

The role of organisational culture in the environmental awareness of companies*

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The objective of the article is to highlight the role of environmental values in corporate pro-environmental behaviour. Among the five components of corporate environmental awareness, environmental values are of special importance, as is illustrated by the organisational culture of a Hungarian company showing consistent pro-environmental behaviour regarding all awareness components except values. Empirical research findings – arrived at with the help of Q-methodology – indicate the need for a stable and unambiguous integration of environmental values into organisational culture in order to achieve consistent pro-environmental behaviour at companies.

Der Artikel betont die Rolle der Werte im umweltorientierten Organisationsverhalten. Unter den fünf Komponenten des Umweltbewußtseins gewinnen umweltrelevante Werte spezielle Wichtigkeit, was durch die Organisationskultur einer ungarischen Firma illustriert wird. Diese Firma weist ein konsistentes Verhalten in fast allen Komponenten des Umweltbewußtseins auf, nur nicht hinsichtlich der Werte. Empirische Ergebnisse – gewonnen durch Q-Methodologie – deuten darauf hin, daß umweltbezogene Werte in die Organisationskultur auf eine stabile und konsistente Weise integriert werden müssen, um ein richtiges Umweltbewußtsein in Unternehmen erreichen zu können.

Key words: organisational culture , pro-environmental organisational behaviour , environmental awareness , environmental values , Q-methodology

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1. Introduction

Corporate environmental awareness can be analysed in several ways. One approach is to examine the consistency of organisational behaviour regarding the relationships of environmental awareness components. Based on the literature (Maloney/Ward 1973; Winter 1987; Urban 1986) five components of environmental awareness can be identified: ecological knowledge, environmental values, environmental attitudes, willingness to act and actual behaviour. These inter-related components form and reflect pro-environmental behaviour of both organisation members and the whole organisation. In the awareness-shaping process every component has a unique role which is hard to measure using a single methodology. In our experience, organisational ecological knowledge, environmental attitudes, willingness to act and environmental activity can be more or less observed via quantitative research techniques (Kerekes et al. 2003; Nemcsicsné 2005). On the other hand, the appearance and importance of environmental values and their influence on organisational behaviour can be more appropriately judged using qualitative methodology.

In this study, organisational culture serves as a framework for the examination of environmental values, as we are convinced that organisational culture reflects both the real and the declared values of the company and its members most realistically. During the empirical research we aimed to measure the influence of environmental values on the organisational behaviour, while filtering out the impacts exerted by ecological knowledge, attitudes, and willingness to act. For the qualitative analysis we have chosen a Hungarian company which shows consistent pro-environmental behaviour in the context of all environmental awareness components except values. Consequently, reflection of environmental values in the organisational culture of this company can be characterised independently from the other awareness components, and the outstanding importance of our value system in the actual behaviour can be highlighted.

2. Reflection of environmental values in the organisational culture of companies

Environmental values are part and parcel of our value system, so they are typically "durable concepts or convictions which relate to the desired behaviour, unfold in various situations, provide orientation when evaluating events and are organised in an order of relative importance" (Hofmeister Tóth/Töröcsik 1996). Their manifestation frequently leads to value conflicts both within the individual, in the relations between individuals and at organisational levels.

Concerning the relation between the individual and the organisation, it is of importance to what extent the individual's values are in harmony with the values espoused by the company, since the reconciliation of these two is the foundation

of a stable and viable organisational culture. According to Harris and Crane (Hemingway/Maclagan 2004) the values of managers are strongly oriented towards the organisation, both of which question the prevalence of personal values over organisational values in case of conflicts between the two. This can have negative or positive consequences, depending on the integration of environmental considerations into organisational objectives and strategy. Empirical findings show that the values of managers influence the environmental performance of the company to a high degree (Kerekes et al. 1999). Consequently, it is of great relevance what kind of value system is transmitted from management to employees.

A company is never homogeneous in terms of its operation because individual organisational units and individuals within units dispose of various tasks and authority. Thus, environmental awareness can be interpreted in different ways depending on the degree and form of environmental aspects to be reflected in the activity of these different organisational units.

Consequently, the value system of the organisation may be thought of as the common pool which serves as a source for organisational members and units in deciding the significance of environmental considerations while performing specific tasks. When talking about the "value system" of an organisation, the frequently discussed issue again arises of whether the organisation can even be considered a moral actor, or whether an 'ethical' action can only be attributed to the individual while the organisation functions in a more "instrumental" way by subordinating ethical questions to broader organisational objectives (Pataki 2002; Moore 1999). Independently of the stand the researcher takes, it holds true that the organisation has environmental values only if the values reflected in the philosophy, mission, and intended strategy of the organisation are also manifested in organisational culture.

Organisational culture is the system of assumptions, values, convictions and beliefs accepted and commonly interpreted by the members of the organisation. These are accepted as valid by the members of the organisation who follow and pass them on to new members as sample solutions to the problems to be followed and as desired ways of thinking and behaving (Schein 1985). When embedding environmental attitudes, there are two outstanding questions: how strong (or weak) is the given corporate culture (Deal/Kennedy 1982) and how can the issue of environmental protection be integrated into the existing organisational culture. The simplest case is an organisation with a strong organisational culture where environmental protection objectives do not give rise to major target conflicts within the organisation. In this case, the level of environmental awareness sufficient to meet objectives is relatively easy to achieve because organisational members and groups can more easily identify with the philosophy of the organisation.

