious point of view, an atypical distinct zone. The religious majority holds 86.7% of the total population and added to other Christian religions, the weight increases to 99.3%. Christian beginnings are lost in the mists of history, Christianization being attributed to St. Andrew, the Apostle, and the Orthodox tradition originating in the Byzantine

Empire and Eastern Churches. In 1698, in Transylvania, a union with catholic Rome took place. The Orthodox church is deeply involved in state activity, according to Byzantine principles, where king was also the head of the church (Arhweiler 2002). Then, there was a submission to state authority as a basic rule. This behavior was also a way of church survival.

The church separation from state leadership took place under Al. I. Cuza reign, 4 years after principalities unification, when secularization of monastic estates was done (Law from December 17/29 – Article 1. *All monastic estates in Romania are and remain estates of the state*). This was the measure that placed the Orthodox church out of the economic activity and the state loses its religious character. The church national character remained in the people consciousness, especially by the role played by church in establishing the Great Romania and by keeping the idea of Romanianism. In Transylvania, this part was mainly played by the United Church (with Rome). The presence of Miron Cristea, the Patriarch, in the regency instituted during the dynastic crisis (1926 – 1930) was a last major gesture of involving a great hierarch in the country leadership. The communist period, under the soviet domination has tried to compel the Marx thesis on religion (opium for people) by prohibiting certain religions, by limiting religious education and by the abolition of the Roman Catholic church and by the confiscation of its properties (partially restored after long processes in court after 1990 year) and by the attempt of imposing a new religion – the Marxism – Leninism one, as part of building a “new man” an “atheist” educated in the spirit of the scientific materialism. A government structure < Department of Religious Affairs > kept under observation both the public activity of church and the religious side of public life.

The communist period has left various traces in the former communist countries in Central and Eastern Europe (Gillet 2001, Voicu 2007, Confino 2005, Müller 2004, Tomka 2004) . In countries with predominantly Catholic religion, the impact of communism was less (Need A., Evans G. 2001) and in a similar way, the catholic church in our country, morally supported by the Vatican. The Orthodox church has survived, being eliminated from the economic and social life (Vasile 2005). The relatively tacit support given to executive (and give to Caesar what is Caesar's) has allowed to keep places of worship and certain forms of religious education. After the communism period , in certain countries, a strong retrogression of religiosity was noticed: Czech Republic, Former Democratic Republic of Germany, Estonia and an increase of society secularization degree (Andreescu, Andreescu 2009, Bruce 1999).

Romania is placed in the group of religious countries, with Poland, Malta and Ireland¹.

¹) World Values Survey (<http://www.worldvaluessurvey.org/>) is developing, at present, a new round of researches (2010 – 2012) on the world values. This last investigation will complete the data series for three decades and will provide the possibility to make analysis of the main world trends of values.

While Western societies are moving towards secularization (Halman 2001, Bruce 2010, Bruce 2009, Gauthier, Martikainen, Woodhead 2011, Inglehart 2004, Nagy 2010, Yesilada, Noordijk, Webster 2009), in Romania, the Orthodox church and the army are the institutions which enjoy of the largest population confidence (Voicu 201, Enache 2005, Sandu 1999, Gheorghiu 2003, Tufis 2007).

The religiousness evolution in Europe was the subject of an issue of “Sfera Politicii” Review (No. 146/2010) entitled: “ Religion, church, society in European Union, where the main trends of European Union are analyzed and the transition from sacramental and religious to atheism and society secularization is the object of many studies (Brown 2009, Badescu 2004, Meyendorff 1996, Austin 2008).

The religious revival after 1989 year has been noticed by eliminating restrictions and introducing religious liberty, fact leading to an increase of religiousness, both in public space and in private one. The religion study was introduced in primary cycle, the presence of religious subjects was expanded in mass-media, the religious subjects and gestures have been frequently met in campaigns of all political leaders. The frequent explanation is that of economic recession, of restructuring the economy, the unemployment and instability, the rise of prices and the economic insecurity. It is a simplistic manner of explaining a more complex process. An interesting aspect is related to the tight connection between religion and work motivation (Voicu 2007).

