Regional and Business Studies (2014) Vol 6 No 2, 9-21
Kaposvár University, Faculty of Economic Science, Kaposvár

CITIZEN ASSESSMENT OF CORPORATE ENVIRONMENTAL ACTIONS IN THE SOUTH BASIN OF LAKE BALATON[1]

Arnold CSONKA, Zsolt KŐMŰVES, Csaba BORBÉLY, Gábor SZABÓ-SZENTGRÓTI, Eszter SZABÓ-SZENTGRÓTI
Kaposvár University, H-7400 Kaposvár, Guba S. 40.

ABSTRACT

In our research we focused on an ecologically sensitive area. We analysed the population attitudes of corporate environmental activities in the south catchment area of Lake Balaton. Our primary aim was to reveal those local population groups who are ready to be partners in CSR (and with environmental) actions regarding their consumer attitudes and purchasing decisions. The research was realised within the framework of the TÁMOP-4.2.2.A-11/1/KONV-2012-0038 project and it was based on the results of a public survey of 500 participants. Data was analysed by using multivariate statistical methods. According to our results those respondents who found the common values more important than the average showed more willingness towards environmentally friendly consumption and purchasing products from corporations with CSR activities. The "Individualists", who prefer a specific quality of life, and the "Indifferent" group showed reluctance towards responsible consumption compared to the "Cost-oriented" group.

Keywords: corporate environmental activities, local population groups, consumer attitudes, purchasing decisions, CSR

INTRODUCTION

In our research we focused on an ecologically sensitive area, analysing the population attitudes of corporate environmental activities in the south catchment area of Lake Balaton. Our primary aim was to reveal those local population groups who are ready to become partners in Corporate Social Responsibility (and environmental) actions through their consumer attitudes and purchasing decisions. The research was realised within the framework of the TÁMOP-4.2.2.A-11/1/KONV-2012-0038 project with cooperation between Kaposvár University and the Hungarian Academy of Sciences Centre for Ecological Research. This paper is based on the results of public survey of 500 respondents.

LITERATURE REVIEW

Many anthropogenic activities negatively affect the natural-ecological conditions of the catchment area of Lake Balaton. The Water and Environment Central Management published the classification of anthropogenic effects in the Sub-basin Water Management Plan of Lake Balaton. Many of these effects are connected to

[1] This article was supported by the project "Balaton" TÁMOP-4.2.2.A-11/1/KONV-2012-0038

company sectors like agriculture-caused phosphorus-, nitrate-, and other emissions, industrial waste water problems, organic materials and water-extraction for fish-pond farming, industrial waste problems, industrial and agricultural water-extraction, and greenhouse gases. These factors endanger our surface water and groundwater. Tourism has a dominant role in the economy at the main Balaton holiday area and its' competitiveness determines the economic situation (*Molnár*, 2007). The influence of other actors on the environment of the area were analysed in different studies (*Kovács*, 2014; *Nagy*, 2014; *Torma and Kovács*, 2014). Therefore, the interaction between companies and the nature is specific, because economic operators in the basin depend on the state of the natural environment. (*Péter et al.*, 2011; *Buday-Sántha*, 2008)

Thus, in the observed area, sustainable activities of the companies have a great importance. The current paradigm change – mainly thanks to the present economic crisis - increases the relevance of this question. For this reason, instead of biased profitability, CSR became more important (*Polák-Weldon*, 2012). CSR includes aims and activities regarding environment protection, maintenance and improvement (*Commission of the European Communities*, 2001).

According to *Kotler and Lee* (2007) *CSR* means a commitment to doing voluntary actions for the common wealth and supporting it with resources. This definition clearly states that CSR needs to be unenforceable and independent. At the same time it is not clear what motivates managers to accept this "sacrifice".