All the other cases are somewhat problematic. A strong organisational culture leads generally to rigidity. Therefore, if the appearance of environmental issues requires radical changes and a fundamental change in attitudes within the organisation, this happens in a much more cumbersome way, at companies with a strong organisational culture (if it happens at all) than in companies with a weak organisational culture. Weak organisational culture means that intra-organisational sub-cultures are relatively strong but they tend towards diversity.

According to general experience, in such cases the organisation can better adapt to changes (Bakacsi 1998:245). The conflicting business and environmental objectives of the company can also hamper the development of corporate environmental awareness in this case, except if within the organisation there is a group disposing of power, decision-making authority and responsibility which advocates environmental protection and is able to enforce environmental aspects.

It is evident that, in addition to reconciling corporate objectives, we have to take into account other factors influencing organisational culture. One such example is the financial position of the company, which in the case of difficulties might lead to the reinforcement of old behavioural patterns, irrespective of the integration opportunity of environmental objectives. This phenomenon is typical of a company which refuses off-hand to integrate environmental considerations into its functioning under the pretext that environmental protection only imposes further costs on the company.

Stakeholders in the organisation also constitute an important aspect. According to the claims of Madsen and Ulhoi (2001), corporate environmental measures directly or indirectly depend on how accurately the company perceives the pressure of stakeholders and how it relates to the values of decision-makers within the company and to the opinion of the management concerning the influence of stakeholders. Pressure exerted on the organisation by external and internal stakeholders will finally become an organisational factor through the realisation and absorption of these pressure and values, and as such will shape corporate environmental awareness as reflected in organisational responses.

All in all, the organisation can be considered environmentally aware if organisation members share a common pool of environmental values. The existence of such a pool is a precondition for the success of the entire organisation in meeting expectations. If members of subdivisions within the organisation know what they should know on environmental issues, think as they should think, believe what they should believe and act as they should act, environmentally aware behaviour will be in evidence. An organisational culture based on a shared value system is therefore of high importance in the manifestation of environmental awareness.

3. Empirical research

3.1. Finding the appropriate company for qualitative analysis

The impact of environmental values on organisational behaviour can be assessed in a reliable way if we try to by-pass the influence of other awareness elements on actual behaviour. Consequently, the following analysis describes a Hungarian company from the paper industry which at first sight appears to display consistent pro-environmental behaviour regarding its ecological knowledge, environmental attitudes, willingness to act and environmental activity (Kerekes et al. 2003). The selected enterprise is economically successful and has more than 1000 employees (unfortunately, the management refused permission to mention its name).

The company predominantly uses waste paper in production and faces significant internal and external environmental risks during its activity. It causes significant negative environmental impacts in the areas of natural resource use (especially water consumption), solid waste generation (in the form of rejects), waste water effluent (as to date it uses only a mechanical waste water treatment plant in Budapest and thus discharges waste water directly into the main arm of the Danube), as well as being at risk of severe accidents (because of some very old pieces of equipment). However, the firm regularly monitors its environmental performance and is successful in concrete environmental measures like reduction of water consumption through recirculation, reduction in energy use and raw material saving. Between 2000 and 2003 it achieved generally positive changes concerning the environmental impact per unit of output (both water and energy use as well as amount of waste water effluent has significantly dropped). This is partly a result of the dedicated R&D budget which the company has for environmental matters.

The selected company runs a certified, properly functioning environmental management system (ISO 14001) and applies all essential environmental management tools. EMS implementation was motivated mostly by the goals of preventing environmental pollution, improving relations with regulatory authorities, achieving cost savings in waste management and improving information on company operations (Kerekes et al. 2003). The person responsible for environmental issues is directly subordinate to top management within the organisation which reflects the importance of environment protection in the organisational structure.

Regarding stakeholders, it is the corporate headquarters, management employees and local communities that have the strongest impact on the environmental activity of the company, but other stakeholders also have a moderately important role. The environmental activities of the enterprise are most motivated by the prevention and management of environmental accidents, achieving regulatory compliance and the intention to improve corporate image. The latter is not

surprising, because the enterprise considers its environment-related market opportunities significant.

3.2. Hypotheses

Based on these characteristics, we would expect such an enterprise to show a high-degree of socially acknowledged environmental awareness, and to have environmental protection integrated into its organisational culture. Hence, our first hypothesis is the following:

Hypothesis 1: Built-in “regulators” (e.g. EMS, regular monitoring of environmental impacts, etc.) ensure the recognition of environmental problems and the follow-up of environmental efforts, as well as establishing some solid environmental foundations in organisational culture.

