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Dissertation abstract

**THE ANALYZE OF ENVIRONMENT-CONSCIOUS ATTITUDES IN
THE FOOD ECONOMY COMPANIES**

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1. INTRODUCTION

Sustainable development is the key problem of our age in the solution of which all players of economy and society must take part in. Without the most important fundamental units of the economy, the companies it is unthinkable to realize the paradigm shift that is indispensable for the profound reform of social-economic processes. These processes such as the methods of production, its technological solutions, the design of products and their distribution, the changes of the structure of customer needs, the development of the current society's lifestyle and values – and the list could go on for long – should be reformed in a way that they correspond the global ecological restrictions. Obviously, in all phases of the accomplishment of this huge, overall complex mission companies should play a significant role in, as well.

In the past three decades companies all over the world, but certainly above all in the developed countries have paid more and more attention to understanding the problems of environmental protection and its sustainability and especially to the practical duties related to them. Owing to the characteristics of companies the emphasis was put on the former, the practice that is, and it happened in a mosaic-like way, that is to say certain elements of the solution of environmental-sustainability issues – environmental product-signing, environmental management systems, the elements of ecological marketing, etc. – were integrated in the company practice mostly isolated from each other, accidentally. It seems that the expansion of sustainability factors of company policy has reached a critical level as a result of which the different sustainability means of companies are beginning to form an overall, more or less consistent system. All this reflects how companies have changed their attitude towards the natural environment and the ecological crisis and how it appears in the company object system more and more emphatically. This consciousness-raising process occurs in the form of a declared company philosophy more and more frequently and it may as well mean the fundamental transformation of the company image, the company concept, the tell-tale sign of which is the formation and spread of the concept of a responsible company in practice as well as in the theoretical literature of companies.

In my study I shall elaborate on this ramifying process with special attention to what opportunities are available for companies to publish their environmental-conscious approach authentically.

With customers getting more and more environmentally conscious and the administrative regulations getting stricter and stricter companies became forced to make their commitment to environmental protection widely known for the public. For publishing their environmental

commitment, companies have several possibilities: (1) company philosophy, (2) marketing activity, (3) the application of means serving to materialize environmental-conscious approach.

As stated above, keeping to the rules of length I set the following aims, on the basis of which each chapter is composed:

First: The definition of environmental consciousness, its dimensioning on individual and corporate level, on the joint analysis of which I shall model the conscious attitude of the company.

Second: By making use of the available Hungarian and foreign economic and company ethics literature, doing a critical comparative analysis I shall present the changes, alterations in the traditional company philosophy, object-system, in which companies integrate social norms and environmental values in their company philosophy beside their primary profit-motif.

Third: The presentation of innovative, distinct marketing activities strongly enforcing ecological aspects, company policies emerging in the past three decades, new marketing tendencies, and the strategies and marketing-mix means applied in practice.

Fourth: The assessment of environmental-conscious attitude realization and publication serving means in food economy companies in the light of international, Hungarian and section-level data.

Fifth: The assessment of the environmental-conscious attitude of the companies of food-industry and agricultural activities, as part of the Northern-Plain Region food economy sector via empiric findings.

In my thesis the interdisciplinary approach has been used. Due to the complexity of the field of study I do not present the secondary research documenting, systematizing and analysing the glossary in a separate chapter, but I attach it to the subfields in each chapter.

In the final outline of my field of study I aimed at interlocking it into the doctoral program of Doctoral School of Interdisciplinary Social and Agricultural Sciences and fitting it into the scientific research of the Department of Rural Development and Agricultural Economics.

2. DATA BASE AND METHODS

In the conceptual clarification of environmental consciousness, environmental-conscious attitude and its dimensioning on individual and corporate level I relied on international and Hungarian special literature.

While introducing the traditional company theories I applied the literature on prevailing economic tendencies. When doing the critical comparative analysis of these including the self-value of nature using company theories I mostly consulted company ethical literature.