2. Religious Behavior and Economic Determinants

The estimation of the connections between economics and religion is not a new subject. To this end, we could mention Adam Smith, who, in his famous work “The Wealth of Nations” (the most recent re-editing in 2001, Publica Publishing) considers this connection as coming from rationally chosen activities and approaches even the problem of state-religion relation. Contemporary with Smith, John Wesley approached the problem of the connection between religion and the economic development, in his capacity of theologian and founder of Methodist movement, outlining the work as the main source of wealth increase. He was the first who noticed that an economic growth and an welfare are in the detriment of religious feeling.

Karl Marx thesis on religion (the opium for people) was lately quoted by communist leaders as an absolute truth² and argument for banning religion. We could mention the most active atheist forum initiated by Austin (2008): www.atheist-community.org

²) Quote is taken out of context and abusively used...”Marx’s statement “Religion is the opium for people” is something quite different from Lenin’s words “ Religion is a kind of spiritual brandy” or from the Bakunin’s absurd conclusions: “If God exists, then man is a slave; But man can and must be free, so God does not exist. It's like saying: “ Atheists claim that God does not exist, but faith in Him relaxes me, therefore, the atheists do not exist. Thus, Marx wrote in: “Observations of a young man about choosing his thing in life: “God gave

a place of antireligious debates and the tribune for separating religion from state. We also mention that in Romania, the secularization is a fact, the Romanian constitution is explicit: Article 29 (1): Freedom of thought, opinion and **religious beliefs** can not be restricted in any way.....(5): Religious cults are autonomous from state and enjoy its support.

These stipulations are more stringent than the stipulations of the Constitution of 1923 year that promoted two cults: Article 22, paragraph 4: The Romanian Orthodox church, being the religion of the large majority of Romanians is the dominant church of the Romanian state; and the Greek - Catholic religion takes precedence over the other religions.

The most known and cited work on the connection between religion and economics is the work of Max Weber (a recent analysis of Motta 2011) on Protestantism and economic development of Europe. This subject related to the correlation between religion and economic development is also approached by McCleary (2008), Koshul (2005) Balan (2010) or Comsa and Munteanu (2010).

We mention that we have used, in this paper, the results of survey, in order to establish the impact of different economic factors on religiosity at private level. The research is based on information gathered according to a statistical investigation in households, on a representative sample at national level.

3. Survey Research

The following stages have been organized and delimited:

The survey has been defined; The target population was established and the selection process was developed;

The questionnaire has been made;

The field research was organized and data collection was carried out;

The information processing of survey questionnaire was established.

3.1. Survey Design

The general survey basis is the EMZOT master-sample, according to the data of RPL - 2002 population and housing census, up-dated in 2006 year.

people a universal goal - to uplift humanity and themselves". And much more later, he wrote in "Contribution to the Critique of Hegel's Philosophy of Law: "Religion is the groaning of the oppressed creature, the heart of a heartless world, just as it is the spirit of a society without spirit". The quote (Religion is the opium for people) could be interpreted and otherwise: opium relieves pain. There is nothing intrinsically wrong with it. The misuse generates bad effects. Only the discovery of anesthetics has led to the modernization of surgery. Religion is frequently approached by Marx. For instance, in his famous book "The Capital", he says: for such a society (a society based on the production of consumer goods; any society produces them), the Christianity with its cult for the abstract man, particularly in its bourgeois aspects, Protestantism, deism, etc. is the best form of religion.

The EMZOT master-sample is a systematic sample of 780 geographic areas – research centers. This master sample covers 427 research centers (Primary Units – UP) in urban environment and 353 in rural environment. EMZOT covers about 10-13% of the number of permanent and employed housing of about 2665 localities.

The extension of results obtained from the made survey is achieved on the basis of the coefficients assigned to the persons belonging to the households of sample. In order to determine these coefficients, the following steps are required:

The first step – calculation of basic weights

The probabilities of including UP into EMZOT master – sample have been calculated according to stratified sampling method. The stratification criteria were the county and residence environment, their crossing having as result a number of 88 strata. In Bucuresti municipality, the selection was separately made for each of the 6 administrative sectors. In each of the 88 strata, the probabilities of including into the first step have been calculated, proportionally to the value of UP, value expressed in number of permanent households, according to the following calculation formulae:

$$P_{1hj} = m_h \times \frac{N_{hj}}{\sum_{j=1}^{N_h} N_{hj}} \quad (1)$$

where:

h – stratum index, $h = 1, \dots, 88$;

j – UP index, $j = 1, \dots, 4022$;

P_{1hj} – probability of including into the first step of UP, j belonging to h stratum;

m_h – size of UP sample in h stratum;

N_{hj} – number of permanent households in h , UP j stratum;

$\sum_{j=1}^{N_h} N_{hj}$ – number of permanent households in h stratum.

