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STUDIES

ENVIRONMENTAL AWARENESS: ATTITUDE OR ACTION?

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Abstract: Our research examined in which extent the social attitude and the actual acting, respectively paying willingness match on the area of environmentalism protection, more specifically on the area of selective waste collection. The results revealed that the environmental legislation, investments do not always get support from the inhabitants. Despite the overall social support of the implementation, but not all specific – financial and application – aspects are supported widely. Besides the main hypothesis, we also examined aspects influencing the acting and paying willingness. Based on the research results one might conclude that the two strongest influencing factors are access to information and using democratic opportunities. Age plays a significant role as well: youth and elderly are less motivated than middle-aged. Our hypothesis of the social distrust from the past being one of the most important obstacle to acting has been proved. Contrary to our hypothesis this cannot be significantly influenced even by sanctions. Distrust in the other members of the society has a strong influence on the acting and paying willingness. Based on the results, one might assume that the drive of environmental acting is mainly the social solidarity towards future generations. This assumption is supported by the fact, that families with children have a more active environmental awareness. Religion and gender play less influence.

Keywords: social solidarity, social act, selective waste collection, conditional evaluation, payment willingness, acting willingness, environmentalism, environmental attitude

INTRODUCTION

Environmental attitudes have been subject to a significant change in the past few decades. More and more risk factors have been appearing in the expectations regarding healthy environment due to the results of developed technical tools, correlations of scientific works and the appearance of new risk sources. The increasing pollution of the environment forces people to review their relation to nature and the economy.

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While ancient societies' economies did not endanger ecosystems, modern societies do threaten them.

According to Bacow and Wheeler (1984), people's need for security explains the growing importance of environmental protection. They say that supporting technical improvement is not necessarily a priority in modern societies, since industrialization and the economic revolution raised local and global risk factors. Theories are visible in everyday political life. Effects of previous years, which were or seemed irrelevant previously, cumulate, new technologies bring new risks (nuclear plants) and solving specific local environmental problems holds a great deal of risk for small groups (landfills for hazardous waste).

Literature suggests that a whole new perspective has evolved taking into account people's needs and interests and also having concerns regarding economic activities.

As a result of the cooperation of the small political elite authorized by the people and the scientific elite (familiar with the environmental processes and their negative effects) new laws and rules are being adopted.

In Europe and especially in the UK, political and public discourse were both thematized by the *Stern Review Report* (by author Sir Nicholas Stern), on global warming questions ().

At the same time, environmental movements became more and more active. As a result of the above mentioned phenomena, the environmental issue is continuously on the agenda.

These processes may suggest that there is a continuous change of values in society, the absolute values of consumer society are questioned, and there is a new lifestyle developing that prefers long term, sustainable and secure attitudes towards the environment.

In Hungary, the political and professional background of the environment was both seceding from the society and after the change of regime environmental protection was a minor issue. The lack of channels and forums impede spreading information and legitimizing decisions. Most of the decisions on specific fields are made upon professional bases, avoiding social impacts and their support.

Missing channels and forums result in lack of information and illegitimate decision making. Decisions are made on a professional base, without taking the future social impacts and further public support into account.

Environmental protection activities became isolated, aiming to fulfill social needs with maximizing profit. It not only imposes duties and tasks on economics but also on society. The fact that significant changes came very instantly in Hungary following the EU accession, poses a problem. Unlike in other Western European countries, Hungary had to speed up processes such as setting up the legal background of environmental protection, establishing the institutional and investments systems, and had to deal with current global issues (i.e. global warming, GMOs, sustainable development) at the same time.

The formation of environmentally friendly attitudes takes a lot more time and a slower process of socialization; it cannot be forced. Though in Hungary, public opinion focuses on the global effects of global warming, most people are not even familiar with basic environmental issues and activities (i.e. illegal waste disposal sites related attitude, separate waste collection, treatment of hazardous waste).

Introducing economic regulators aims to affect the consumption patterns of society through certain companies. Profit maximizing activities of market actors might confront economic regulators if they fail to meet the needs of society or cannot follow conditions. Market actors can only follow regulations if they correspond to the conditions of profit maximizing.

In order to define the waiting period of implementing new regulations it is necessary to learn the environmental awareness-related attitudes of society.

Besides the facts and figures it is essential to know the parameters of public attitude towards the issues mentioned above.

Access to information, freedom of press and the communications and information revolution – results of the change of the regime – resulted in a huge mass of information to deal with – environmental issues have not really had the chance to play a major role.

As a result of democratic elections elected MPs, mayors and local governments are responsible for – among others – environmental issues.

In the meantime, the majority of society do not practice their democratic rights provided by new regulations and treaties, and do not even try to get informed regarding public/state issues. The traditional patriarchal role of the state has remained the same; people still expect the state to act regarding environmental problems. They still underestimate their personal role in public matters.

The situation got more complicated since NGOs have not tried to increase their members and public support. Their primary aim is to learn and follow Western European best practices, experiences, and strategic directions – using state resources. Therefore civic movements generally lack public support and social legitimacy.

Due to the reasons mentioned above, the Hungarian Parliament does not have political parties representing "green values" and the public support behind them.

According to our opinion, the upcoming few years will bring significant changes in the Hungarian infrastructure and the regulations related to environmental protection (the process has already been pending in the past couple of years), not answering to people's but to global expectations and scientific recommendations although it does have negative affects on investments and mechanisms regulating economy which do concern the majority of the society.

According to our hypothesis, we are barely aware of people's attitudes, so methodology has to be fine tuned in order to solve controversies between previous and recent study results and reactions in reality. In this study we tried to explore public attitudes using conditional evaluation.

Using this method, we want to point out and emphasize the fact that decisions based on professional grounds lack wide public support. This proves that social solidarity is very low when talking about environmental protection. We are testing this statement by studying the social acceptability of selective waste collection.

Our aim is to point out the fake image of selective waste collection's social acceptability. Our hypotheses regarding explanatory factors are formed by using consequences of Hungarian social circumstances and the theory of social solidarity.