According to practical experience, the implementation of an environmental management system efficiently contributes to the acknowledgement of the determining role of top management, to the shaping of organisation members’ environmental attitudes, as well as to the perception of the company’s environmental commitment. We calculate with positive results in this regard, reflecting in the opinions of responding organisation members.

However, reality is usually more complex which hampers the organisation to be fully consistent in its pro-environmental behaviour.

Hypothesis 2: There are significantly divergent elements in the individual value systems of organisation members which result in an imperfect integration of environmental awareness into the organisational culture of the company.

During the research we tested the nature of respondents’ value systems via statements concerning their everyday pro-environmental behaviour and their attitudes.

Joining this hypothesis, we think that the perception of organisation members about the environmental awareness of the company is also crucial from the point of view of a strong or weak corporate environmental culture.

Hypothesis 3: Based on different individual perceptions of reality, respondents’ opinions are divergent regarding the environmental awareness of the company which also makes a unified organisational culture impossible.

The core elements of the company’s environmental awareness which we analysed are:

- the importance of environment protection for the company;
- the environmental awareness of employees;
- the efficiency of motivating tools applied by the company to increase environmental awareness;

- tools necessary to promote environmental awareness.

3.3. Research methodology

We examined the organisational culture of the selected company with the help of Q-methodology (Stephenson 1953) which classifies respondents according to the similarity or diversity of their opinions into relatively homogeneous groups and highlights the factors judged by respondents in a very similar or a very different manner. In this way we are able to explore which patterns of organisational culture and environmental values are uniform (or very similar) in every respondent's perception, and which elements are assessed very differently by respondents.

Q-methodology actually serves as bridge between qualitative and quantitative research methodologies, combining the advantages of both research traditions (Brown 1996). The main objective of Q-methodology is to typify opinions related to a given issue by means of quantitative analytical techniques. In reality this is a "reverse" factor-analysis, which instead of creating latent variables from variables classifies respondents into various factors – into so-called opinion-groups –, based on the similarity or divergence of their opinions. The qualitative nature of the methodology is due to the fact that it requires neither a certain sample size as precondition for reliable quantitative analysis, nor representativeness. The methodology by generating typical opinions assists the researcher in shape recognition, but it is not suitable for generate representative types.

Q-methodology uses a special technique for data collection called the "Q-sort technique". The essence of the technique is that participants rank statements according to their individual preferences. In the application of Q-methodology the careful formulation of statements to be ranked is of outstanding significance, in order that respondents are able to establish their own rank-ordering by comparing the statements in pairs.

Consequently, we selected the statements suitable for examining our assumptions in two stages. Firstly, we formulated 46 statements – partly in a positive, partly in a negative form – which we tested in a simple questionnaire-based manner at another company, with the participation of 30 organisation members. We deliberately chose a firm from another sector (the chemical industry), as we wanted to be industry-neutral in formulating the statements. The simple evaluation helped to filter statements in order to get 33 statements which met the requirements of the Q-method, meaning they were relevant and did not overlap in content as well as being adequate for rank-ordering (see Annex 1).

Annex 1.

The 33 statements to be ranked (grouped by themes characterising the value system of organisation members and the organisational culture of the company)

a) Statements relating to individuals' inherent environmental awareness:

1. I feel to be personally responsible for the future environment of my children and grandchildren.
2. People could put an end to harmful processes by consciously changing their life-styles.
3. Environmental problems are primarily caused by corporate activities.
4. If I see people ignore the protection of the environment, I am also discouraged from making efforts.
5. I like routine, and rarely change my habits.
6. I think I personally cannot do much for the environment.
7. If my friends started to radically reduce their consumption as of tomorrow, I would follow their examples.
8. To live an environmentally friendly life I need to sacrifice a lot.

b) The role of environment protection in the company:

9. The activities of our company pose significant risks to the environment.
10. The management of our company pays sufficient attention to managing environmental problems.
14. Our company deals with environment protection only because it is obliged by law to do so.
18. When it comes to profit and cost issues, environmental considerations are ignored by the company.
19. If there was no environmental manager at the company, environmental objectives would certainly not be achieved.
20. Environment protection is equally important for everybody at the company.
28. The environmental objectives of the company are always fully achieved.

c) Environmental awareness in the behaviour of the members of the organisation:

11. Cleanliness and order are high priority for the employees of our company.
12. The employees of our company always respect health and safety instructions.
17. Every employee is aware of the environment protection objectives of the company.
21. The employees of the company have sufficient knowledge to realise what they are supposed to do to protect the environment.

22. The employees of the company are not motivated by their internal convictions when meeting environment protection tasks but by the obligatory instructions.

30. The full achievement of environment protection objectives of the company is prevented by the lower than necessary environmental awareness of employees.

26. I and the colleagues in my immediate surroundings have a very similar value system.

d) Tools applied to increase environmental awareness:

13. Employees always receive appropriate feedback concerning the environmental output of their work.

15. The top management of the company often talks to employees about the importance of environment protection.

16. The environmental training launched by the company improved employees' attitudes a great deal.

23. The main objective of the environmental training of the company is to increase employees' environment-related knowledge; the encouragement of employees' environmentally aware behaviour is only of secondary importance.