It is our belief that within corporate culture the extension and incorporation of CSR requires much more incentive than simple concerns about future. Corporate and predictable strategic advantages are required in CSR. Accepting CSR means that we should not agree with *Friedman's* (1970) classic conclusions that profit maximization is the only social responsibility of corporations or with *Jensen* (2001) who said the same about maximizing company (and ownership) value. We agree with *Mintzberg et al.* (2002) that one-sided maximization of ownership value destroys and drives a wedge among society members, furthermore an egoist economy moves into inevitable collapse.

From this aspect, CSR means that we need to find the right combination between opportunistic and altruistic aspects in order to create values – even with trade-offs – for owners and stakeholders at the same time. The same principle is represented by *Brugmann and Prahalad* (2007). We should accept that CSR companies have to put emphasis on community and self-interest at the same time. To emphasize absolute altruism and a non-profit approach could be rather hypocritical for consumers as well. *Kim and Lee* (2012) analysed "stigmatized" industries (fast food restaurants or the tobacco- and beer industry) in their quantitative research regarding how the perception of motives behind CSR affects the opinion of consumers. According to their results, honest admission of individual interests leaves a much more positive impression on consumers than references about social interest in CSR. Researches about managers (*Coppa and Sriramesh*, 2011; *Pouliopoulos, et al.*, 2012; *Durmaz, et al.*, 2011) also show the „selfish" company aspects in CSR activity incentives.

In this paper we tried to find out whether consumer behaviour in the south basin of Balaton gave the opportunity for companies to take advantage of self-interested and market-oriented CSR actions.

MATERIAL AND METHODS

During the research we used the results of a public survey of 500 participants. From this database we analysed the value preferences of the population, the attitudes about nature, the environmentally friendly consumption and the effect of purchase incentive CSR activity. Quantitative statistical methods were used for the study. Responders answered using a five-level Likert item. Factor-, cluster-, variance analysis, correlation and nonparametric comparison were also used during the research. Further methodological details will be described in the results.

RESULTS AND DISCUSSION

Value preferences of responders were revealed with nine questions. They had to answer a five-level Likert scale about how different values are important in their everyday life. We explain the mean values of different areas according to importance. The most important value was, of course, family with the lowest standard deviation. Answers about the importance of family were rather uniform across the board (*Table 1*).

Table 1

Value preferences of responders with five-level Likert item

Values	n	Mean	Std. Deviation
family	500	4.94	0.367
money	498	4.36	0.880
friends	500	4.24	0.963
free time	500	4.17	1.018
work	496	4.07	1.271
environment and nature protection	499	3.69	1.134
religion	495	2.92	1.386
local public affairs	500	2.90	1.138
politics	496	1.86	1.109

After family value, the quality of life influencing aims (money, friends, free-time, work) were the most important for responders. On the second half of the preference order environment and nature protection stood out from collective values. Environment and nature protection was definitely the most important among the community values. It was important to study how the assessment of the importance of environment and nature protection related to the assessment of other values in importance. Concerning this area, the strongest correlation – Spearman rank correlation – was with the assessment of local public affairs (Rho=0.565, p=0.01).

In the next step we analysed whether value factors could be revealed to explain the relevance-variance of more value areas. In order to determine factor values we

used main component analysis and components were rotated with varimax. Family value was excluded from the factor analysis because of the homogeneity of responses. Relevance-values were moderately useful for factor analysis (KMO=0.750, Bartlett-test p=0.000). The number of factors was determined by the Kaiser-criteria. Factor values were defined by regression method. As *Table 2* shows, two value factors could be separable using the Kaiser-criteria. Factors explain 58.99% of the variance of preference question assessment. One factor represented the importance of individual life quality and the other factor gave information about community values. Based on the factor weight, value preference variables could be clearly classified into either of the two factors; there was no relevant overlap among the factors. This also means that the importance of individual and common interest was consistently and well separated in the respondents' judgements.