THE AIM OF THE STUDY

Legislative authorities and beneficial actors of investments often find harmonizing activities of environmental protection-related investments and the public acceptance of EU integration-related changes of regulations a waste of money. They claim that since environmental issues are really popular in Hungary, so they do have public support, they do not need any further acceptance.

We can see the similarity of the health care and the pension reform. In both related cases, decision makers were convinced for decades that good results of opinion polls and the need for renewal are enough to suppress the patriarchal role of the state. This study aims to modulate recent contradictions of the professional work regarding environmental issues. We point out through the practice of selective waste collection that scientific works cannot ignore the results and aspects of social science researches and the conflicts coming from disregarding them. The problem is that environment-related regulations and investments ignored the perspective of the actual conditions of society's environmental awareness. In the results of the research personal attitudes and social acceptations are rather mixed.

Decisions are usually based on a professional base, without knowing the social perspective and having the public support. Nevertheless, consequences of the decisions imply to members of society both on a short and long terms. Therefore members of the society have to suffer the results of these measures, resulting in serious conflicts.

We point out through empirical results that people's environmental protective attitudes do not stand on a well-founded base.

The historical background and the lack of information channels results in that the environmental issues are popular but not strongly supported.

METHODOLOGY, RESEARCH TIMING

The researches examining the Hungarian population's environmental consciousness have been undertaken primarily before the change of the regime, and later before joining the European Union. Not only the domestic data were evaluated, but international comparisons have been made to Europe and to our region. The primary research topics were the cognition of the gravity of the environmental problems, the exploration of their priorities, and the classification of the environmental state (and its changes). The judgment and measurement of the possibilities to act and the cognition of the factors influencing the development of the environmental consciousness received smaller significance. Data provided a good landmark to the cognition of changes throughout the years, however, the opportunity was not taken into consideration that the answers may have shown the attitudes connected to the topic, and not to the real individual support and attitude.

The starting point of the present research was that there is a significant difference between the social norm level, which is connected to the environment protection, and the individual real support. This difference is not revealed by the general attitude

questionnaires. Contingent valuation proved to be a reliable method to eliminate this principal mistake as well as to measure the difference. The literary overview pointed out that as a result of expert negotiation (based on an NOAA invitation), under certain conditions the method meets the reliability criteria requirements ("can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive use values." Federal Register 4601, January 15, l993). in the start shirt point of the judicial process of damage assessment, including lost passive use values." Federal Register 4601, January 15, l993). We compiled the questionnaire, finalized the research plan observing the viewpoints requested by the methodology.

The research took place in March 2006, recording data directly of a representative group of 1500 people nationwide. The research was performed by Marketing Centrum Ltd.

We outline the results of the research to the comparison of previous research results.

HYPOTHESIS – RESULTS

The hypotheses were set on the basis of the literature on social solidarity, collective action and additional logical deductions.

During the assessment we put emphasis on two areas. Firstly, we tested whether there is real difference between results of the general attitude questions and the results of actions or paying willingness. Secondly, with the help of the new method we analyzed who can be considered to belong to the environment-conscious group, and how we can describe these groups.

Attitude and Willingness to Pay and to Act

The empirical research verified the hypothesis that the popular support for selective waste collection shows a significantly lower level of willingness to act or to pay than it could be deduced based on the attitude questions.

Although 87% of the population agrees that selective waste collection has to be widespread as soon as possible, only 72% considers selective waste collection obligatory on themselves. The level of real support is even lower. The introduction of selective waste collection carries an extra cost that has to be paid by the users. According to preliminary calculations it would mean 700[1] HUF (around 3 Euros) on average, but only 23% of the households would be willing to pay. Based on the answers – if we define selective waste collection with the collection of at least 3 packaging waste fractions – only 15% of the households make selective waste collection currently. In order to avoid the disturbance of exterior circumstances – where there is no opportunity for separating – the supposed actions are also examined.

1 Based on the indicative calculation of KvVM 2005.

The estimate of 27% of the population would be willing to collect at least 3 packaging wastes separately in the future.

Table 1. Summary of Attitudes and Willingness to Act and to Pay in connection with Selective Waste Collection [2]

	Public	Magnitude of difference from norm (%point)
Hypothetically agree	87%	+15
Consider compulsory to themselves (norm)	72%	0
Present selective waste collection – declared	15%	-57
Supposed action (collection of 3 different waste fraction)	27%	-45
Willingness to pay on real amount (700 Ft)	23%	-49
Willingness to pay on some amount	56%	-16

In the case of other researches such three-layer data are not available, but certain data about similar questions are comparable with the results. In the research of TÁRKI (1993 ISSP) 50% of the respondents answered that they never selected waste. 18 % declared that they always and 12% declared that they often select their waste. However, there is no data whether this means the selection of one or more kinds of waste. There are questions in the very same research about willingness to sacrifice. A five-grade scale showed to what extent the population is willing to pay higher prices, more tax or to what extent they are willing to bare a certain decline in their living standard for the sake of environment protection. As early as in the 1993 research rejection was detectable. Higher prices would have been accepted by one-third, higher taxes by one seventh, whereas decline in living standards would have been accepted only by one eighth of the people asked. Researches made in 1996 showed further decrease in willingness to sacrifice. The three categories fell to 15%, 5% and 3 % respectively. Parallel to this, full rejection doubled.

From the point of view of selective waste management several other previous experimental programmes proved the importance of sacrifice and – at the same time – the low level of willingness to sacrifice from the side of the people (e.g. Sopron, Sátoraljaújhely, Balatonfüred, Debrecen).

These initiatives failed because selective waste collection was supported by a reduced tariff (e.g. 20% discount on household garbage). With the end of the programme, it was impossible to maintain the system, to fund the costs (Vári et al. 1997; Gentischer et al. 1997).

Hypothetical research in the region of Gödöllő, however, contradicts these practical data. 42% considered the waste tariff as high (without the selective costs), yet 78% declared that they would be willing to select waste. Only 14 % declared that they would do selection only if it meant lower tariff for household garbage, and only 8% rejected it totally.

2 See summary chart in the *Appendix,* presenting the results for questions *1a–f.*

Both the results and the reports well represent the difference between attitude and real support (Gentischer et al. 1997.)