The second step. Inside each UP of the total of 780 UP included into the first step of EMZOT master – sample, there are extracted 420 UP, namely 229 urban ones and 191 rural ones, 12 households, according to a systematic selection algorithm with random start. Consequently, all households making up a certain UP have the same probability to be included into sampling, calculated as follows:

$$P_{2hjk} = 12 / N_j, \quad (2)$$

where:

$$P_{2hj} = \frac{n_h}{m_h} \quad (3)$$

h – stratum index, $h = 1, \dots, 88$;

j – UP index, $j = 1, \dots, 780$;

k – household index of UPj;

m_h – total number of MZOOT research centers in h stratum;

n_h – number of MZOOT research centers, h stratum;

P_{2hjk} – probability of including into the second step a k permanent household belonging to UPj in h stratum;

N_j – total number of households of UPj.

The general probability of including a k household into PGS_k - sampling of survey, according to the two sampling steps, is calculated as follows:

$$PGS_k = P_{hj} * P_{2hjk} \quad (4)$$

The basic weight of a k household, selected in the second sampling step of $UP - BW_k$ is therefore the inverse of the general probability of including a k household:

$$BW_k = 1 / PGS_k \quad (5)$$

The number of research centers in the second step on each stratum is:

$$n_k = m_k \cdot 0.538 \quad (6)$$

The sampling weights have as purpose to improve the results by integrating into the formula of estimators of the auxiliary/complementary information, in this case, the religious affiliation. The weighting methods consist in the units weight of a sampling, so that, certain values to coincide with the external “reliable” values, as, for instance, the values obtained as a result of a census. The weighting was required as there are “territorial concentration areas” of different religions practitioners (18 officially recognized areas), fact which could distort the sample representativeness.

If the auxiliary information is used to get an improvement since **the moment of selecting the sample**, we shall use the techniques as:

a) Stratification; b) proportional selection; c) balanced selections. The used variables of weighting must be correlated as much as possible to the study topics, the segmentation models being frequently used for their selection. Another condition is

that these variables to be “less numerous” and to be pertinently aggregated. By short, about the used post – stratification method.

The post – stratification. In case of using a simple random survey, an n – size sampling is extracted, and within the sampling, the θ p categories are determined, the so – called post – strata, depending on the values of one or more known variables for each unit of the sample. We assume that the global number for each p category of population N_p is known. If we denote by \bar{y}_p the mean of variable Y obtained for the p post – stratum, then:

$$\hat{\theta}_{POST} = \sum_{p=1}^P N_p \times \bar{y}_p \quad (7)$$

is an unbiased estimator for θ and is called the post – stratified estimator of θ .

In order to estimate the mean, the above formulae will be divided by the total population:

$$\tilde{Y}_{POST} = \sum_{p=1}^P \frac{N_p}{N} \times \bar{y}_p \quad (8)$$

The accuracy of post – stratified estimator for mean \tilde{Y}_{POST} in case of a random simple survey, can be calculated by using the relation:

$$V(\tilde{Y}_{POST}) \approx \frac{1-f}{n} \left(\sum_{h=1}^P \frac{N_p}{N} \times S_h^2 \right) + \frac{1-f}{n^2} \left(\sum_{h=1}^P \left(1 - \frac{N_p}{N} \right) \times S_p^2 \right) \quad (9)$$

The calculation is complicated due to the fact that n_h is a random variable placed at denominator and we do not know how to exactly express the mathematical expectation of the inverse of a random variable.

$$E\left(\frac{1}{n_p}\right) \approx \frac{1}{E(n_p)} \times \left(1 + \frac{V(n_p)}{E(n_p)^2} \right) \quad (10)$$

The relation for calculating the dispersion variance shows that it is more likely to construct homogeneous post – strata (due to the presence of dispersion S_p^2).

