

# Implication of Environmental Certification and CSR for Companies' Sustainable Performance in Developing Countries

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## Abstract

This article presents a new approach to measuring level of social and ecological consciousness in developing countries based on the example of Ukraine. The paper documents a relationship between introduction of eco-certification and corporate social responsibility practices into companies' daily activities, and the possible subsequent increase of their revenues, social reputation and competitiveness on international markets. Environmental certification will be also considered as a systematic tool to guarantee the quality of products, production and company's business processes.

The research was conducted during 2014-2015 and has covered 35% of Ukrainian companies from various branches that had valid environmental certificates. Based on regional distribution, distribution according to the industry a company operates in, in this paper we explore correlation between implementation of eco-certificates and CSR and their influence on company's performance.

The research is aimed to demonstrate how the introduction of green policy, environmental certification and corporate social responsibility influence company's societal value, its reputation and competitiveness on the market, and whether it helps receive financial benefits in short- or long-term period.

**Keywords:** corporate social responsibility, company's societal value, environmental certification, sustainability

## 1. Introduction

Globalization processes are nowadays challenging the market players all over the world. To face the demand and expectations of consumers as well as to respond to new legal national and international regulations companies are encouraged to progress and modernize their way of doing business very fast. One of such modern challenges is sustainability, which makes the enterprises consider not only the economic part of their production, but also social and environmental aspects. The best way to show the sustainability to the public is to implement a CSR concept in the managerial practice and to certify the products/management systems according to internationally recognized standards.

Thus, in our research we will focus on the rising popularity of ecological certification and its influence on the corporations' management, their market positions and customers' loyalty. Ukraine as a developing country that stands on the way of improving environmental and social standards was chosen for the data gathering and analyses. In this case motivations and consequences of the certification in a developing country were observed.

Currently, Ukraine is targeting the membership in European Union, has signed an Association Agreement and is struggling to adjust its production to international norms and standards, including the environmental ones.

Taking the above mentioned into consideration such major findings are to be reported in this article: 1) the demand for ecological certification according to the economic sector; 2) regional distribution of environmental certificates; 3) correlation between the implementation of CSR and environmental certification; 4) purpose for which eco-certification and CSR are implied; 5) time period for expecting a full return on investments from eco-certification, implementation of eco-technologies and social activities.

## 2. Research Problem

Despite the fact that sustainable development for various industries and whole countries in general has become

an issue in early 90's, this question is of the core ones for the developing countries nowadays. Few researches are being conducted on the mentioned topic measuring relation between practical implementation of ecological and social responsibilities; refinement of business activities by local entrepreneurs and improvement of countries image on the global markets.

Therefore, the purpose of this article is to demonstrate correlation between the above mentioned factors and companies' access to international market. The research is focused on Ukraine after signing the Association Agreement with the EU. To conduct a positivistic research the following questions are being posed: Does the environmental certification of products and/or management systems correspond to the better social and ecological performance of the company? Does environmental certification open an access to international markets? Does it bring short- or long-term benefits to the company?

### 3. Methodology

In order to find a correlation between implementation of company's green and social policies and increase of its profit a questionnaire has been created and an interview with 64 environmentally certified companies has been conducted. ISO 14000 is a set of environment-related standards, out of which we have included ISO 14001 (environmental management systems) and ISO 14024 (environmental products certification) into our research.

Statistical analysis made in SPSS with focus on correlation between factors and the strength of it, gave an opportunity to evaluate how ecologization influences different industries in Ukraine (geographical factor; years when certification was received; implementation of CSR were taken into account).

For further analysis of eco-certificated companies in Ukraine we have formulated two basic hypotheses. The null hypothesis meant that introduction of ecological certification directly influences companies' financial results in a short-run. The alternative hypothesis stated that introduction of green policy; eco-certification and social corporate responsibility influences companies' reputation and social image on the market and helps increase their revenues, but in a long-term period.

### 4. Problem Review

Standardization and certification systems in modern economy create a base for enhancement and guarantee high quality of production, services, technology, and management in the enterprises. As mentioned in (SKRYPCHUK, 2012) environmental certification became a tool to build a sustainable path for the country's development. Hence, it provides necessary information for the life quality valuation, regional development, availability of natural resources and their efficient utilization, social security and economic stability.