The main hypothesis of our research, i.e. that there is tension between the attitude and the real willingness to pay, proved to be correct. Compared to 1993 and 1996, Hungary's population has marked a slightly stronger willingness to sacrifice, but this difference may result form the different measurement methodology.

We were also interested in the reasons of environment consciousness attitude. We examined 12 sub-hypotheses.

Definition of Environment Conscious Group

We introduced three dependant variables for further analysis. We separated the present practice in connection with selective waste management (real action) and the willingness to act in case of introducing a selective waste management system (supposed action).

With the help of the indicator of real and supposed action, we introduced a simple index, which represents the figures of waste collected selectively/to be collected selectively. Unfortunately, we could not pay attention to the appearance of a certain kind of waste in the given household. Obviously, one has to bear in mind that a higher number of different types of waste collected selectively shows the environment consciousness of an individual only to a limited extent.

Willingness to pay (third dependant variable) was measured by the amount of money one was willing to pay.

Hindering factors setting back other collective actions primarily in other areas (free-riding, low efficiency check, lack of sanctioning, state redistribution that may be misunderstood) belong to the first sub-hypothesis. In the present research, we had the opportunity to check the influence of public trust and sanctioning on environment consciousness and on the bearing of expenses.

Influential Force of Public Trust

Preparing the hypothesis, we assumed, that "free riding", conditioned during the communist era, disobeying rules and deluding the authorities have become an acceptable norm, independently of whether sanctions and checks existed. Kahnemannm, Knetsch and Thaler (1991) pointed out that the group reacts emotionally strongly in case of non-cooperative behavior. Should these strong emotional reactions lag behind in course of the years – as control is not in the group's hand – "non-cooperation" would remain as a typical form of activity. In this case, neither trust nor co-operation is typical inside the group (Uzzi 1997). Lindenberg (2002) emphasizes that collective consciousness is necessary for co-operation; the individuals need relationship with the outer world, where they get continuous feedbacks on the solidarity frame. If this framework does not exist, non-cooperation is increasing. According to Lindenberg, a minimal group number is necessary to stabilize the solidarity framework. This is also proved by Elster (1995),

according to whom if it is missing, cooperative people are not guaranteed. In the research of Ockenfels and Weimann (1999) comparing the citizens of East and West Germany, contrary to expectations, people from the latter were more solid (sympathetic), most probably because of the reasons mentioned above.

Results of the research show that Hungarian people are rather skeptical about the outcome of social activities. Most of them (61%) think that most of the people act in favor of the community, of the country only in case of disaster. In the field of environment protection this portion is even higher. Two thirds of the population thinks that they themselves act in favor of environment protection, but in vain, as others do not.

In the research of Fact (Pécs, Hungary, 1993) people were asked "How much can you rely on the following people in case of environmental problems?" and were asked to use a scale of 1 to 5. They evaluated themselves at an average of 3.66.

In an international research by TÁRKI (ISSP 1993) public attitudes were measured with two statements: "It is difficult to do anything for the environment for me and for people like me." (1) "I do for the environment what I can, even if it costs me time and money." (2) Agreeing with both statements 20% and 11% respectively, the Hungarian population is internationally in the leading group. A higher result came only from the Czech Republic, Bulgaria and Russia. Agreement with the second statement was also high (apart from the above mentioned countries) in West and East Germany, Israel and Japan. This research confirms that Hungarian people are rather pessimistic about the environmental activity of other Hungarians. They highly (40%) agreed with the statement that "people do not care even about their immediate environment".

Table 2. Connection between Public Trustfulness and Environment Consciousness (People giving real answers, Averages)

Which sentence is the most typical to the one asked?	Executed action	Supposed action	Willingness to pay (HUF)
I do a lot for environment and as I can see, so do other people.	4.46	8.22	384
I do some things for the environment, but I can't see the results as others do nothing	3.53	6.99	314
I do nothing for my environment. There is no sense of doing anything, until others do not start doing something	2.76	4.83	171
Total:	3.42	6.67	285

The general confidence deficiency has demonstrable influence on the executed and supposed activity. In respect of social environmental attitudes, optimistic opinions come together with a higher proportion of executed and supposed action, as well as more willingness to pay. Presumably, if the process is launched, more people will join environmental activities. As a result of a slow process, a critical mass is expected to be formed from the environment-conscious population, which ensures the massive and undulating spread of selective waste management.

Influential Force of Sanctions

Regarding the community activities, we find it important to measure the influential strength of sanctioning. Our starting point was that the control system is currently low in efficiency, which is acknowledged as natural by the population. As a result the level of the collective activity is also rather low. Olson (1965) and Lindberg (2002) believe that sanctions and control are extremely important in respect of collective activity. If the existing sanctions and control are considered to be low-level, collective activity will lag behind, observing the rules will become less likely, thus social skepticism may become typical.

A positive, but weak connection can be demonstrated between executed/supposed activities and the degree of sanctions. This means that people saying that more severe punishment should be imposed are more conscious about the environment and therefore more willing to pay. This result differs from the expectations in our hypothesis. It seems that people underestimating the present sanction-system are more conscious about the environment.

Table 3a. Connection between Attitudes towards Sanctioning and Environment Consciousness (People giving real answers, Averages)

Which statement do you agree with the most?	Executed action	Supposed action	Willingness to pay (HUF)
Many people act illegally (litter, deposit waste illegally), in spite of the efficient and frequent controls (12%)	3.63	6.92	349
Many people act illegally, because control is not efficient. (70%)	3.50	6.80	294
Only a few people act illegally, because control is efficient (6%)	3.27	6.52	258
no answer/don't know (13%)	2.79	5.77	184
Total	3.42	6.67	285

Table 3b. Connection between Attitudes towards Sanctioning and Environment Consciousness (People giving real answers, Averages)[3]

	Executed actions	Supposed actions	Willingness to pay (HUF)
Should be sanctioned more severely (20%)	3.81	7.33	340
Agree with the degree of sanction (58%)	3.38	6.75	297
The sanction is too severe (16%)	3.25	6.20	200
No answer/don't know (5%)	2.83	4.73	206
Total	3.42	6.67	285

3 Compiled on the basis of the answers in questions *48/4a* and *49/4a*, see *Appendix*.

The Effect of Information on Willingness to Act and Pay

Among research made in Hungary, Csontos, Kornai and Tóth (1996) have shown that higher levels of education helped shifting from the normal routine, the status quo. Thus, we can argue that people understanding the necessity of their action are more open to cooperate, as the warm glow effect can dominate more strongly. Testing of the factors influencing environment consciousness, we experienced stronger connection if the person was better informed. We received strong correlation values not only in the case of the executed and the supposed activity, but also in the case of willingness to pay. We can declare that lack of information is one of the main reasons of low environment consciousness in the society. Though it is not the only explanation as well informed people are not necessarily willing to act.