In practice, the auxiliary qualitative variable X which enables to define the post – strata, has to explain, as well as possible, the variable Y . Each post - stratum being made of units, for which, the qualitative variable used for post - stratification - X takes the same value (by convention), the condition as S_p^2 to take small values is translated by the “force” with which variable X can explain variable Y :

$$D_{REG} \approx (1 - \rho^2) \times D_{\bar{Y}} \quad (11)$$

If the survey is a simple random one, then $0 \leq D_{REG} \leq D_{\bar{Y}}$ and, therefore it is more likely to use \tilde{Y}_{REG} instead of \bar{Y} in case the sampling is large. The advantage of using \tilde{Y}_{REG} depends on factor $1 - \rho^2$ and

$$D_{REG} = \frac{1-f}{n} \times \frac{1}{n-1} \sum_{i \in S} \left(Y_i - \hat{a} - \hat{b} \times X_i \right)^2 \quad (12)$$

Using this relation, we can construct confidence intervals for \bar{Y} .

3. Survey organization

The sampling obtained as a result of the corrections applied to EMZOT basis, with the results of 2002 census on the total distribution of population according to religious affiliation, was of $n = 1062$ households. The questionnaire was assigned to household adults. Only one questionnaire was assigned to a household, having in view the possible redundancy of answers, the religious affiliation and behavior being most times the same within a household.

The survey questionnaire was made in such a way as to enable , after processing the information, to obtain some usable variables into a statistical modeling. The main working variables were:

A. Religious variables

Degree of trust in church (DTC), is a variable measured on 4 scale points, where 1 means very low trust and 4 means very high trust .We defined a variable named **charitable activities contribution of respondent (CCAR)** starting from two source variables:

Source 1- A variable measuring the Frequency of Respondent Contributions (FRC), FRC:R->{0,1,2,3,4,5} where 0 means that respondent did not contribute at all,

1 means a yearly contribution and 5 means that respondent contributed with a weekly sum or more frequently.

Source 2- A variable measuring the Amount in lei of Respondent Contribution each time (ARC)

ARC: $R \rightarrow (0,600)$. We had three extreme values of 2000 and 3000 lei. We excluded those cases from analysis. Since the range of frequency is between one year and weekly, we decided to combine these variables by multiplication (frequency and amount for each contribution) and to obtain a yearly contribution as a base.

Religious Cluster Membership (RCM) – is a binary variable showing the membership of a religious or non-religious cluster. The detailed methodology of cluster aggregation and its validation is described in the paragraph 4.1 and 4.2.

The survey questionnaire was made as to allow, after information processing, to get certain variables useful to a statistical modeling. The main working variables were:

B. Variables to characterize the phenomenon of working abroad

Three questions for evaluation have been used: the size of working abroad phenomenon; identification of the factors contributing to working abroad; determination of persons/institutions providing a support.

From this category of variables we had chosen one variable which reveals the existence of a person in the household working abroad.

It was named, WKA, and it was recorded as a binary variable codified by 0 for respondents who did not work abroad and have not a person in the household who worked or is working at present abroad, codified by 1 in rest.

C. Socio –economic and demographic variables

Household income (HSHI), is a variable defined by using 11 groups (0 codified to 10); code 0 means no income, code 10 means over 10.000 lei (over 2200 Euro) income per household per month. In the regression model, we'll use each class centers as value for the regression factor, in order to have a more explicit dimension of the income.

Type of household (HT) is a variable measured with 7 points on scale. The points are defined as follows :1 = individual house; 2 = the house is a part of a construction with other houses included; 3 = the house is located in a villa with few houses; 4 = in a block unit (mansion) with high quality rating (comfort I or II); 5 = in a block unit (mansion) with poor quality rating (comfort III or IV); 6 = in an abandoned house; 7 = in an improvised house.

We expect that a poor quality house of the respondent should determine a significant lower contributions to charitable events.

The age (AGE) is recorded in natural values as respondent's old years.

The gender of a respondent (SEX), codified as binary variable with code 1 for men and 0 for women.

D. Variables for analyzing the education level and occupational status.

Education (EDU) is a transformed variable starting from 10 base classes defined in the questionnaire. Class 1 means no school attendance/ no class finished, code 5 means high school finished (graduated a medium level of education equivalent to ISCED 3), and 10 means that the respondent has a PhD degree.