The concept of environmental certification was fully accomplished and presented to the public in 1996, although the first ideas of it have been introduced few years earlier. As soon as it was authorized in Europe, Ukraine has followed the same way. However, the application of new processes of products' quality evaluation, which include eco-certification, took some time; the basic concepts and first practical application of ecological certification in Ukraine were observed only in the mid-2000s (SKRYPCHUK, 2012).

Although, the eco-certification received a legal recognition, hardly was there a big campaign to provide citizens and producers with an information needed. Most of Ukrainian companies have faced the problem and challenges related to ecological certification for the first time only after taking a decision of entering international markets, where demand on certified products is much higher than in domestic one. What is more, as recent researches show (CHERPAK, 2012; TRETIAK, 2013), ecological and social consciousnesses, as well as planetary responsibility are becoming more significant issues for Ukrainian society, even though this process is progressing very slowly.

Generally, certification is a voluntary action and depends on the willingness of every producer to put it into practice in his enterprise. The most well-known and worldwide recognized certificates are provided by the International Organization of Certification (ISO). The amount of certificates released each year that correspond to the ISO-standards is one of the biggest in the world. To start with, usually the developing countries try to adapt their standards to ISO and only after that can they establish domestic/private certification.

Based on the legislative system, eco-certification can be demanded as a legal procedure or be undertaken on voluntary basis. While mandatory certification according to national laws in most of the cases secures the minimal standards for products quality – minimal requirements that are needed to avoid harm to human health and negative effects on human activities; voluntary certification challenge higher standards that among all also include environmental protection. Thus, environmental certification that has arose from the British Standards (BS 7750) on environmental management system was adopted by the European Union in 1993 for the creation of Eco-Management and Audit Scheme (EMAS) and further by International Organization of Standardization for

## ISO 14000.

In this research we have focused on the ISO 14000 as an international standard that is recognized all over the world. Namely with certificates on conformity to these standards can Ukrainian as well as other companies become equal players on international market and increase export of their production. Out of all variety of standards that belong to environmental group such as ISO 14001 – Environmental management systems; ISO 14020 – Environmental labels and labeling; ISO 14031 – Environmental performance evaluation; ISO 14040 group – Life Cycle Assessment; ISO 14064 – GHG emissions; ISO 19011 – Environmental management system auditing Guidelines; and ISO 50001 – Energy management systems; we have chosen the first two as they are the most widely presented on Ukrainian market.

One of the reasons for the entrepreneurs to accept the necessity and follow the procedure of ISO 14001 certification, is its resemblance with the ISO 9001 – a standard on quality management systems (EDWARDS, 2003). As those standards had been adopted by the same companies earlier, it became much easier for them to apply environmental management systems afterwards. Both of the certification schemes include policy establishment, targets setting, responsibility and security, documentation control, monitoring, preventive actions, data recording and audit. In other words, there are two main aspects to be considered for the implementation of the standards (DADDI ET AL., 2015): “organization” or common application, and Deming cycle with “Plan-Do-Check-Act” approach.

The future of environmental certification has been also shifting and expanding from particular evaluation of specific characteristics like management systems and product quality to the whole life cycle assessment of the “product life” and corresponding methods of effective production and governance. These assessment procedures do not only cover the environmental issues but are also introduced into the ISO 22000 standards on food quality with the traceability on material flow, feed and food chain, as well as utilization processes.

The implementation of standards for eco-certification may cause some difficulties when talking about national legislation of a particular country. The reason for it is that national quality standards for producers usually do not fully correspond to the higher international ones. Nevertheless, special actions are being taken by the Ukrainian state in order to harmonize national standards (DSTU) with the international ISO standards. According to TRETIK (2013) by the year of 2013 almost 70% of international standards have already been adopted in Ukraine. The most well-known institutions that are responsible and authorized to issue eco-certificates are NGO “Lively Planet”, “Bureau Veritas”, Ukrainian Quality Association (SIC) and Ukrainian Research and Training Centre for Standardization, Certification and Quality (“UkrNDNC”).

Considering the latest survey data from official ISO-reports, we can observe the fluctuation of the amount of international ecological certificates issued to Ukrainian companies during past few years. According to such reports during 2008 and 2014 the amount of issued management system certificates varied from 123 to 206 per year (see Fig.1). The time period selected for the research corresponds to the beginning of euro-integrative processes and official governmental announcement of their start.