In the detailed presentation and evaluation on the novelties of marketing tendencies focusing on social and ecological aspects, marketing strategies to their realization and the marketing mix elements to work out the concrete steps of company attitude, I trusted primarily findings of Swiss and German research and Hungarian publications.

In the analysis of the widely spread means of the publication and the materialization of the Hungarian food economy company's environmental-conscious attitude I applied a comparative analysis based on secondary database.

When I examined the environmental-conscious attitude of the companies of the Region, my aim was to work with the biggest possible element number of samples. I had two ways to gather information: on the one hand, I made case-studies, and on the other hand through questionnaire. Keeping to the rules of length I decided on the questionnaire survey, as a case-study may have been as long as 20 pages, thus the number of studied companies would have been fewer and instead of choosing cases at random I wanted to draw an overall picture of the environmental-conscious attitude of the food economy companies of the Region.

I first tested my questionnaire on the 2007. Farmer-Expo. I used the observations and advice that I got from company representatives in personal interviews to create the final form of the questionnaire.

The data on the companies in my study – the first 200 food economy companies of the Northern-Plain Region according to revenue – was provided by the Central Statistics Office. After contacting them through telephone I found out that several companies did not meet the criteria of my study, therefore I carried out only 134 questionnaire surveys.

There are 29 nominal, 50 ordinal (out of which 2 are group forming variables: revenue and number of people categories) and 5 scale type of questions. I tested the inner reliability of the questionnaire on each group of questions with Reliability analysis. My result concerning all questions was 0.895, according to which I found the samples reliable for data analysis.

Choosing the methods to evaluate the questionnaire I considered that there was no high level of measurement in the questionnaire, only ordinal and nominal levels, thus instead of parametrical attempts I chose non-parametrical tests to examine the relationships.

I applied the following methods throughout the analysis:

1. Descriptive statistics: mean, scatter, distribution ratio;
2. Kruskal-Wallis (K-W) variance analysis;
3. Mann-Whitney (M-W) test (in other words U test or rank sum test);
4. Spearman rank correlation;
5. Principal component test;
6. Discriminance analysis.

3. THE MAIN ACHIEVEMENTS AND CONCLUSIONS OF THE DISSERTATION

3.1. The concept and dimensions of environmental consciousness and environmentally conscious attitude

Defining environmental consciousness and environmentally conscious attitude is a very important question both from the point of view of individual- and that of organization-level studies. In both cases, however, it is hardened by the fact that such a subtle system of the studied factors is typical of environmental consciousness which is influenced by the subjective views of researchers on the subject.

By means of specialized literature, I aimed at narrowing down the concept of environmental consciousness at first, then determine the components affecting environmental consciousness both on individual and organizational levels while modelling the presumed relationships between them, finally define what I mean by the environmental-conscious attitude of a company.

I suppose interpreting environmental consciousness is difficult without knowing the attitude to it. In spite of that it is important to distinguish between environmental consciousness and environmentally conscious attitude, because consciousness often appears in attitude influenced by other, outer effects, therefore I find literary definitions incorrect that identify environmental consciousness with the attitude towards environmental protection.

I consider *environmental consciousness* a special value and belief system, the manifestation of which is environmentally conscious attitude. Several components may influence an organization's ecological behaviour, which I divided into two dimensions and sub-groups in my study.

Consequently, I can define *the concept of environmentally conscious attitude on individual level* as an activity described by such quality features, in which environmental values are put to the front and are paid primary attention to by the individual.

I mean by *the concept of environmentally conscious attitude on company level* that environment-oriented way of thinking matures into concrete activities and reforms, on the basis of which a management operates an organization or a company, independent of the fact whether this reform was evoked by a market mechanism or an administrative regulation.

Figure 1. demonstrates the components influencing the environmental-conscious attitude of an organization and the presumed relationships between them.