24. The company asks the opinion of its employees in questions of environment protection.

25. The company applies direct incentives – rewards, acknowledgement – to motivate employees to take environment-related initiatives.

31. The introduction of the environmental management system has fundamentally changed the values of employees vis-à-vis environment protection.

32. The current environmental management tools of the company are not sufficient to achieve proper environmental performance.

e) Opportunities to increase corporate environmental awareness:

27. Employees should be given more say in decisions relating to environment protection.

29. The company should apply various methods to encourage employees to achieve better environmental performance.

33. I think employees can better encourage one another to behave properly than rules can.

In the second stage we selected respondents based on two criteria: the total number had to be between 25 and 30 (we chose 26) to be appropriate for using the Q-methodology (Brown 1996), and we wanted them to come from different

organisational units in order to get an overall view of the environmental culture of the company.

During the research we applied the so-called "forced distribution" technique, which means that we predetermined the exact number of statements that could be assigned to the elements of a nine-degree scale from -4 to +4, based on the respondents' agreement or disagreement (see Table 1).

Table 1. Sorting of statements based on forced distribution

	Completely disagree				Indifferent				Fully agree
Scale value	-4	-3	-2	-1	0	1	2	3	4
Number of statements to be sorted	2	3	4	5	5	5	4	3	2

The preference orders for all the 26 respondents (so-called Q-sorts), which met the requirement of a quasi-normal distribution are summarised in Annex 2. The applied software (Schmolck 2002) compared each individual preference ranking in pairs and determined their correlations. From the inter-correlation matrix typical Q-sorts (actually, factors) were generated, based on the similarities and differences of individual Q-sorts. After a Varimax rotation, the main features of the factors – containing respondents with very similar preferences – became more clearly interpretable (Nemcsicsné 2005).

4. Research findings

The very existence of factors indicates that environment protection is not reflected in a uniform manner in the organisational culture of the selected company, as respondents have significantly different opinions regarding several environmental questions in the context of the organisation or the behaviour of its members. In the following we examine the characteristics of the typical opinion groups (factors), and the main environmental patterns of the organisational culture.

4.1. Typical opinion groups within the company

Q-methodology originally generated eight factors from individual sorting. In order to maintain proper explanatory power, we kept five out of the eight factors, which after the VARIMAX rotation explained 62% of the variance. Annex 3 contains the determining elements of each factor – namely the respondents represented best by a given factor – which are indicated with an X. Based on the normalised factor scores (weighted averages) relating to statements

as well as the factor Q-sort values (the typical values) attached to the statements in individual factors we can describe the main features of each factor.

Annex 2. Characteristics of respondents in the different factors

	Code	Workplace	Assignment	Qualification	Age	Years spent at the company
Factor 1	2	Transport	Employee	College	45	22
	3	Logistics	Middle manager	University	55	30
	9	Water board	Employee	Secondary school (High school)	47	30
	10	Basic material management	Middle manager	University	61	45
	13	Human resources	Middle manager	Technical school	59	45
	25	Production	Employee	Industrial school	31	8
Factor 2	6	Production	Lower manager	Primary schools	30	13
	16	Production	Lower manager	Secondary school	42	21
	8	Production	Middle manager	Technical school	50	15
Factor 3	11	Water board	Employee	Technical school	49	30
	15	Assistant general manager	Top manager	University	59	13
	17	Production	Middle manager	University	47	22
	23	Production	Employee	Technical school	43	23
	1	Production	Employee	Primary schools	40	10
Factor 4	4	Purchasing	Middle manager	College	43	20
	5	Investment	Employee	College	52	34
	12	Preventive maintenance	Lower manager	Technical school	48	24
	14	Production	Middle manager	University	49	30
	18	Production preparation	Middle manager	University	60	36
	24	Power station	Employee	Technical school	52	31
	7	Electric plant	Lower manager	College	45	16
Factor 5	19	Production	Middle manager	College	39	15
	21	Production	Employee	Industrial school	33	5
	22	Production	Employee	Industrial school	31	6
	26	Production	Lower manager	Industrial school	35	21
	2	Production	Employee	Industrial school	32	9