Results show that Hungarian people are not satisfactorily informed even about the basic facts of selective waste management.

7% of the people asked were unable to name (spontaneously) but one type of waste that should be collected selectively in the households. In most cases, 2–4 types were mentioned (18–19% each), mainly plastic bottles, paper and glasses. Hazardous batteries, accumulators were mentioned only by three out of ten, and the handling of expired medicine is not generally known (21%). In the research we also asked the respondents to mention as many hazardous wastes as they can. Lack of information emerged even more severely than in the previous case: more than half of the population was able to name up to 2, three quarters of them maximum 3 types of hazardous waste. One in 10 could not name one single type.

The strongest connection between information and environment conscious preferences can be detected when we compare our dependant variables with the types of waste that should be collected. From this point of view, however, the correlation coefficient (.326) can be low, according to our evaluation (i.e. it shows known, but not executed actions). Knowledge about hazardous waste is mostly in connection with executed actions.

Table 4. Connection between Being Informed and Environment Consciousness
(Perason's correlational coefficients, Significance quotient in brackets)

	Executed action	Supposed action	Willingness to pay (HUF)
What should be collected selectively?	.326 (.000)	.240 (.000)	.211 (.000)
What is hazardous waste?	.232 (.000)	.175 (.000)	.185 (.000)

Knowledge concerning selective waste management was not measured independently, but the demand for environment information was, in the Eurobarometer 1993 research. Just like in other EC countries, Hungarian people require better information. Although the given alternatives may have predicted the answers, the interesting experience of the Hungarian research is that several respondents could not decide whether they wanted to bear the correct information

about the environment. The research also pointed out that 21% of the Hungarian people would believe nobody when it comes to the environment. This proportion exceeds even the most pessimistic British results (13%). Scientists and researchers are believed to be authentic, followed by civil organizations. This shows a reverse tendency in the EC countries.

The Influential Force of Media, Openness to the World

In connection with environment protection, the Hungarian media – primarily the electronic ones – place a greater emphasis on catastrophic events that can be presented with deterrent photos. This can guarantee that the programme is widely watched or read. From the studies of Ostrom (1990), Raub and Weesie (1990) we can learn that negative vision of the future helps co-operation. From this we can draw the logical conclusion that media consumption habits largely define the inclination to act to avoid the next possible catastrophe.

Identification of hazards mainly belongs to the monopoly of politicians, experts, or the ones who declare themselves as such. You can often see partial interest behind these manifestations. Social control of the risks could come true without media contribution. People sometimes overestimate extremely severe, but rather rare risks, whereas they do not know about frequent, but less serious risks. It is also due to media contribution (Füzesi and Tristyán 1998). According to a Gallup research (1994) 69% of the people find their information about environment mainly from television. The role of the press and the radio is subordinate.

The present research has gained similar results. 39% of the people declared that they regularly read daily newspapers, and approximately the same percentage stated never or very rarely reading it. E-media is more popular: seven people out of ten watch newsreel regularly, while only every second listens to the radio news. We edited a main component evaluating news consumption.

Table 5a. Main Component Factor Weights of News Consumption
(Procedure: Principal Component Analysis)

	Factor weights
Reading newspaper	.621
TV news	.787
Radio news	.761
	Kept information quota: 53%

The degrees of the correlation between the variables are significant, but show rather low correlation. The reason for this is the wide consumption of electronic news, which results in low probability for the distribution of the environment protection preferences. If we take a closer look at newspaper reading habits, we can draw an important conclusion. People refusing to read the press have significantly lower environment preferences. It means that the frequency of press consumption does not,

but "openness" (or its possibility) has influence on attitudes. This connection – although with some restrictions – correlates with e-media consumption or refusal habits.

Table 5b. Connection between Newspaper Reading Habits and Environment Consciousness (Total number of asked, Average)

	Executed action	Supposed action	Willingness to pay (HUF)
Reads more daily newspapers every day	3.97	7.21	313
Reads one daily newspaper every day	3.59	7.05	285
Peeps into various daily newspapers	3.67	6.51	315
Reads daily newspapers occasionally	3.40	6.92	292
Nearly never reads daily newspapers	2.39	5.22	207

Naturally not only the media consumption frequency, but also the interest area receives an important influencing role. Respondents were required to indicate their level of interest in 20, mainly TV types of programmes. We could differentiate three main dimensions: public affairs–political programmes (mainly about economy, politics), educational–scientific programmes (nature films, scientific programmes) and entertaining, yellow press programmes (films, series, lives of celebrities).

Table 5c. Main Component Factor Weights of Public Interest (Procedure: Principal Component Analysis)

	Factor weight
Internal political news	.829
Crimes	.575
Economical news	.819
International political news	.825
Political debate programmes	.769
	Kept information quota: 59%

Table 5d. Main Component Factor Weights of Interest in Educational Programmes (Procedure: Principal Component Analysis)

	Factor weight
Nature films	.797
Historical films	.816
Scientific educational films	.875
Travel films	.844
	Kept information quota: 69%

Table 5e. Main Component Factor Weights of Interest in Entertaining, Yellow Press Programmes (Procedure: Principal Component Analysis)

	Factor weight
Cabaret, humorous programmes	.664
Adventure films	.717
Crime stories	.607
Life of celebrities	.609
TV series	.589
Music-dance shows	.700
	Kept information quota: 42%

The interest in public affairs shows the strongest relation – particularly in the dimension of the supposed action. Those less interested in political, public topics are less willing to act. We can see a similar connection with educational–scientific programmes. Action done is typical to the group of population less interested in yellow press topics. Although these are rather weak connections (Pearson's correlation coefficient does not exceed 0.2 limit), the correspondence backs our hypotheses.