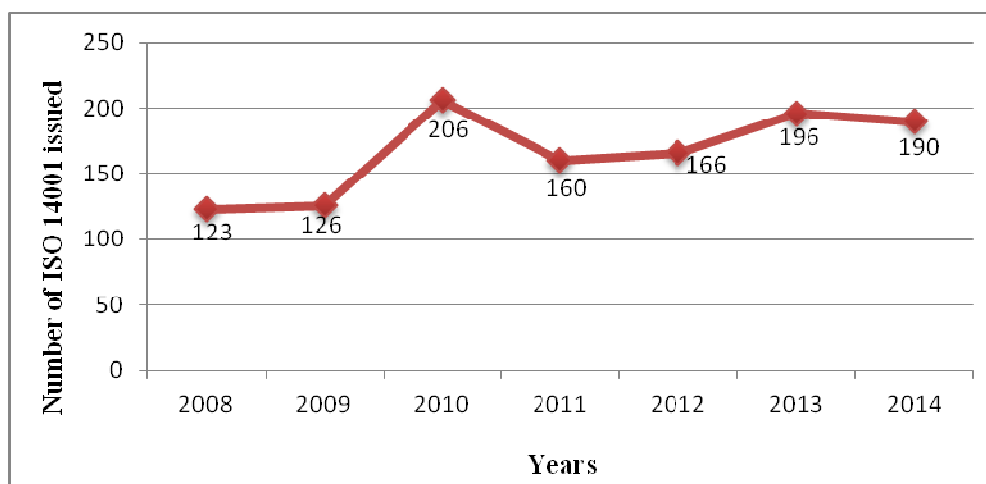


Figure 1. Amount of certificates ISO 14001 issued in Ukraine from 2008 till 2014  
(based on ISO Annual Reports. Note 1)

The highest demand for environmental certification of management systems is seen in 2010. That year 206 certificates were issued. At the same time Ukrainian government has officially announced the EU-integration policy, which stimulated production of goods for export and the need for products labeling according to European regulations. New trade expectations that were influenced by the policy have caused changes in producers' behavior. Such aspects of business performance as social and ecological responsibility started playing crucial role in companies' success (MELYKH, 2015). To prove the fulfillment of societal socio-ecological demands companies were encouraged to go through the certification processes what is also shown by the amount of internationally recognized certificates issued.

While conducting the research we have challenged an assumption that implementation of ecological and social responsibilities are mainly practiced to increase financial benefits of the company and improve its competitiveness on the international and domestic markets. A questionnaire has been created and an interview has been conducted. The survey showed that there is a correlation between implementation of company's green and social policies and increase of its financial results.

Usually eco-labeled products cost more than goods without certification which means that the company that decides for the certification procedure should not expect to receive fast financial benefits (MAZURKIEWICZ, 2004; MOMOT, 2007). That's why we should assume that such decision is mainly based on the environmental consciousness both of the producers and consumers. Ecological consciousness and responsibility is rather affected by the general welfare of the state – the poorer the country, the less will its citizens care about global issues such as sustainability, climate change, environmental security etc. (Note 2)

As in Ukraine the average salary equals to 202 USD (Note 3) it is hard to expect to have fast change in global consciousness. However, latest events that took part in the country in 2013-2015 (EuroMaidan Revolution; the War in Eastern Ukraine; signing the Association Agreement with EU; access to new markets) have awakened the civil society and simultaneously increased the level of responsibility both on individual and corporate levels. Such events/changes in society's life lead to the continuous implementation of CSR, eco-certification and green technologies by big industrial companies as well as small enterprises (LYON & MAXWELL, 2008).

The analyses of the reports provided by Ukrainian certification organizations: NGO "Lively Planet", "Bureau Veritas", and Ukrainian Research and Training Center of Standardization, Certification and Quality ("UkrNDNC") (Note 1) have shown that the interdependence between the amount of ecological certificates for products and the number of firms that have received such certificates is rather low, providing that few companies can have a larger amount of products certified.

The conducted research shows that in the time period of 2010-2014 93 firms/producers have received ISO 14024 certificates for the first time and, thus, started their participation in the process of eco-certification in Ukraine with an approximate number of products equal to 400. Simultaneously, talking about certification of the environmental management system (EMS) it should be stated that more than 800 Ukrainian companies have come through eco-certification according to ISO 14001 since the process had been launched in early 2000s (Note 1).