Annex 3. Rotated factor matrix¹

Q-classes	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	0.0179	0.3051	0.2186	0.7465X	0.1450
2	0.6265X	0.3229	0.1987	0.2804	0.1717
3	0.6928X	0.0635	0.1120	-0.1832	0.3783
4	0.2107	-0.2184	0.0736	0.5512X	0.3749
5	0.4742	-0.1051	-0.1113	0.5986X	0.1186
6	0.1134	0.6487X	0.0393	0.1286	0.3077
7	0.3515	0.3502	0.0020	0.1802	0.6391X
8	-0.0621	-0.5245	0.5771X	-0.0138	-0.1344
9	0.5937X	0.4392	-0.1778	-0.1279	-0.1009
10	0.4842	-0.4767	-0.0528	0.2376	0.2770
11	0.2362	0.0093	0.7037X	0.2318	0.0547
12	0.0333	-0.1448	0.0723	0.7745X	0.1443
13	0.7710X	-0.2633	0.1031	0.0233	0.2175
14	-0.0152	0.1280	0.1943	0.5716X	0.1008
15	0.0093	0.1976	0.7530X	0.2496	0.2364
16	0.0698	0.7513X	0.1254	0.0581	0.0319
17	0.0588	0.1279	0.6619X	0.0962	0.4031
18	-0.0169	0.3829	0.1885	0.6023X	0.2161
19	0.3920	0.1698	0.1264	0.4236	0.4653
20	0.1033	0.7667X	0.0619	0.3733	0.2780
21	0.3316	0.1710	0.2844	0.0120	0.6643X
22	0.2453	0.0338	0.0004	0.1528	0.7518X
23	-0.0072	0.0685	0.5031X	0.1045	0.3175
24	-0.0612	0.4144	0.2654	0.5883X	0.2800
25	0.5099X	0.3405	0.3424	0.3215	0.1923
26	-0.1619	0.1454	0.0377	0.4691	0.6322X
Explained Variance in %	12	13	10	15	12
Number of decisive variables	4	3	5	7	4
Average reliability coefficient	0.800	0.800	0.800	0.800	0.800
Composite reliability	0.941	0.923	0.952	0.966	0.941
Standard deviation of factor scores	0.243	0.277	0.218	0.186	0.243

¹ Due to forced distribution the average of scale values attached to statements is 0.000, with a standard deviation of 2.236, with regard to each Q-sort. Based on the decisive factor elements we can see that there are two respondents who cannot be classified into any factors due to their contribution to the factors. This is partly because their factor weights were under 0.5, and they had approximately the same factor weight in absolute value in two factors. We consider them as outsiders. In addition, respondent no.20 has a rather high negative factor weight with regard to factor no.2, whereas his other factor weights are rather low. We excluded him from the research, as well.

Factor 1: Satisfied, value – centred respondents

Respondents in Factor 1 evaluate environmental activities of the company basically positively. They are absolutely convinced of the environmental commitment of the company, efforts made by the management, the importance of the environmental manager, proper operation of the environmental management system and efficiency of environmental training. They favourably judge changes in employees' values and attitudes; they perceive the value system of their immediate colleagues as similar. This is the reason why we give them the term 'value-centred'. They seem to be satisfied with the tools applied by the company to motivate employees' environmental performance, in spite of certain shortcomings (lack of rewards, acknowledgement), and they do not deem further diversification of motivating tools. They would, however, give more say to employees regarding environmental issues. In their opinion, employees generally receive proper feedback as to the environmental output of their work, are aware of the company's environmental objectives and respect health and safety regulations.

The individual attitude of respondents in Factor1 is characterised by a high degree of responsibility and a strong internal control. The existence of strong internal control is proven by the fact that the negligence and polluting behaviour of others would not discourage respondents from pursuing activities they deem right. They do not insist on maintaining their routine and habits, environment protection for them is not a sacrifice, and to some extent they believe in the effectiveness of changes in individuals' life-styles. At the same time, they would not be willing to radically reduce their consumption; they would in all likelihood apply other methods to protect the environment.

This factor is predominantly made up of middle managers and employees who have worked for the company for 30-40 years, in functional areas other than production.

Factor 2: Loyal value-pessimists

Respondents in Factor 2 have exceptional, nearly unbelievable convictions, largely different from those in other factors, as to the full achievement of environmental objectives, employees' knowledge of environmental issues, their attitudes and law-abiding behaviour, the motivating tools to be proper and the role of top management and environmental protection being equally important for everybody at the company. This explains why we call them loyal.

At the same time they are sceptical regarding the efficiency of environmental management system in shaping values, and the importance of the environmental manager. Their values differ from those of their colleagues in their immediate surroundings. Since they are rather negative with respect to their values, we call them "value-pessimists".

Their individual attitudes are also markedly different from those of respondents in other factors. While they think that environmental problems are not caused by companies in the first place, they also deny any personal responsibility. They believe one individual cannot do much for the environment and nor would it be of much benefit to change their life-styles.

The factor is composed of middle-aged managers at the lower level of management who have been working in the area of production for the company for 15-20 years.

Factor 3: Critical respondents

Factor 3 is made up of respondents who are rather critical about the environmental behaviour of the company as a whole. They find the initiatives of the top management basically successful. They think that:

- an environmental management system is enough to ensure proper environmental performance;
- the company is not only motivated by laws and regulations to pay attention to environmental issues;
- employees have sufficient environmental knowledge to successfully perform their own tasks;
- the company asks for and receives the opinion of employees regarding environmental issues.

At the same time they also think that environmental objectives are not fully achieved (though it is not primarily due to the lack of environmental awareness on the part of employees), and the environmental manager is not indispensable with respect to the achievement of environmental objectives. Training in environmental issues has improved employees' attitudes, but the environmental management system has not had any impact on the values of employees. Employees are not driven by their inherent convictions towards meeting environmental objectives; they do not respect health and safety instructions, and do not maintain cleanliness as expected. Training sessions also extended the knowledge of employees, and yet, not everybody is aware of the environmental objectives of the company. It is also true, however, that according to respondents in this factor, top management does not talk enough to employees about the importance of environment protection. Environment protection – maybe due to the previously mentioned shortcoming – is not equally important for everybody at the company.