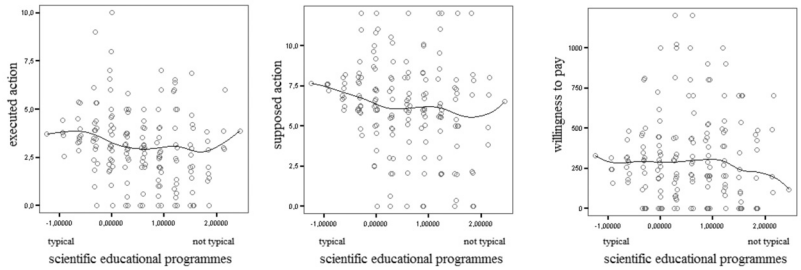

Figure 1a. Connection between Interest in Scientific Educational Programmes and Environment Consciousness

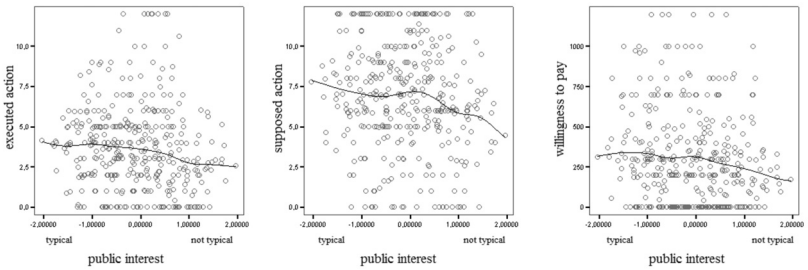

Figure 1b. Connection between Public Affairs Interest and Environment Consciousness

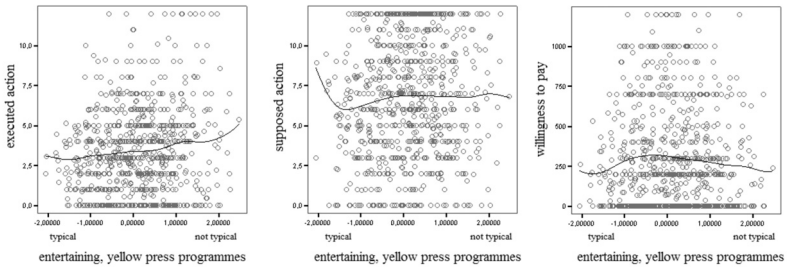

Figure 1c. Connection between Interest In Entertaining, Yellow Press Programmes and Environment Consciousness

The Influence of Lifestyle

Our initial assumption was that the ones who often engage in leisure activities are more active in and willing to act for environment protection. If the news cannot reach an adequately wide public, the chance remains for influence by personal experience.

We managed to separate four main activity dimensions with the analysis of the respondents' leisure activities[4]. The first dimension refers to the cultural habits (e.g. going to theatre, visiting museums). Social activities belong to the second dimension (visiting pubs, dance-clubs, etc.) The third dimension contains outdoor (hiking and sports) and the fourth home activities (video, computer).

Like in the case of media consumption, we found only weak links in connection with lifestyle (cultural, social, outdoor, indoor activity). It is mainly cultural consumption that shows correlation, while outdoor activities – where people get in close contact with nature, environment – have the strongest connection with willingness to pay. Interestingly, this connection is not stronger than in the case of couch potatoes.

The Influence of Personally Experiencing and Encountering the Problems

Professional sources verify that social solidarity is stronger when people encounter certain problems directly. During the research we have examined to what extent willingness to pay and to act is influenced by satisfaction with the individual environment and by encounter with illegal waste dumping.

In its International research of 1992, Gallup has investigated the public opinion on environmental conditions on three (local, national and global) levels. Hungarian respondents considered environment-related issues a lot worse on national and international levels than they evaluated their own local situations. Polish, Russian and South Korean results were quite similar to the Hungarian ones. In the case of these countries, the general rule of overestimating local problems and underestimating less

4 See *Annex 2a, 2b, 2c, 2d and 2e.*

distant difficulties did not apply. It is contradicted by the fact that researchers have explained different attitudes (depending on types of settlements) by the level of involvement. TÁRKI research of 1996 pointed out that we do consider polluting phenomena that we experience every day, a lot more important. In addition to this, Eurobarometer figures in 1993 showed that Hungarian respondents – compared to EC countries – were a lot more negative on environmental problems. Assessment regarding waste-related questions appeared to be extremely problematic in Hungary (38% vs 62%).

It is thus deductible that encountering the problem will only bring measurable results if the individual considers it as a negative personal experience. The question asked in our study has examined satisfaction regarding the closer and wider environment (such as residential neighborhood, sanitation, air and water quality or the general state of the environment). We have sorted the answers into one main component.

It is rather surprising that encountering the problems does not seem to affect environmental preferences: encountering the problems does not correlate with the willingness to pay or act. We have also measured the level of direct encounter with environmental problems by asking respondents whether their neighborhood had illegal disposal sites or trash dumps. The presence of trash dumps (28% (!) reported more than one illegal trash sites around their neighborhood) has only a weak effect on environmental consciousness. Means of supposed actions and executed actions significantly differ from one another and those who often have to face litter in their neighborhoods are potentially willing to act.

Table 6. The Connection of Environment Awareness and Illegal Trash Dumps in the Neighborhood of the Interviewed (All interviewed, Averages)[5]

	Executed action	Supposed action	Willingness to pay (HUF)
There are some trash dumps (28%)	3.70	7.21	301
There is one trash dump (16%)	3.52	6.80	297
No trash dump (43%)	3.37	6.48	283
No answer/don't know (14%)	2.93	6.18	255
Total	*3.42*	*6.67*	*285*

The Influential Force of Involvement in Public Affairs

Lack of environmental activity can originate from earlier social attitudes as well as from the young age of democracy. According to the hypothesis people's activity and requirements in public affairs have a positive effect on their steps towards environmental protection. Although the results were slightly different from practical experience (one fifth of the respondents said they would participate at a public hearing on environmental project/investment) the hypothesis has been verified in the case of all the three dependant variables.