In 2014 approximately 190 Ukrainian companies had valid environmental certificates of different types. Therefore, according to the statistical data there were more certificates issued than the companies who have received them.

## 5. Results

In order to answer the research questions that were mentioned above, we have conducted a survey, based on the interviews, reports' analyses and statistical data from the environmentally certified companies in Ukraine. 64 companies agreed to participate in the research (app. 35% of all companies with valid eco-certificates in 2014 - beginning of 2015) that were certified for the purpose of further implementation of the environmental responsibility in business activities (see Fig. 2).

In order to exemplify how much in a short-run introduction of eco-certification improves company's financial results we have questioned producers and have conducted a statistical analysis of the results received. Out of all questions posed to the respondents five were chosen for a wider research: 1) what type of certificate was received; 2) is the CSR implemented; 3) have company's financial results changed after eco-certificate was received; 4) in what years was certificate received; and 5) in which branch is the company working.

Relation between the year a certification and the branch in which a company is functioning is shown in table 1. All the researched companies have been divided into five categories/groups. These include: construction (building materials), production of industrial goods, service providers, food production and processing, chemical

industry. The survey covered mostly those companies that have passed certification between 2010 and 2014 at first, and had at least one valid eco-certificate at the time of research (table.1).



Figure 2. Distribution of Ukrainian companies that have eco-certification (according to production capacities) in all industries and all regions of Ukraine, including Crimea. (Source: own research)

Table 1. Amount of companies from various branches that have passed eco-certification in Ukraine in the researched time period

Branch	Year when first certificate has been received						Total amount of companies
	Before 2010	2010	2011	2012	2013	2014	
Production of building materials	5	3	1	4	1	0	14
Production of industrial goods	9	1	5	5	2	2	24
Services	0	0	0	1	0	1	2
Food production and processing	3	0	2	2	6	3	16
Chemical industry	0	1	0	2	3	2	8
Total amount of companies	17	5	8	14	12	8	64

Tabl.1 as well as Fig.2 demonstrates that the highest demand for ecological certification came from producers of industrial goods (24 companies). The next in the row were companies producing building materials and food industries (14 and 16 firms respectively). Considering the years of first certification receipt, it can be seen that

17 companies out of 64 have passed it before the year 2010. However, such result could be influenced by the fact that these 17 companies were either subsidiary of big international corporations or have received investments from foreign stakeholders and have implemented the practice of social and ecological responsibility prior to the researched period. Besides that, time period till 2010 is voluminous and lacks proper data on the eco-certification that may cause inaccuracy in our measurements (deviation). Generally, the distribution of our data could be characterized by a peak in 2012 and drop in 2014 what is explained by the economic crisis in Ukraine.

Additionally, Fig.2 shows that eco-certification was popular among companies whose head offices are officially located in Kyiv and Kyiv's region (18 companies). It is followed by the Eastern and Central regions with the highest level of production capacities (13 and 16 respectively). Such results could be caused by an industrial centralization/specialization of Eastern and Central regions of Ukraine. Except for this reason, territorial closeness to the capital provides better access to information on new economic possibilities, new conditions to involve FDI and financial support or to enter international markets (e.g. requirements to receive eco-certificate etc.), which make companies that are located there more acquainted with the latest market demands.

For further analysis of eco-certificated companies in Ukraine two basic hypotheses were formulated. Null hypothesis foresees increase of company's financial results in a short-run period after ecological certification (tabl.2). If correlation between the type of eco-certification and increase of financial results is not observed, we will build alternative hypothesis. The alternative hypothesis states that introduction of green policy, eco-certification and corporate social responsibility influences company's reputation and social image on the market and helps increase its revenue, but in a long-term period.

To testify the null hypothesis we have analyzed interdependence between the level of revenues and type of a certificate (table.2). If first hypothesis is refuted, it will show that Ukrainian company's follow a long-term development strategy.

Table 2. Interdependence between the level of revenues and type of a certificate

Type of certificate/ Class of certificate	Revenues		Total amount of companies
	Increased	Remained the same	
ISO 14001	6	10	16
ISO 14024	22	20	42
Both	3	3	6
Total amount of companies	31	33	64

Among the surveyed companies, the biggest amount of eco-certificates was received for the commodities (ISO 14024) and not management systems – 42 companies out 62. Improvement of financial results after eco-certification has been confirmed by 48,44% of respondents. It should be mentioned that nowadays for some of the surveyed firms (mainly from food industry) it is practically impossible to work and compete on the market without proper certification that proves ecological safety of their products.