Consequently, there is a lot to do in the area of motivation: the company does not apply direct motivators. A larger number of motivating tools should be used, though critical respondents are of the opinion that it is not absolutely necessary to give more say to employees in environmental questions.

Respondents in this factor are aware of their personal responsibility, their room to act and the possible positive consequences of changing their life-styles. At the same time they very much stick to their habits and routines. Environment protection for them is a sacrifice, and they would not be willing to reduce their current consumption levels.

The majority of critical respondents work in production and the deputy-CEO responsible for environment policy objectives also belongs to this factor.

Factor 4: Respondents missing environmental awareness the most

The fourth group of respondents differs from all the other groups inasmuch as its members perceive a lack of environmental awareness on the part of the organisation members and hold this accountable for all the environmental problems surfacing at the company.

According to concrete answers, environmental objectives are not always met, which is due to the low level of environmental awareness. Not everybody knows the environmental objectives of the company, employees do not have sufficient knowledge to perform their tasks, and they are not driven by inherent convictions but rather by binding instructions. Employees do not respect health and safety instructions and do not maintain cleanliness. It is not all surprising, as the company does not motivate employees to take environmental initiatives, does not ask their opinion about environmental decisions and does not provide any feedback. Only the environmental training has some effect on attitudes and the environmental management system on the set of values, but these effects are not positive enough, since the environmental management system does not ensure proper environmental performance. Environmental protection is equally important for everybody – but only verbally. Undoubtedly, more motivators should be applied, except for giving more say to employees.

Regarding the role of the top management and the environmental manager, respondents in this group are appreciative. Their personal attitudes are characterised by a high degree of responsibility and are of the opinion that people could put an end to harmful processes by changing their life-styles. Though they do not stick strongly to their habits, they would choose not to reduce their consumption. An environmentally friendly life requires some sacrifice – they say.

The factor is composed mainly of low-level and middle-managers from various organisational units of the division. Respondents have been working for the company for at least 25-30 years; two-thirds of them attended university or college.

Factor 5: Dissatisfied respondents in need of motivation

According to the findings, respondents in this factor evaluate the environmental risks of the company relatively the highest. They have contradictory opinions about the environmental awareness of employees. They think employees have sufficient environmental knowledge and are more or less aware of the company's environmental objectives, which are usually fully achieved. At the same time employees are not motivated by their inherent convictions but by binding laws and regulations, though the environmental management system and training have had positive effects on their values and attitudes. The cause of environment protection is not at all equally important for everybody at the company; what is more, respondents think that they and their immediate colleagues have different value systems. Knowledge is sufficient, but the values of the members of the organisation are different. Employees respect health and safety instructions, but do not maintain cleanliness properly. Respondents deem the environmental management system as insufficient to promote the achievement of environmental objectives.

Respondents in Factor 5 are clearly bothered by a lack of motivation. In their opinions the company does not motivate its employees by rewards or acknowledgment of their performance to improve their environmental performance, does not ask the opinion of employees and does not provide any feedback for them. They clearly need more motivators and more say in environmental questions. Hence, the name given to the factor.

They feel personally responsible for the future of their children and could also take action, even though they blame companies for most environmental problems. They are not bound by their routine and habits, environment protection for them does not mean any sacrifice if they are convinced of something, and they act accordingly and would even reduce their consumption levels.

Respondents in this factor work in the area of production, some of them have been working for a few years as non-management employees, others have spent 15-20 years at the company and are currently members of low- and middle-management. The majority of respondents graduated from an apprenticeship or vocational secondary school (except for the middle-manager, who has a college degree).

We have seen above the different opinions of respondents represented in various factors, which indicate that the judgement of the importance, role and "implementation" of environment protection is not uniform within the organisation. Consequently, environment protection for the time being is not consistently integrated into the organisational culture of the examined enterprise.

4.2. Characteristics of the company's organisational culture

Features of the organisational culture can be revealed when analysing the statements based on ranking differences of factors. According to our assumptions, we examine statements judged similarly by respondents the content of which might serve as the basis of an emerging environment-centred organisational culture. On the other hand, we analyse diversely ranked statements as well which refer to the weaknesses of the organisational culture. Opinions characterising the organisational (environmental) culture of the selected company are summarised in Annex 4.

In the case of convergent opinions, the degree of agreement or disagreement over the statements is certainly somewhat different in individual factors, but findings still contain a great deal of valuable information. According to respondents the role of the management is fundamental in the adequate treatment of environmental problems, and the overwhelming majority of respondents working in different units and level of the organisation reported this positively.

In the area of motivation, more attention should be paid to socio-cultural factors (e.g. group identity, group norm, and features of social relations) because these are considered to improve efficiency much more than rules do.

The favourable impact of environmental training on attitudes and willingness to act is proved by the judgement of two statements, which indicates that by means of environmental training which encourages proper behaviour, corporate environmental awareness can perceptibly be improved.