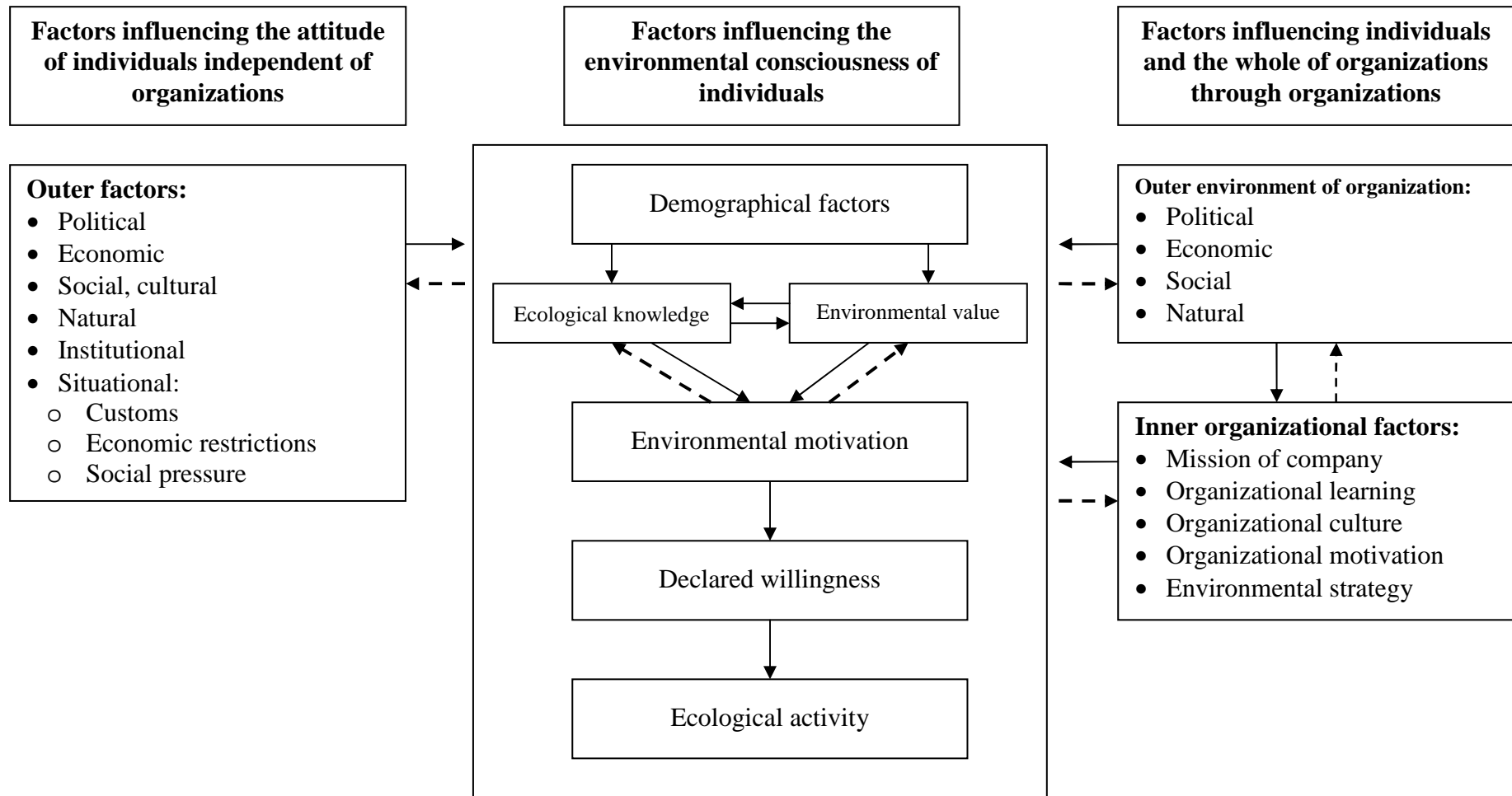


Figure 1.: The components influencing the environmental-conscious attitude of an organization and the presumed relationships between them

Source: own collaboration

3.2. Traditional contra „value-based” company theory

Literatures which deal with company theory are not uniform if company is a separate entity. I agree that company has own sense and this sense is more than the whole bulk of employee’s and leader’s sense. This own sense can we find in the philosophy of company and the study of this link up company theory. That’s exactly why I found important to study the appearance of environmental values in company theory.