Some researches (LYON, 2008; STAPLETON, 2001; TUNNESSEN, 2001) demonstrate that ecological certification is in most of the cases introduced in business activities along with practice of corporate social responsibility (CSR). As management in its definition already covers social part of company's performance, ecological responsibility is a new challenge for them to progress. The assumption could be made, that ecological certification of management systems would be better combined with CSR. In our case the CSR is seen as the combination of both environmental and social responsibility and is either separated in two of them or analyzed together.

Whereas, certification of products would be better combined with eco-certification as both of them determine quality of the production and ecological safety of the environment. Therefore, we have analyzed relations between the amount of companies that have one of the above mentioned responsibility and types of certificates these companies have (table.3).

Table 3. Interdependence between adoption of ISO 14000 certificates and implementation of CSR (social and ecological responsibility) with respect to ISO 9000 on quality management systems

Type of responsibility	Type of eco-certificate			Total amount of companies
	ISO 14001	ISO 14024	Both	
Only ecological	2	10	2	14
Only corporate social	4	8	0	12
Both ecological and corporate social responsibility	10	16	4	30
None	0	8	0	8
Total amount of companies	16	42	6	64

As seen from the tabl.3 half of the companies in the sample decided to introduce ecological certification together with CSR. As an explanation to this fact we suggest that some companies have previously been certified according to ISO 9001 standard on quality management system and it was easier for them to add environmental part (ISO 14000) to ensure a full CSR with both social and ecological responsibilities. At the same time, almost the same amount of companies (12 and 14 accordingly) practice only one out of two types of responsibilities: either ecological or social one. Only 8 out of 64 surveyed companies have neither adopted corporate social responsibility, nor were they aware of its existence. Generally, as can be seen from the tabl.3, the most demanded were ISO 14024 eco-labeling certificates.

From these facts and conducted interviews we can infer that 87.5% producers that have implemented one or both types of responsibilities in their business activities have developed their own ecological policies. These typically include planning activities required for leading ecological and social responsible business as well as application of standardized certificates (in our case ISO 14001, and ISO 14024). Along with this all the respondents imply that implementation of both types of responsibilities reinforce the impact on financial and non-financial results of business activities.

In order to bolster the above mentioned observations it was decided to further analyze the relation between implementation of CSR or eco-certification and increase of company's financial results (e.g. revenues) (table.4).

Table 4. Interdependence between changes in company's financial results and CSR implementation

Type of responsibility	Financial results		Total amount of companies
	Have increased	Haven't changed	
Only ecological	3	11	14
Only corporate social	5	7	12
Both ecological and corporate social responsibility	19	11	30
Neither	4	4	8
Total amount of companies	31	33	64

The outcomes demonstrate that the best results have those companies that have fully introduced CSR (both social and ecological responsibility) – 19 out of 30 companies have confirmed an improvement of financial results. Such conclusion was provided by the surveyed companies after having done a comparative analysis of: the volume of goods produced and sold; company's business activities on international markets (56 companies from the sample either export their own production or are subsidiaries of international corporations); customers' loyalty before and after CSR and eco-responsibility's implementation.

However, the empirical results that have been concluded from interviews with the companies' representatives cannot fully describe direct relation between increase of financial results and implementation of CSR and eco-practice in the company. Therefore, we have decided to conduct a statistical analysis of the received data and

testify both hypotheses that were announced at the beginning of the article. (see table.5)

Table 5. Statistical analysis of the degree of dependence between the researched variables

Dependence/Criteria	$\chi^2$	<i>P</i>	<i>C</i>	<i>Tc</i>	Statistical Interdependence
Type of responsibility / Profit increase	6,98	0,10	0,31	0,25	Medium strength dependence
Type of a certificate / Profit increase	1,03	0,70	0,11	0,11	No relations
Type of a certificate / Type of responsibility	8,76	0,20	0,35	0,24	Medium strength dependence
Year of certification / Industry/economic sector	25,13	0,20	0,53	0,30	Substantial relationship

Identification of relationship between the studied parameters was performed using Pearson criterion  $\chi^2$ , their strength - through mean square coefficient  $\phi^2$  and Cramer *Tc* contingency coefficient for odd tables. Individual cases in this analysis are presented only by average value (PANIOTTO, 2004). The main way to identify relationship between environmental certification, corporate social responsibility and revenue growth and between the year of certification and sector of enterprises was to build contingency tables. Analysis was conducted with SPSS 17.0. The level of trust to statistical results in our research was determined to equal 70%.