Conveying the environmental commitment of the company to employees is obviously an important part of organisational culture, as respondents working in different organisational units share the opinion that the company takes responsibility for the environment, beyond compliance with environmental regulations.

Two statements refer to the individual attitude of respondents. They do not let others discourage them: if they are environmentally aware, they persist in what they are doing. On the other hand, however, they refuse to radically reduce their own consumption and not even the good example of their peers could convince them to do so. Both statements demonstrate that personal convictions and values are of decisive importance regarding individual behaviour, which is rather stable and difficult to change. This might have positive and negative consequences alike.

Several statements confirm the positive attitude of the management, the commitment of the company and the perception of individual responsibility. The majority of respondents do not identify the low level of environmental awareness as a major obstacle to the fulfilment of environmental objectives. At the same time respondents obviously could not take a stand in the question on

caring about cleanliness and whether employees are motivated by personal convictions when meeting tasks of environment protection.

Annex 4. Opinions characterising organisational culture of the company

<p>Converging opinions of all factors (showing the strengths of the company's organisational culture from environmental point of view)</p>	<ul style="list-style-type: none"> • The management of our company pays sufficient attention to managing environmental problems. (+) • I think employees can better encourage one another to behave properly than rules can. (+) • The environment training launched by the company improved employees' attitudes a great deal. (+) • People could put an end to harmful processes by consciously changing their everyday lives. (+) • Our company deals with environment protection only because it is obliged by law to do so. (-) • The main objective of the environmental training of the company is to increase employees' environment-related knowledge; the encouragement of employees' environmentally aware behaviour is only of secondary importance. (-) • If I see people ignore the protection of the environment, I am also discouraged from making efforts. (-) • If my friends started to radically reduce their consumption as of tomorrow, we would follow their examples. (-)
<p>Predominantly converging opinions of the factors</p>	<ul style="list-style-type: none"> • The top management of the company often talks to employees about the importance of environment protection. (+) • Every employee is aware of the environment protection objectives of the company. (+) • I feel to be personally responsible for the future of my children. (+) • When it comes to profit and cost issues, environmental considerations are ignored by the company. (-) • I think I personally cannot do much for the environment. (-) • The full achievement of environment protection objectives of the company is prevented by the lower than necessary environmental awareness of employees. (-) • The company applies direct incentives – rewards, acknowledgement – to motivate employees to take environment-related initiatives. (-) • The activities of our company pose significant environmental risks. (0) • Cleanliness and order are high priority for the employees of our company. (0) • The employees of the company are not motivated by their internal convictions when meeting environment protection tasks. (0)

<p>Heterogeneous opinions of the factors (highlighting the weaknesses of the company's organisational culture)</p>	<p>Regarding the importance of environment protection for the company:</p> <ul style="list-style-type: none"> • importance of environment protection for organisation members; • achievement of environment-related objectives; • the role of the environmental manager in the achievement of environment-related objectives. <p>Regarding the environmental awareness of organisation members:</p> <ul style="list-style-type: none"> • similar values shared by colleagues; • sufficient knowledge of environmental issues; • compliance with health and safety prescriptions. <p>Regarding current motivators to increase environmental awareness:</p> <ul style="list-style-type: none"> • the role of EMS in changing values and the achievement of adequate environmental performance; • asking the opinion of employees in environmental questions; • proper feedback for employees. <p>Regarding motivating tools suitable for the purpose:</p> <ul style="list-style-type: none"> • diversified motivators to improve environmental performance; • higher degree of employee involvement in decision-making at to environmental questions.
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Legend: +: agreement, -: disagreement, 0: replies around

The company should by all means give more consideration to the more successful application of tools motivating employees to improve environmental performance. It is all the more so, as the company fails to apply even the most obvious – and usually effective – methods (rewards, incentives, acknowledgement).

Judgements regarding environmental risks are also interesting. This factor, in comparison with others, was finally positioned in the middle, which must be due to the constraints of the Q-method, since, according to our former survey, the environmental risks of the company can be considered significant.

Heterogeneous opinions referring to weaker chain links of the company's organisational culture partly regard statements on the role of environment protection in corporate activities. In our opinion, environment protection would form an integral part of organisational culture if all respondents agreed at least in part that environmental questions are equally important for every member of the organisation. According to our findings, unfortunately, this is not the case. Conflicting opinions also reveal the reasons. Colleagues do not share the same value system, which prevents them from appropriately motivating each other. The environmental manager is not unanimously trusted by organisation members, which hinders the successful communication and consideration of environmental aspects. Respondents represented by individual factors judge differently the achievement of environmental objectives, which means that the environmental objectives of the company are not likely to be fully achieved.

Respondents' opinions diverge as to the environmental awareness of the members of the organisation; however, the judgement of the environmental awareness of the members of the organisation does not depend on the concrete unit or level of management the respondent works at. This is an essential conclusion, as it indicates that the perception of environmental awareness does not hinge upon access to information or decision-making authority. Individual attitude is likely to be much more decisive. This is also supported by the fact that the organisational environmental awareness of a company, which is leading in terms of environmental management and environmental actions, has given rise to vastly different opinions.