Occupational status (OCC) is a variable defined on a scale with 11 points, where 1 means full time and stable employment and 11 means not employed

Gender is a binary variable defined by using code 0 for women and 1 for men.

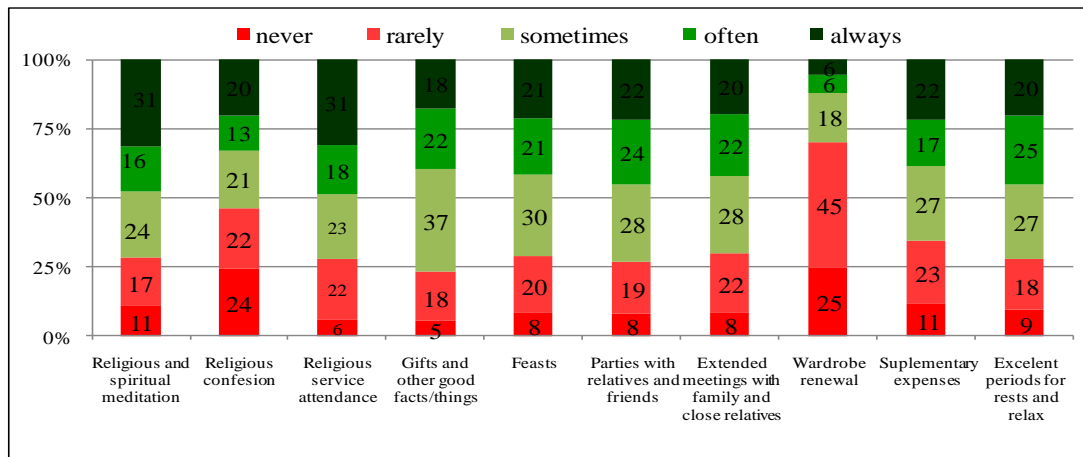
4. The main obtained results

It is very difficult to decide if a person is a religious one or not. One solution is to decide, by taking into account, the self declaration of the respondent. But the questions is: Does the self-declaration fit with the own religious behavior? In order to verify these hypotheses, we try to make some clusters of respondents regarding their behavior around feasts (step 1) and then compare the clusters with the self-declaration of respondents (step 2).

4.1 . Cluster definition and religious versus non-religious behaviors towards different socio-economic situations

Step 1. A set of activities and their frequency are described in the following graphic:

Figure 1. Respondents’ attitudes/behavior on the occasion of religious feasts



**The values, as percentages of the total sample, represent the answers of the question: “How often do you make the following things on the occasion of religious feasts ?*

Using the **Principal Component Analysis (PCA)** we determined two major components regarding religious behavior during feasts. From a mathematical point of view, these two components are obtained as linear combination of initial variables, but on the other hand, they have a strong practical signification. The first group of

variables defines a group of respondents who are devote to religious life and recognition, called “Religious Behaviors-**RB**” , and the other group of respondents who prefer a free life, a non-religious life during feasts, we called this group Non-Religious Behaviors-**NRB**. After obtaining the components, we applied the cluster method to group respondents according to these components. Using the specific method of aggregation (Quick Cluster) we achieved two clusters, each cluster corresponding to a pre-determined component. We must say that we use the “Religious Behavior-**RB**” and Non-Religious Behaviors (**NRB**) labels only by taking into account the answers regarding their attitudes during religious feasts questions in our questionnaire.

4.2. Statistical validations of the religious clusters defined above

By crossing these results with the self-declaration and religious services attendance, we have reached a useful conclusion. These results, presented in Tables 1 and 2, confirm the results given by statistical methods and show also a high degree of sincerity of the respondents. Most of the religious self-declared persons are also religious as practitioners.

Table 1. Correlation between Formed Clusters membership and religious self-declaration

| Cluster Member | | Do you consider yourself as a religious practitioner ? (to live according to Religious Principles etc.) | | Total |
|--------------------|-----|--|--------|--------|
| | | YES | NO | |
| Type of respondent | RB | 71.7% | 20.8% | 46.5% |
| | NRB | 28.3% | 79.2% | 53.5% |
| Total | | 100.0% | 100.0% | 100.0% |

The results from Table 2 show that the non-religious persons go rarely to Church. They attend only the most important confession period around important Feasts Periods.