The null hypothesis defined from the previous tables assumes that there is correlation between fulfillment of eco-certification procedure and increase of financial results in a short-run period. As seen from the results no relationship is observed between a type of certificate and the increase of financial result. Low trust in the existence of the interdependence is confirmed by 30% level of confidence.

That is, type of certificate (ISO 14001 or ISO 14024) does not really affect company's financial results. Although, 31 companies (see tabl.2) have previously confirmed the income growth (in 48,5% cases), we suppose that it was caused by other factors rather than by receipt of ecological certificates.

This and other (BLACKMAN, 2011; GOLDEN, 2010; MELYKH, 2015) researches show that most of the companies apply eco-certificates not in order to receive financial benefits, but to improve their social image and reputation, increase competitiveness, and company's societal value. This in turn corresponds to the basic values of company's sustainable performance.

Most of the companies are expecting to receive financial benefits and full return on investments for eco-technologies, eco-certificates and other social activities only in a long-run period. According to  $\chi^2$  and *C* criterion (tabl. 5) there is a medium strength correlation between type of responsibility and revenue increase. This could be stated with 90% accuracy ( $p = 0,1$ ). (Note 4)

In the research we have also made an assumption that implementation of ecological certificates is being made simultaneously with an introduction of one of the above mentioned types of responsibilities (ecological or social).

Table 5 shows with 80% confidence ( $p = 0,2$ ) that we can be affirmed that there is an average correlation between the type of certificate (ISO 14024, ISO 14001) and the CSR or one of its components ( $C = 0,35$ ). This infers that companies which introduce one or both types of responsibilities to their business activities usually decide to confirm this fact with application of a correspondent certificate. And vice versa, those who have received one type of certificate are trying to demonstrate its conformity to company's corporate culture and business activities.

By testing correlation between industries where the respondents are working and the amount of certificates received, we have defined that with 80% probability during 2010-2014 there is a high correlation-marked relationship. This could be described by the fact that some industries in Ukraine have been developing faster than others, and the companies that are functioning there have already entered international markets - especially EU market - and, therefore, have implemented eco-certificates and CSR.



## 6. Discussion

The research has led to the refuse of null hypothesis about dependence/correlation between receipt of eco-certification and increase of financial results in a short-run period and has proven the alternative hypothesis about introduction of green policy; eco-certification and corporate social responsibility and their influence on company's reputation and social image on the market.

It was found that ecological certification is mainly implemented among companies from the sector of economy that produce industrial goods. Usually, practice of ecological and social responsibilities is popular among enterprises that are located near big business centers or capital city. The research has also showed that implementation of eco-certification is common practice as a part of CSR or simultaneously with it. Generally, both eco-certification and corporate social responsibility are used by companies in order to increase company's societal value and are seen as a long-term investment.

The research has also showed that velocity of eco- and social responsibilities implementation depends on how innovative and modern the economic sector in which the company is functioning can be; what information access do the key players have about new challenges and opportunities; and whether there is a proper controlling system. These and other factors influence managerial decisions to formulate ecological policy, introduce CSR practice, and establish a strategy for company's sustainable development.

Conducted research has provided significant results on business social and ecological consciousness in Ukraine; however, detailed analysis of socio- and eco- responsibilities and their impact on local and international performance of various developing countries will be a question of further researches.

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## Notes

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Note 2. Environmental Performance Index: Finland (rank 1); Croatia (15); Ukraine (rank 44) out of 180 countries according to the 2016 report. Retrieved from: <http://epi.yale.edu/>

Note 3. Average salary in Ukraine 4205 UAH, Ministry of Finance of Ukraine data for August 2015 with the exchange rate 100 USD = 2131 UAH, National Bank of Ukraine. Data for 28.08.2015

Note 4. < 0,2 – slight, almost negligible relationship 0,2 – 0,3 – low correlation, definite but small relationship 0,3 – 0,7 – moderate correlation, substantial relationship 0,7 – 0,9 – high correlation, marked relationship, > 0,9 – very high correlation, very dependable relationship

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