Table 2

Rotated component matrix of value preference factor analysis (n=486)

Variables	Components	
	Individual life quality importance	Community values importance
free time	.812	.147
friends	.793	.085
money	.772	.010
work	.766	.091
local public affairs	.125	.839
environment and nature protection	.297	.729
religion	-.116	.653
politics	.092	.651

In the second part of our analysis, we studied what group structure could be developed by these two factors among the respondents. To separate the groups further, more cluster analyses (Ward hierarchical, K-means, Two step) were applied. The different methods gave similar results. From these results the three-cluster K-mean method is explained below. During the cluster analysis responders were separated into three groups: Community-oriented, Individualists and Indifferent. After nine iteration *Table 3* contains cluster-means. The main characteristic for "community oriented" cluster members was that the importance of community values was above the average, while individual interest was not negligible. "Individualists" considered community values less important, while quality of life was especially important for them. Compared to the average, the "Indifferent" group believed that the individual quality of life was less important; while community values were also less significant for them.

In the following steps we present that according to each value preference cluster, differences could be seen in environment conscious behaviour. We could

find answers regarding whether environmentally-conscious behaviour appeared to concern actions based on the respondents' internal judgements. Fifteen statements were created in order to estimate the frequency of the population's simple and practical environmentally-conscious activities. Respondents used a five-level Likert scale to express how often they perform with these actions. Value "1" meant "never" while value "5" denoted "always". *Table 4* shows the average results.

Table 3

Cluster means of value preference clusters

Factors	Cluster means		
	Community oriented (n=174)	Indifferent (n=127)	Individualists (n=185)
Individual life quality importance	.31429	-1.32504	.61402
Community values importance	.98165	-.21072	-.77862

Table 4

Mean of environment-conscious activities' frequency

Statements	n	Mean	Std. dev.
I turn off the light when nobody is in the room.	499	4.67	0.662
I switch off the television when nobody is watching.	499	4.52	0.863
I try to save water during washing-up. I do not leave the water running.	499	4.26	0.958
I enjoy hiking in the nature.	500	4.14	1.120
I try to buy energy-saving household appliances and bulbs.	500	4.09	1.136
I usually have a shower instead of having a bath.	500	3.98	1.254
If I am cold, I rather wear another sweater instead of turning up the heating.	500	3.96	1.125
I recycle our household waste.	498	3.51	1.400
I completely switch off the television, video, etc. instead of using stand-by.	497	3.38	1.651
I prefer refillable containers to reduce waste.	497	3.23	1.386
I compost the organic waste of our household.	500	2.70	1.671
I do not accept the free plastic bags offered in supermarkets.	499	2.63	1.420
I choose comparable products which have an environmentally friendly trademark or label.	498	2.48	1.317
I participate in the school's/kindergarten's paper/cardboard collecting program.	500	2.06	1.451
Whenever I can. I choose bio foods instead of controlled ecological products.	499	1.92	1.176

As *Table 4* shows, responders mainly carried on "convenient" and economically interested activities in their everyday life. Higher awareness, investigation, or additional inputs were less typical in these activities.

From these statements more could be connected to conscious purchase behaviour, marked with blue colour in *Table 4*. As a result of our research, in this paper we mainly focused on these environmentally-conscious variables. According to the results of all variables of *Table 4* and the factor analysis of coloured variables, a common factor can be determined regarding environment-conscious behaviour connected to purchase situations. This common factor basically differentiates from factors explained by variance of other variables. As we focused only on environment-consciousness in purchasing situations in this study, therefore, *Table 5* shows the result of a purchase situation factor analysis (KMO=0.757, Bartlett-test p=0.000). The results properly represent the facts mentioned above. According to the Kaiser-criteria, the analysed variables could be combined in one factor which explained 53.1% of the original variables' variance. By increasing the number of factors to two, the explained variance fraction could be raised above 70%. However, the two factor analyses have the same results as the one factor analysis explained previously, therefore, in this study we set aside the increased factor number. Factor scores were assigned to factors using the regression method.