5 Question regarding the raw data: Is there an illegal waste dump in your neighborhood?

Table 7. Connection between Participation at a Public Hearing and Environmental Awareness (Total and Average)[6]

	Executed action	Supposed action	Willingness to pay (HUF)
Certainly	4.15	7.92	401
Probably yes	3.90	7.11	305
Probably no	3.22	6.26	233
Certainly no	1.98	4.84	162
Nt/No answer/don't know	2.53	5.86	253

The Influence of the Age

Supposing that the former socialist policy had a negative influence on solidarity of the members of the society, our expectation is that the younger generation must be more sympathetic, reacts more sensitively to the environmental problems.

According to the research the result is just the opposite. It is not the younger generation that represents the green values. On the basis of the correlation coefficient, the age does not have an effect on either the executed or the supposed action. Only rather weak and converse influence is characteristic to willingness to pay. Nevertheless, the influence of the age can be detected. Projecting the results to diagrams it becomes visible that environment awareness is increasing in all three factors between 25–28 years of age. The level remains constant up to the age of 60. Retirement is a turning point. All three, especially willingness to pay, decrease radically. Although generational influence can be detected, a higher level of environmental awareness is obvious in case of people between 30–55 years of age.

The influential role of age to environment awareness has already been examined. Eurobarometer (1993) showed that age had a negative effect on sensitivity to problems. TARKI (1994) research contradicts this, showing that the younger generation considers environment pollution a "more serious problem". This was confirmed by a research among students: the environmental status of Hungary is estimated by an average 1.98 value on a scale from 1 to 5. (Students – Diákok, Fact Institute 1994). A research on influence of environmental problems on the individual of Gallup 1992 delivered similar results: young middle-aged people (31–45) are the most, and over 60 are the least concerned.

6 On the basis of question *23/9a* as seen in the *Appendix.*

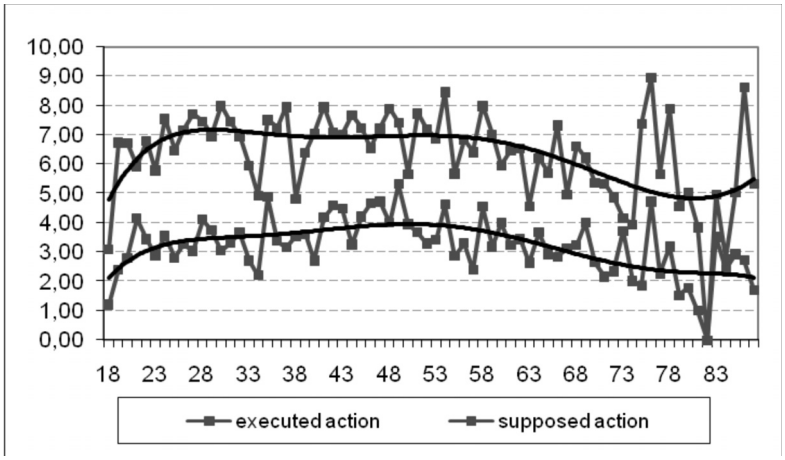

Figure 2a. Connection between Age and Executed as well as Supposed Actions (Total questioned and Average)

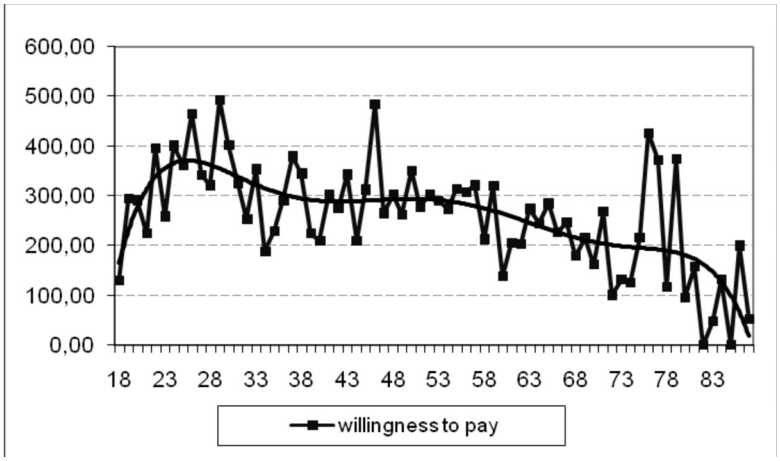

Figure 2b. Connection between Age and Willingness to Pay (Total and Average)

In 1993 and 1996, TARKI – leading a similar research – has come to a slightly different result. Results showed that with ageing the willingness to make sacrifices (paying higher prices or taxes, lower living standards) is decreasing. Collateral to this, the number of persons refusing to make sacrifices is increasing. Comparing and contrasting the results of the present and past research we can come to the conclusion that young people, open to the problems of environment protection of 10 years ago have been replaced by a young generation with similar attitude though less committed.

The Influential Force of the Family Income

When measuring willingness to pay, one must obviously take family incomes into consideration. Former researches have already made it clear that supporting environmental values can be connected mainly to the better-off. Thus, the result was evaluated on the basis of income level as well as property status.

According to a Eurobarometer research in 1993, sensitivity towards environmental problems has been positively affected by education and income. The Gallup (1994) results showed that people with higher education considered environment pollution a serious problem to a greater extent than the average. The above mentioned TÁRKI researches of 1993 and 1996 came to a similar conclusion: the better-off proved higher willingness to sacrifice and the poorer lower.

According to our research we have come to the conclusion that family income has a weak effect on preferences to collect waste selectively. The subjective opinion about the property status better supports the hypothesis on the connection between income status and environmentally aware attitude.

Table 8. Connection between Subjective Financial Status and Environment Awareness (Total and Average)

	Executed action	Supposed action	Willingness to pay (HUF)
Live easily	3.87	7.14	398
Get on well	3.63	6.98	348
Just make ends meet	3.39	6.36	248
Have problems every month	2.70	6.15	176
Live hard	3.43	7.20	116
No answer/don't know	2.91	7.10	169

Importance of Gender in Environment Awareness

We presumed that women showed higher sensitivity to social problems due to their social roles. We expected that social solidarity was higher in case of women, thus had to appear in the field of environment protection.