Taking a closer look at the individual attitudes of respondents in each factor it turns out that loyal respondents neglect their individual responsibility regarding protection of the environment, this is probably the reason why they are so "lenient" when judging the reflection of environmental awareness in the behaviour of the members of the organisation. In all the other factors respondents have a stronger sense of responsibility, which also makes them more critical within the context of the company.

At the same time, respondents who in their own lives make strong efforts to take responsibility and conduct environmentally friendly life-style, are also conscious of their own and their colleagues' behaviour within the company (the group of dissatisfied respondents), and criticise the entire firm. Respondents with contradictions in their inherent environmental awareness (the group of critical participants and those missing environmental awareness the most) are typically more sensitive to such contradictions in terms of awareness also within the company. Critical respondents feel their own personal responsibility and find changing their life-styles as of utmost importance, and yet, they would be unwilling to change their old habits. Respondents missing environmental awareness the most are also fairly responsible people in their way of thinking, but they would hardly make efforts to reduce their consumption.

As we can see, there are interesting correlations between individual attitudes and the judging of corporate environmental awareness, at the same time the Q-methodology does not make it possible to statistically examine causal relations in a reliable manner, because statements relating to the two areas had to be compared with each other in the course of sorting. A more reliable examination of the relations would have been possible if individual attitude had been the subject of separate questions, independently from statements relating to the organisation and serving as independent variables.

With respect to the efficiency of the current motivating tools to increase environmental awareness opinions also differed markedly. Findings tend to show that the company applies various motivating tools in a selective way: most probably it asks the opinion of certain employees in environmental questions and gives feedback as well, whereas it does not involve others. Many doubt the

efficiency of the environmental management system: on the one hand the beneficial impact of EMS on values is not unequivocal; on the other hand some respondents do not deem the application of EMS sufficient to achieve adequate environmental performance.

Opinions also differ as regards motivating tools suitable for the purpose: should employees be given more say in matters of environment protection and is there any need to diversify the motivating tools applied. Those satisfied and the critical respondents for example do not find it necessary to introduce other types of motivators, contrary to the other three factors, where the respondents do.

5. Concluding remarks

Environmental behaviour of companies can be described via components of environmental awareness, highlighting the interdependencies between them. Our research findings undoubtedly indicate that every awareness component has its role in shaping organisational behaviour. Environmental values seem obviously to be of special importance, since in this study we observed a Hungarian company with consistent behaviour regarding its ecological knowledge, environmental attitudes, willingness to act and actual behaviour, where an in-depth analysis of its environmental values apparently shades the picture.

The environmental values of the company are well reflected in the features of its organisational culture. Integration of environmental issues into the organisational culture can be evaluated via the opinions of organisation members (working at different departments of the company) about the basic environmental elements of the organisational culture (see Hypothesis 1 and 3), as well as via the similarities and differences of individuals' value systems (see Hypothesis 2). For the analysis we applied the Q-methodology which proved to be appropriate to explore strengths and weaknesses in the environmental culture of the company.

The very existence of typical opinion groups (factors) indicates that organisation members have different perceptions about the environmental awareness of the company (Hypothesis 3). It does not directly mean that the company would not dispose of some basic elements of an environmentally oriented organisational culture, as due to respondents the commitment of the company and the top management towards environmental protection is of an adequate level, and environmental training programs are obviously successful (Hypothesis 1).

At the same time, incentive methods to motivate the environmental awareness of organisation members are to be profoundly revised (Hypothesis 3). The company, on the one hand, applies very few, otherwise well-established and successful methods to increase employees' environmental performance, on the other hand it does not make use of the motivating power inherent in socio-cultural factors (group identity, group norm, interpersonal relations), which

respondents unequivocally find more efficient than extensive regulation. Participants in the research are convinced that employees can better encourage one another than rules can, they believe in the attitude-changing power of group training, as well as being aware of the company's environmental objectives via internal communication between the top management and the employees.

It seems that issues and measures concerning the value system of organisation members and that of the entire company should be given much more emphasis. The efforts made by the company so far to establish a uniform corporate environmental awareness have failed to deliver the expected results. However, the individual value systems of organisation members seem to be of decisive importance with respect to their behaviour within the organisation, therefore the value component should be much more in the focus within the awareness shaping process (see Hypothesis 2). Environmental training should be designed much more around a profound value basis, while knowledge-elements should rather serve as background. Incorporating the importance of individual environmental values into the recruitment policy could contribute to the employment of committed people and hence a more consistent company environmental culture. Furthermore, built-in processes like an environmental management system should be filled with real awareness of organisation members; else it remains just a vain skeleton.

The examination of one single company is not enough to draw general conclusions. However, findings of the research undoubtedly indicate the need for a stable and unambiguous integration of environmental values into the organisational culture, in order that pro-environmental organisational behaviour appears in a consistent manner in reality. The example of the analysed company shows that even in the case of high-level environmental activities companies may need revision of their organisational (environmental) culture.

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