Table 5

Factor variables and factor weight of environmentally-conscious consumption (n=494)

Factor variables of environmentally-conscious consumption	Factor weight
I choose comparable products which have an environmentally friendly trademark or label.	.825
Whenever I can, I choose bio food originated from controlled ecological producers.	.748
I prefer to choose refillable packages to reduce waste.	.741
I do not accept the free plastic bags offered in supermarkets.	.692
I try to buy energy-saving household appliances and bulbs.	.654

For companies, purchase-motivation is another exciting attitude besides environmentally-conscious purchases. We asked the respondents to evaluate companies regarding to what degree (1="not at all", 5="extremely") their social activity inspired them to purchase products or services.

The main conclusion of *Table 6* is that CSR gave no extra motivation to purchase a product/service from a company for most of the respondents. Local residents mostly do not want to "refund" the extra inputs received with their purchase that are used for community goals. None of the activities reached the average value of 3.00. Local community development and environmental consciousness were at the "top" of the average list. Therefore, mostly these kinds of social activities could mean a market advantage – to a limited extent – for local residents.

A strong correlation was observed per pair between some purchase-motivation variables (in some cases Spearman Rho was between 0.642 and 0.906, p=0.01). Therefore, variables could be combined into one factor with a main component method which explained 80.27% of the variables' total variance. From here on, we will call this the purchase-motivation factor (KMO=0.929, Bartlett-test p=0.000).

Table 6

Purchase-motivation effects of some CSR activities among local residents

Social activities by companies	The answers'…			
	mean	std. dev.	median	mode
Improve local public areas (n=472)	2.53	1.396	3.00	1
Environmental consciousness (n=471)	2.53	1.432	3.00	1
Support educational establishments (n=472)	2.36	1.138	2.00	1
Support foundations, charity (n=472)	2.25	1.319	2.00	1
Communication of social problems(n=470)	2.24	1.298	2.00	1
Support cultural institutions, events (n=473)	2.21	1.248	2.00	1
Support sport clubs, sport events (n=472)	1.88	1.156	1.00	1

There were two factors which declared the responders' attitude to sustainability where the companies were involved. The "sustainability conscious consumption" factor mainly declared *generally* how environmental consciousness appeared in their consumption decisions. "Purchase-motivation" factor rather showed how often they demanded products from a *certain company* that perform some CSR activity. Obviously, there was an overlap between the two factors; however, they did not contain the same variables. Between these two factors there was a significant (p=0.01), but weak (r=0.162) correlation. A distinction must be made between the explanatory power of these two factors. The environmentally conscious consumption factor used during the factor analysis explained 53% of the used variables' variances. Meanwhile, the purchase motivation factor explained more than 80% of the original variables' variance.

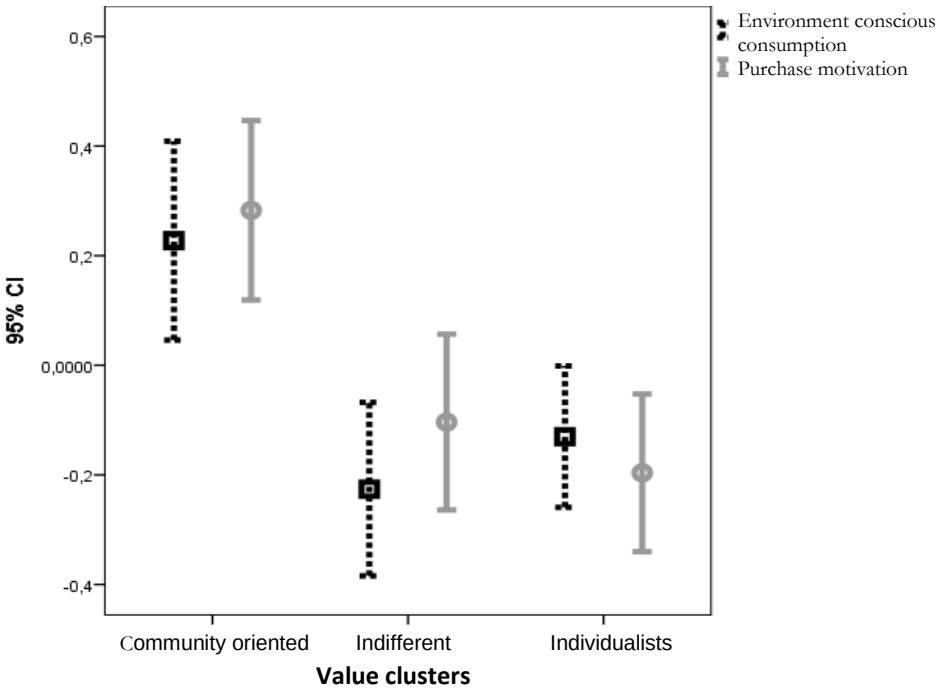
We are aware of the fact that the mentioned variables (that determined factors) did not get high value from respondents. In the followings, we demonstrate whether differences can be traceable among different value cluster members ("community oriented", "indifferent", "individualists"). Therefore, the factor means of clusters and 95% confidence intervals were analysed first, as *Figure 1* shows.