We felt supported by the Gallup research in 1994 that proved the fact that women considered the protection of the environment to a greater extent than average. In another topic we experienced that there is no significant difference between men and women in connection with the environment. This was supported by the TÁRKI researches in 1993 and 1996, which proved that there was no difference between genders in the case of willingness to sacrifice.

The results showed similarities with those of the TÁRKI research, as they did not prove our hypothesis.[7] The difference between men and women is negligible;

7 See *Appendix Table 3.*

moreover, apart from similar sensitivity, men are better at execution than women. As a final conclusion, we have to state that there is no significant effect of the gender either on executed or supposed action, or on willingness to pay.

Solidarity towards the Future Generation, the Role of Children in Environmental Awareness

One of the main messages of environment protection is that present activities have a great influence on living standards, health status or on the future generation. Thus we expected that the number of children in the family increases willingness to pay.

Our hypothesis about the connection between environment awareness and the number of children in a family has been verified. Especially the conditional action values were higher in families with children. In addition to the generation gap this fact ensures the starting point, according to which environment protection can function as the value of solidarity towards the future generation. Families with more children show up as more considerate in connection with environmental awareness in all three scales. Nevertheless, the number of children has a lower influence on environmental awareness.

Table 9. Connection of the Number of Children and Environment Awareness (Total and Average)

	Executed action	Supposed action	Willingness to pay (HUF)
Family without children	3.31	6.38	268
Family with children	3.65	7.27	320
Total	*3.42*	*6.67*	*285*

The Influence of Micro-level Solidarity on Macro-level Solidarity, Influential Force of the Settlement Type

The starting point was that belonging to a smaller community decreases the chance of increasing macro-level solidarity of individuals. We wanted to know how the above mentioned connection appeared when examining trust in people. We presumed that people trust others more if the micro-level relationships are stronger in the given community and vice versa. We found that on this level of attitudes we were wrong, though partial results can be observed: only in the case of inhabitants of Budapest and other cities of county rank did the willingness to act differ from the average. People living in the capital have a rather different level of trust from that of people living in major towns in the countryside, moreover, in a negative direction. That means that the communal trust level is much lower in Budapest, most probably due to alienation in the only ‘real’ metropolis.

Thus, further results did not prove the connection between micro- and macro-level solidarity in the field of environmental protection. The relationships require explanation of another kind.

In spite of the above-mentioned results, attitudes of environmental awareness have developed in different ways if we take people in different types of settlements into consideration. Taking selective waste management practice the best results come from cities of county rank (where possibilities of selective waste management are higher than average), whereas in small towns and especially in even smaller settlements, the result is worse. The supposed action is far more balanced, though significant difference can be observed between the capital and major cities in the countryside. It seems that willingness to pay is higher in the capital; the other settlement types do not show any difference.

Table 10. Connection of Settlement Type and Environment Awareness (Total and Average)

	Executed action	Supposed action	Willingness to pay (HUF)
Budapest (capital)	3.61	5.89	343
Country cities	4.07	7.23	266
Towns	3.31	6.71	272
Villages	2.99	6.76	274

Answers for the TÁRKI (1993, 1996) survey about willingness to sacrifice show that people grouped according to settlement type behave in a similar way: inhabitants of the capital and big cities are more supportive than those of small towns or villages. Other surveys also proved the difference between regions and settlement types in the field of environmental problems. According to Eurobarometer (1993) results, the solution of the problems is considered to be the most pressing by people living primarily in Budapest, in the metropolitan agglomeration and at Transdanubia (Dunántúl) while this counts less as a burning problem in the country's North-Eastern part. Researches by Gallup (1992 and 1994) showed similar results.

The Role of Religion

Based on a research by TÁRKI (1993, ISSP), János Szántó came to the conclusion that in the present Hungarian society environmental attitude can fall into four categories: practical view, "slightly ecocentric", "stronger ecocentric", and "technical optimist" ones. This typology corresponds fairly well to value-sociological results in Hungary. It proves that religiousness plays an important role in environmental attitude.

We assumed that solidarity appearing in religiousness may be connected to other fields of communal cooperation, e.g. environment protection. Analysis, though, contradicted this hypothesis. In contradiction with previous surveys we did not prove connection to the examined variables.

SUMMARY

The objective of the survey was to clarify that positive public attitudes do not automatically result in environmentally conscious behavior. According to our starting point positive answers to attitude questions reflect the social acceptance of the theme, but are not adequate to induce the individuals to act. It is not enough to know the objective of the environmental investment; each and every detail must be accepted and approved by the community.

Results of the research may lead to the conclusion that the most important objective in the field of environment protection is to inform the people, to ensure usage and publicity of democratic possibilities. With emphasizing environmental education, the environmental awareness should be transmitted to the young target group. One of the most significant barriers of action is the mistrust of the previous years, which – in spite of our hypothesis – cannot be influenced to a great extent by sanctions. One of the main reasons is rooted primarily in social solidarity, which means mainly solidarity with future generations. This is proved by the more active environmental awareness in families with children. A useful initiative can be the appointment of an ombudsman of the future generation, but social knowledge level and expectation are required not to be separated from politics on a long term and to a greater extent. The administration should inform and involve actively the civil sphere – among many others, the Churches – and other parts of society to achieve the goals on environmental protection.

The Hungarian society presents a specific characteristic in the field of social solidarity. Environmental protection is a good example to observe that general attitudes are not adequate motivation for action or sacrifice. The Hungarian situation shows similarity to the general acceptance level of the welfare social systems, but it is simultaneously characterized by the low level of willingness to sacrifice. Moreover, the fact that the real or perceived social status largely defines the area of environmentally conscious action on a large scale is true also for this topic. In the light of the results, hygienic, pension scheme, and tax consciousness offers comparing studies with the results of environmental social studies.