Table 2. Frequency of Attendance at Religious Services (Excepting Easter and Christmas)

| Attendance Frequency | Type of respondent | | Total |
|---|--------------------|--------------|--------|
| | RB | NRB | |
| I don't go at Church on Christmas or Easter | .9% | 8.0% | 4.7% |
| I go at Church only on Easter or Christmas | 1.3% | 21.0% | 11.9% |
| Rarely | 16.0% | 52.3% | 35.7% |
| Once per month | 23.6% | 11.9% | 17.3% |
| Once per week | 46.5% | 6.9% | 25.0% |
| Many times per week | 11.6% | | 5.3% |
| Total | 100.0% | 100.0% | 100.0% |

**The results are statistically different by applying Cramer and Phi coefficients to 5% confidence level.*

4.3. Impact of economic factors and religious form of behavior

In most cases, the respondent coming from a powerful household, doesn't participate with taxes to religious services. A significant percentage of the persons from households with high incomes pays occasionally taxes, only when they are forced (funerary, weddings, etc.) or only when they achieve luxury goods, such as a car or a house. This fact enhances the belief that money represents the root of evil and shows that rich people get distant from Church. This conclusion is against the general opinion presented in the media. So, one question should be added now: Does rich people make their contributions only for fame and popularity or they do not declare their contributions? The answer is very hard to be found but the following distribution presented in Table 3 shows that rich people is far from God.

Table 3. The type of respondents according to their household income

| Household income | Type of respondent | | Total |
|------------------|--------------------|--------------|--------|
| | RB | NRB | |
| Below 1000 lei | 59.7% | 40.3% | 100.0% |
| 1001-2000 lei | 39.8% | 60.2% | 100.0% |
| Over 2000 lei | 36.2% | 63.8% | 100.0% |
| Total | 46.5% | 53.5% | 100.0% |

We can observe the existence of a balance when we refer to respondents division between Religious and Non Religious ones, significant differences appearing when the entire sampling was split by household income.

The religious persons are in majority poor people or coming from household with low average incomes. The percentage of religious persons, as we clustered them before, decreases when the income is increased. This result is statistically significant at level 1%. (**Chisquare, Phi and Cramer tests** applied).

Another way to measure the contribution of economic factor to some religious acts, is to measure the frequency of purchasing some religious services or products.

The most religious products purchased by respondents are: candles, icons, crosses, books and magazines, religious magazines. At the same time, faithful persons spend their many on blessing their household, icons or jewelries.

As a result of applying the **Cramer test** in order to verify the correlation between the frequency of purchasing such services or objects, the following results are obtained: persons with high incomes purchase rarely such religious objects or services than the persons with a low income. By taking into account the fact that an analysis of the variation outlines the fact that the spent money with such religious objects does not significantly differ on a statistical feasible threshold according to income, it follows that the frequency of purchasing such religious objects is determined by

another reasons than the financial ones. At the same time, we have to mention the fact that the persons with higher income have greater claims. They can more frequently decline the supply of poor quality services, searching, in this way, high quality objects or services at a higher price.

4.4. Business success and Divine help. Does God divide or unit us in business?

A strange result is illustrated in Table 4. God’s help is not significantly accepted by the NRB category .

Table 4. Business success and source of potential help. Distribution by religious clusters

| | Religious Behaviors -RB | | | | Non Religious Behaviors -NRB | | | |
|--|-------------------------|--------------|------------------|-----------------------|------------------------------|--------------|------------------|-----------------------|
| | None | Small extend | Increased extend | Very increased extend | None | Small extend | Increased extend | Very increased extend |
| Economic Context | 16.7 | 33.3 | 16.7 | 33.3 | 11.1 | 11.1 | 22.2 | 55.6 |
| Political Context | 33.3 | 50.0 | 16.7 | 0.0 | 16.7 | 33.3 | 11.1 | 38.9 |
| Law Context | 16.7 | 50.0 | 33.3 | 0.0 | 5.6 | 33.3 | 16.7 | 44.4 |
| Personal experience | 0.0 | 33.3 | 33.3 | 33.3 | 5.6 | 16.7 | 44.4 | 33.3 |
| Business partners | 16.7 | 33.3 | 50.0 | 0.0 | 22.2 | 22.2 | 44.4 | 11.1 |
| God's help | 16.7 | 33.3 | 33.3 | 16.7 | 50.0 | 44.4 | 5.6 | 0.0 |
| Personal relations (family and relatives, friends) | 16.7 | 66.7 | 0.0 | 16.7 | 38.9 | 27.8 | 16.7 | 16.7 |