According to *Figure 1*, it is obvious that community-oriented groups stood out from the three clusters concerning environment conscious consumption and purchase motivation. Further on, variance-analysis was used to analyse whether

mean differences were significant and to find out where significant differences exist between clusters.

Figure 1

Factor means and confidence intervals of value clusters



In case of the analysed dependent (factor) variable, a variance analysis had two conditions: normal distribution and variance homogeneity could not be proved. Apart from that – referring to F-probe robustness – results of variance analysis were demonstrated in our study. At the same time, in this case, non-parametric and comparative methods (Mann-Whitney test, K-S test) – similar function with F-probe – confirmed the result of variance analysis.

According to the results of variance analysis, significant differences were observed among cluster means concerning environmentally conscious consumption ($F=9.236$, $p=0.000$) and purchase motivation ($F=11.126$, $p=0.034$). The "place" of difference was identified with Tamhane T2 post-hoc probe. Apparently, factor means of community oriented cluster significantly differed from factor means of the indifferent and individualists. Neither factor variable significantly differed between the group of indifferent and individualist. *Table 7* summarizes the numerical results of post-hoc tests.

These analyses confirmed that purchase motivation regarding companies' environmentally conscious consumption and CSR activity was above average

among community oriented individuals. From this aspect, the individualist and indifferent cluster could not be differentiated. Preferring individual life quality above the average did not indicate additional motivation to prefer environmentally friendly products and companies who perform CSR activities.

Table 7

Post-hoc test (Tamhane T2) results of analysed factor variables by value clusters

Dependent variable	Independent variable (I)	Independent variable (J)	p (sign.)	Difference of means 95% CI	
				Lower Bound	Upper Bound
Environment conscious consumption (n=480)	community oriented	indifferent	.001	.161	.732
		individualists	.003	.103	.627
	indifferent	individualists	.816	-.327	.165
CSR purchase motivation (n=461)	community oriented	indifferent	.002	.113	.667
		individualists	.000	.216	.743
	indifferent	individualists	.795	-.171	.350

According to our results we demonstrated that mostly environmentally oriented residents were open to environmentally conscious consumption and CSR activity-based purchase. In the followings, we introduce how this group was different from the other two clusters regarding other features. During the comparison, we concentrated the two groups into one group ("individualists" and "indifferent"), because we experienced that these two groups had the same attitude towards our questions.

Demographic background variables (sex, age, family status, financial status) had no important effect on community orientation. The only verified statistical effect was the education level, but the degree was negligible. No difference was experienced among the groups regarding settlement satisfaction.