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APPENDIX

Table 1a. Which statement is the closest to you? (Total people asked %)

We do not have to concentrate on waste treatment very much, all the waste has been going to the disposal.	11%
Selective waste management is important, because there is more and more garbage, we cannot just bury it. Selective waste management solves this problem	47%
Selective waste management and recycling is not enough, we also have to pay attention to create less garbage	40%
NA / DK	2%

Table 1b. And which statement is the closest to you from these? (Total people asked %)

There is more and more waste these days. Everybody has to collect garbage selectively to recycle. This is the only way to ensure cleanness for our children and grandchildren.	72%
There is no sign of a problem with waste. We do not have to care much about selective waste management, till the garbage trucks collect it and there is place to bury it.	10%
The most important is to avoid illegal garbage disposal in the forest. The rest is solved by nature.	15%
NA / DK	3%

Table 1c. The Rate of Collectors of Various Packaging Waste

Out of three, how many types of waste would you/do you collect selectively:	Present practice			Supposed action
	Mentions spontaneously	Lists	← the latter two together	
0	35%	30%	28%	17%
1	27%	23%	22%	24%
2	23%	25%	25%	32%
3	15%	23%	25%	27%

Table 1d. What do you collect selectively in your household? (OPEN QUESTION)
In your household, do you collect selectively…

1. Newspapers, other printed materials?
2. Other paper waste?
3. Plastic bottles?
4. Metal drink tins?
5. Other metal waste?
6. White glass? (preserves, drinks, etc.)?
7. Colored glass?
8. Batteries, accumulators?
9. Paint tins?
10. Expired medicines?
11. Garden waste, organic garbage?

12. Household appliances, electronic waste?
13. Other, if yes, what?

Table 1e. If introduced, what kind of waste would you collect selectively and put in different sacks? (OPEN QUESTION)

1. Newspapers, other printed materials?
2. Other paper waste?
3. Plastic bottles?
4. Metal drink tins?
5. Other metal waste?
6. White glass? (preserves, drinks, etc.)?
7. Colored glass?
8. Batteries, accumulators?
9. Paint tins?
10. Expired medicines?
11. Garden waste, organic garbage?
12. Household appliances, electronic waste?
13. Other, if yes, what?

Table 1f. How many of the questioned would accept a price increase? (Total questioned %)

	Acceptance frequency
Not willing to pay more than presently	42
HUF 200–600	33
HUF 700– 1200	23
NA / DK	2

Question 48/4a. Have you heard that stricter fines can be imposed, thus somebody to discharge waste to an illegal deposit can be sentenced to up to 3 years, in case of hazardous waste – to up to 5 years?

1 – Yes
2 – No
0 –Do not know X – No answer

Question 49/4a. What is your opinion about this?

1 – Should be punished even stricter
2 – Agree with the punishment
3 – Feel the punishment too strict?
0 – Do not know X – No answer

Table 2a. Spare time activities: the main component factor-weights of culture consumption (Process: *Principal Component Analysis*)

	Factor-weight
Going to cinema	.721
Going to theatre	.802
Reading novels	.673
Visiting exhibitions. museums	.760
Listening to music	.551
	Kept information quota: 50%

Table 2b. The Main Component Factor-weights of Social Activities (Process: *Principal Component Analysis*)

	Factor-weight
Going out to music and/or dance clubs	.838
Visiting restaurants, pubs, taverns	.835
Meeting friends, acquaintances	.739
	Kept information quota: 65%

Table 2c. The Main Component Factor-weights of Outdoor Activities (Process: *Principal Component Analysis*)

	Factor-weight
hiking, excursions	.702
sport (individual)	.862
football or other ballgames	.770
	kept information quota: 61%

Table 2d. Spare Time Activities: The Main Component Factor-weights of Other Home Activities (Process: *Principal Component Analysis*)

	Factor-weight
SPlaying computers, surfing the net	.760
Watching DVD/video	.796
Watching sport	.527
Chess, card games	.576
	Kept information quota: 45%

Table 2e. Connection between Forms of Activity[8] and Environment Awareness (Perason's correlational coefficients, Significance quotient in brackets)

	Executed action	Supposed action	Willingness to pay
Consuming culture	-.173 (.000)	-.091 (.000)	-.241 (.000)
Social activities	-.016 (.528)	-.020 (.433)	-.132 (.000)
Outdoor activities	-.111 (.000)	-.086 (.001)	-.200 (.000)
Other indoor activities	-.058 (.026)	-.116 (.000)	-.171 (.000)

Question 23/9a. Would you participate at a public hearing about a local investment that has effect on the environment?

1 – Yes
2 – Probably yes
3 – Probably no
4 – No
0 – Do not know X – No answer

8 The negative value of the main components indicate if the given activity form is characteristic of somebody, the positive ones if it is not.

Table 3. Connection between Gender and Environment Awareness in case of equal problem-map (Real answers, Average)

		Executed action	Supposed action	Willingness to pay (HUF)
Scope of problems: inland waters, floods				
Consider important	men	3.32	6.74	242
	women	3.68	6.97	260
	total	3.52	6.87	252
Significance[9]*:*		.193	.519	.509
Scope of problems: air pollution caused by cars				
Consider important	men	3.22	7.00	300
	women	3.34	6.51	298
	total	3.29	6.73	299
Significance:		.644	.174	.959
Scope of problems: quality of drinking water				
Consider important	men	3.14	6.36	261
	women	3.55	5.98	261
	total	3.37	6.14	261
Significance:		.108	.304	.989
Scope of problems: hazardous waste				
Consider important	men	3.43	7.10	288
	women	3.42	6.74	315
	total	3.42	6.91	302
Significance:		.965	.332	.407
Scope of problems: allergy agent plants				
Consider important	men	3.60	6.75	283
	women	3.33	6.25	293
	total	3.44	6.46	289
Significance:		.365	.212	.770
Scope of problems: air pollution caused by industry				
Consider important	men	3.12	6.34	222
	women	3.23	6.41	285
	total	3.18	6.38	253
Significance:		.691	.857	.043
Scope of problems: selective waste management				
Consider important	men	4.48	7.53	330
	women	3.64	7.09	361
	total	4.00	7.28	348
Significance:		.044	.397	.524

9 confidence interval 95%