The non-religious category is grateful for its success to political, economic and law context. On the other hand, the Religious persons consider the results as a help given by a set of factors moderately distributed, i.e. God’s help, friends, Law context, political context and business partners.

3.5 Socio-economic factors and contribution of respondents to charitable activities, an econometric analysis

It is interesting to notice which are the factors and their impacts on charitable contributions. Have those factors only economic causes, religious, social or mixed causes?

In order to analyze this aspect, we made a multiple regression model considering as dependent variable, the CCAR variable and a few relevant factor variables. All variables are described in the previous paragraphs.

By applying the Ordinary Least Square in order to estimate the coefficients of the regression model, we have obtained the results presented in Table 5.

Also, we present, here, the multicollinearity diagnosis and the validity test for this model. Other details can be found in Annex, Table A1, A2, A3.

Table 5. Synthesized indicators of the regression estimation

| Factors | Model ³ Dependent variable = <i>CCAR</i> | | |
|---|--|--------------------------|-----------------------------|
| | Considering all respondent, including those who did not contribute ($CCAR \geq 0$) | | |
| | Coefficient | Standardized coefficient | Colinearity Diagnosis (VIF) |
| Religious Cluster Membership (RCM) | 9.26 | 0.11** | 1.33 |
| Household income (HSHI) | 0.03 | 0.07* | 1.33 |
| Type of household (HT) | -1.56 | -0.056 | 1.20 |
| Education (EDU) | 1.64 | 0.142*** | 1.67 |
| Occupation (OCC) | -1.55 | -0.091** | 1.25 |
| Age (AGE) | -0.065 | -0.026 | 1.293 |
| Gender (SEX) | -2.49 | -0.03 | 1.126 |
| Degree of trust in Church (DTC) | 7.98 | 0.16*** | 1.31 |
| A household member working abroad (WKA) | 10.51 | 0.08** | 1.042 |
| Overall model significance | F=7.016*** | | |

*level of significance = 10%, ** level of significance = 5% *** level of significance = 1%

Econometric remarks of model validity

The general form of the model could be represented as:

$$CCAR = 0.11RCM + 0.07HSHI - 0.056HT + 0.14EDU - 0.091OCC - 0.026AGE - 0.03SEX + 0.16DTC + 0.08WKA + \varepsilon$$

Since we are interested only to notice which are the relevant factors explaining the contribution to charitable events, we shall verify only the multicollinearity hypothesis, in order to see if there are some correlations among the factors which generate contributions.

³Authors' own calculations. All the results are obtained in SPSS ,a registered program of IBM-SPSS Inc.

According to Neter et al (1983) cited by Carvalho, S.P. and Cruz, C.D (1996) if VIF is larger than 10, then the multicollinearity has a strong negative influence on coefficients standard deviations. In our case, none of the VIF indicators is no higher than 2, so, we may say that multicollinearity influence is not significant.

The model is overall significant, as can be seen from the above table and its strength is not very high (9.8%) but it reveals some important applied economic facts.

Applied economic remarks of the results obtained by using the models.

The contribution to charitable events is influenced by three types of factors: religious factors; economic factors and socio-demographical factors.

The religious persons (**RB** category) tend to spend by (11%) more money yearly for charitable events, than the non-religious persons. Another religious factor is given by the trust in Church/House pray. The persons who feel more close to religion, who believe in Church tend to pay by (16%) more for charitable events.

The most important economic factor is determinant. The household income affects the contribution. A higher income will determine a larger contribution. Another economic factor is given by the possibility of working abroad.

Respondents who work abroad or who have family members working abroad tend to spend by (8%) more than the others, on charitable events. Not only the economic effect should be noticed here. The example of charitable behavior, the contribution to community or to church, which happen abroad in some communities, could stimulate the respondent to follow those examples in his country of origin.