In the second step, we analysed whether the community oriented cluster members differed from the other two groups with regard to attitudes and mentality for internal, environment, sustainability and nature conservation that had not been analysed yet. Fifteen questions ("how much do you agree" type questions) were asked about sustainability and human-nature relationship attitudes. Similarly as before, 13 questions were concentrated in factor with the same methodology. Four factors were differentiated based on the Kaiser-criteria, which explained the 63.85% of the 13 variables' variance. *Table 8* shows the relationship between factors and the original variables.

The "Ecosensitivity" factor shows concerns about the balance of nature and the damaging effects of human activity. "Technological optimism" shows trust regarding human knowledge and the inventiveness which enables mankind to

control natural processes. The "resource optimism" factor shows trust in the unexplored reserves of the Earth. We called the last factor "Problem denial" to express the belief that humans can intervene "unpunished" in the natural processes in order to satisfy their needs.

Table 8

Rotated component matrix of environmental attitude factors

Variables	Eco-sensitivity	Techno-logical optimism	Resource optimism	Problem denial
Nature is sensitive and can be easily unbalanced.	.779	-.095	.177	-.093
If Humanity disturbs nature, it often causes catastrophic consequences.	.764	-.043	.188	-.049
If things keep going this way, we will face a huge ecological catastrophe.	.694	-.025	.014	-.206
Mankind simply treats nature badly.	.689	-.317	-.055	.087
Plants and animals have the same rights to exist as humans.	.608	-.079	.288	-.218
Mankind is inventive enough to stop the destruction of the Earth.	-.003	.822	-.105	-.168
The natural balance is strong enough to handle the effects of modern industrial societies.	-.233	.687	.304	.213
Mankind will learn enough from nature to successfully control it.	-.199	.680	.399	.140
Humanity is entitled to have domination over nature.	-.183	.637	-.134	.522
The increase in population will slowly reach the limits of Earth.	.143	.028	.751	.068
The Earth has lots of natural resources if we learn to use it.	.262	.079	.713	-.102
The so called "economic crisis" mankind is facing is considerably exaggerated.	-.196	-.012	.083	.817
Human have the right to change nature for their needs.	-.037	.573	-.143	.607

In case of three factors out of the four, there was no significant difference between "community oriented" and the concentrated group (when $p<0.05$). Ecosensitivity showed different results: "community oriented" factor mean was 0.18 (n=165, std=0.935), while the cumulated average of the other two groups was -0.066 (n=280, std=1.01). The standard deviation was significant when $p=0.011$ ($F=6.49$). The factor was not a normal distribution; therefore, the deviation of factor values between the two groups was tested with a Mann-Whitney rank probe. In this case, significance level was on $p=0.013$. With less strict significance level, differences could be observed about "Problem denial": "Problem denial" factor mean among "Community oriented" was -0.120 (n=165, std=1.000), while among other responders it was 0.067 (n=280, std=1.005). According to the variance analyses the significance of mean differences was $p=0.059$ ($F=3.582$), while based on a Mann-Whitney rank probe, the differences of factor values was significant when $p=0.086$. The difference of the rest of the two factor values' ("Technological optimism" and "Resource optimism") significance level was much higher (either using std. or rank probe).

CONCLUSION

Based on our results – and in our opinion – a more important message can be learnt for participants of the economy and especially for company sector. This survey showed that environmentally conscious consumption and CSR activity-based purchasing was not typical among respondents. From the aspect of companies we can say that CSR – and environment responsibility, too – was not recognised in the south catchment area of Lake Balaton in the purchases of local residents.

Respondents who considered community values more important than the average had higher willingness for environmentally conscious consumption and purchase of products from companies with CSR activity. Community development and community value sensitivity increased the precondition to increase environmentally conscious consumption. We have seen that it was about "high level" community values which were above the values of individual life quality and utility.

To incite sustainable and environmentally conscious consumption, individual value emphases have weaker results than community level interests. To maintain the CSR activities for long term results instead of simply targeting individual customers, communities should rather be involved as partners to improve social-environmental problem solving. This would have direct results. Individual values and utility – which are favoured by economics and management and business administration – have less importance as an incentive factor in company and resident collaboration. The formation of – social and environmental – sustainable production-consumption alliances requires strong identity and active community. They are not maximizing their individual utility/yield, but their "right/correct" accepted values instead.