Even if there is "belief" in religion or in Church and the respondent owns a satisfactory income, there are also other obstacles which might influence his contribution. The most important fact revealed by the model is that the contribution to charitable events is strongly influenced by social stability. It looks like job stability tend to be very important, instead of the quality of household, which seems to be less important in the decisions regarding the charitable contributions.

A stable job will give confidence and courage and will determine the person to contribute more for charitable events.

At the same time, a person who has a solid house, stable, situated in good condition, doesn't tend to pay more than the others who live in worse conditions; this factor is not statistically significant at an acceptable level of significance.

Educated persons contribute more. The previous analyses show that educated persons are less religious as behavior. Of course, there is a well-known strong relationship between income and education. Taking into account this fact, we expect that educated persons to spend more money, if the willingness/ desire exists.

The fact that educated persons contribute more to charitable events, as can be noticed from the above regression table, reveals the fact that educated persons are religious but don't have time to manifest themselves. Also the contribution to

charitable events could represent a form of religious behavior for those persons who don't have time to go to church, to participate to missionary events, etc.

Gender does not discriminate the contributions. Women or men contribute in the same manner, but they are influenced by other mentioned factors. The age of the respondent seems not to be so important in decision – making. This thing is normal, because the age is correlated to other factors, such as: lifestyle, age, low income and other obstacles.

Conclusions.

As we have noticed from the previous analysis, we have certain types of religious persons acting in different manners. The economic factors have significant implications in some religious decisions or behavior but, these factors are not singular. All the results have been validated via statistical tests (χ^2 , Cramer, Phi coefficient, Principal Components Analysis, ANOVA, regression model etc.) and the processing was made by using the SPSS program – a registered program of IBM – SPSS Inc). Consequently, the results show, according to the probabilistic accuracy, for the sample of the studied households, the followings:

- a significant (inverse) connection between the incomes level and the practices of religious public life;
- A larger amount of contributions to church is noticed from higher income households, where at least a member of the family worked or works abroad;
- There is no statistical evidence of a relation between the intensity of participating to religious life and the entrepreneurial activity;
- A relative weak relation is recorded between the business success and the affiliation to a religious community;
- From economic, social and cultural point of view, the results of research can be useful to entities (creators of policies, firms, NGO etc.) which are interested in directing the strategies and the plans according to the mentioned realities.

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Annex. Indicators of the regression model

Table A1. Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|--------------------|----------|-------------------|----------------------------|---------------|
| 1 | 0.314 ^a | .098 | .084 | 39.97429 | .165 |

Table A2. Analysis of ANOVA^b Variation

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|--------------|----------------|-----|-------------|-------|-------------------|
| 1 Regression | 100902.986 | 9 | 11211.443 | 7.016 | .000 ^a |
| Residual | 925209.329 | 579 | 1597.944 | | |
| Total | 1026112.316 | 588 | | | |

Table A3. Parameters Estimate and Model Validity

| Model | Non-standardized Coefficients | | Standardized Coefficients | t | Sig. | Colinearity Statistics |
|------------------------------|-------------------------------|------------|---------------------------|--------|------|------------------------|
| | B | Std. Error | Beta | | | VIF |
| (Constant) | -22.791 | 12.846 | | -1.774 | .077 | |
| Religious Cluster Membership | 9.264 | 3.803 | .111 | 2.436 | .015 | 1.332 |
| Household Income | .003 | .002 | .076 | 1.664 | .097 | 1.335 |

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| | | | | | | |
|-------------------|--------|-------|-------|--------|------|-------|
| Type of household | -1.565 | 1.203 | -.056 | -1.300 | .194 | 1.204 |
| Education | 1.646 | .592 | .142 | 2.781 | .006 | 1.679 |
| Occupation | -1.550 | .752 | -.091 | -2.061 | .040 | 1.253 |
| Age | -.065 | .113 | -.026 | -.574 | .566 | 1.293 |
| Gender | -2.491 | 3.532 | -.030 | -.705 | .481 | 1.126 |
| Church Trust | 7.981 | 2.207 | .163 | 3.617 | .000 | 1.310 |
| Working abroad | 10.514 | 4.960 | .085 | 2.120 | .034 | 1.042 |

a. Dependent Variable: Contribution to charitable events