Special features of respondents in "community oriented" group could not be determined by easy identifiable demographic data. Members of the community

oriented cluster rather differed in attitudes about nature and human relationships compared to the other two clusters. From these attitudes mostly ecosensitivity could be distinguished. The main feature of community oriented residents was that they were afraid of tragic and catastrophic consequences about human intervention in nature compared to other respondents. Problem denial was also not typical for these cluster members, but at the same time, their trust in human knowledge, technology and resource reserves on Earth was similar to other responders. Therefore, the cluster members could be partners in CSR actions – that gave concrete answers to environment issues – based on their concerns about nature.

REFERENCES

Brugmann, J., Prahalad, C. (2007): Cocreating Business's New Social Compact. Harvard Business Review, 85. 2. 80-90. p.

Buday-Sántha, A. (2008): Balaton Region. Tér és Társadalom, 22. 4. 43-62. p.

Commission of the European Communities (2001): Green Paper - Promoting a European framework for Corporate Social Responsibility. Brussels: Commission of the European Communities.

Coppa, M., Sriramesh, K. (2011): Corporate social responsibility among SMEs in Italy. Public Relations Review, 39. 30-39. p.

Durmaz, V., Ates, S., Duman, G. (2011): CSR as a tool to cope with economic crises: The case of TEI. Procedia Social and Behavioral Sciences, 24. 1418-1426. p.

Elkington, J. (1998): Partnerships from cannibals with forks: The triple bottom line of 21st-century business. Environmental Quality Management, 8. 37-51. p.

Friedman, M. (1970): The Social Responsibility of Business is to Increase its Profit. The New York Times Magazine

Jensen, M. (2001): Value Maximisation, Stakeholder Theory, and the Corporate Objective Function. European Financial Management 7. 3. 297-317. p.

Kim, S., Lee, Y.J. (2012): The complex attribution process of CSR motives. Public Relations Review, 38. 168-170. p.

Kotler, P., Lee, N. (2007): Corporate Social Responsibility. (In Hung) Budapest : HVG Kiadó Zrt.

Mintzberg, H., Simons, R., Basu, K. (2002): Beyond Selfishness. MIT Sloan Management Review 44. 1. 67-74. p.

Molnár, G., (2007): Introduction of the current economic situation of Lake Balaton, the objectives of creating Balaton Economic Forum. (In Hung) [online] <URL: http://www.balatonregion.hu/bpp/ufiles/dok/418/1/1/Dr_Molnar_Gabor_EA.pdf> [16-12-2013].

Péter, E., Keller, K., Birkner, Z. (2011): Opportunity or Economic Pressure? Situation Analysis of Enterprises in the Lake Balaton Resort Area. Regional and Business Studies 3. 1. 319-323. p.

Polák-Weldon, R. (2012): CSR as a new priority of the management. (In Hung) XXI. század - Tudományos Közlemények 27. 283-293. p.

Pouliopoulos, L., Geitona, M., Poulipoulos, T., Triantafillidou, A. (2012): Managers' Perceptions and Opinions towardsCorporate Social Responsibility (CSR) in Greece. Procedia Economics and Finance 1. 311-320. p.

Vízügyi és Környezetvédelmi Központi Igazgatóság (2010): National implementation of the Water Framework Directive. (In Hung) Vízgyűjtő-gazdálkodási Terv. Balaton részvízgyűjtő.. Budapest : Környezetvédelmi és Vízügyi Minisztérium.

Corresponding author:

Arnold CSONKA
Kaposvár University, Faculty of Economic Sciences,
Department of Corporate Economics and Management
H-7400 Kaposvár, Guba S. u. 40.
email: csonka.arnold@ke.hu