H₁: Companies have an indisputable and untransferable responsibility for their environment and for the society. Its recognition can be observed in a now forming and widely spreading company philosophy, which includes ecological restrictions and the face value of nature as well as social norms and also in a company theory reflecting these.

I shall summarize the aims and factors that distinguish the „value-based” company model from the traditional company model in five points:

1. *The recognition of the importance of a moral attitude.* In this respect companies do not deal with environmental/social problems in the hope of or subordinated to profit, but because they consider it their moral responsibility. This philosophy points over sole benefaction. Companies endeavour to minimize their effects on the environment in a way that they try to integrate activities beneficent for the society in most of their daily concerns. For this reason the values of the companies – that have to form an organic part of the mission, strategy and operative plan of the company – need to give directions. In the strategic or operative plans with a consideration for their commitment for local, national or even global communities, value-based companies can realize their social, environmental and financial objects through their everyday decisions. Profit, moral, company self-interest and ethics often conflict. However companies must also understand that certain things are not done because they are beneficiary for us, but because we consider them right.
2. *The acceptance the ideal of free market.* Within the logic of market-economy they attempt to function in a way that their activities also increase the common good. How is all this possible? While the liberal concept of the economy suggests that ethics is not at all necessary in the economy because out of the individual, self-interest guided, profit-maximizing endeavours the „invisible hands” of the market system creates the common

good, responsible companies think that the individual profit of enterprises, companies does not at all lead „automatically” to the welfare of the community. Companies must show commitment to common good in their decisions and deeds as well as undertake accountability. These companies suppose that the players of the economy have an untransferable and undisputable ethic responsibility in the question of the effects their decisions have on others. They must take responsibility for the prosperity of those communities – and not only their companies’ – in which they live and work, let them be local or global, human or wider national communities.

3. *The consideration of the problems of the environment and the society apart from financial concerns.* In this case companies may take a respectable place in the community; their customers can become loyal to it. „Value-based” companies win a kind of product-loyalty from their customers, because their appeal exceeds their products. As opposed to most trade transactions if we buy the products of a company we deeply believe in, it is more than mere purchase. It has been proved that social participation does not necessarily have to be sacrificed for profit-maximizing as one can strengthen the other. The better they accomplish their commitment for social change in their business activities, the more loyal customers will be attracted and the more profitable they will become. That is, responsible management means such a decision making in which „*decision makers choose rationally from among morally acceptable alternatives.*” In case of economic organization decisions morality means that the organizations take the impacts of their decisions on the affected natural environment and communities into consideration and recognizes eco-systems and humans as valuable entities.
4. *Difference between profile and identity.* The environmental moves of traditional companies are mostly – openly - done for improving image. Most companies haven’t reached the point to re-evaluate their core activities according to ecological and social aspects. For the time being, environmental protection steps do not appear in their organizational identity. As opposed to them, „value-based” companies are committed to explore and solve ecological and social problems on each level of the organizational structure and activities.
5. *Society, natural environment and eco-systems are valuable in themselves.* They find their existence and health important independent of the fact whether they have direct profit from them or not. Parties involved in the companies’ activities are not treated as means or resources but as aims. They think that regulations and encouraging systems are necessary, but not sufficient for the company responsibility as a frame. For this purpose the balance

of ecological diversity, social welfare and prosperity of the economy are needed. Companies organize their production processes and follow their environmental effects taking these into account.

All in all, it can be concluded that “traditional company theories” – if they raised the question at all – would be at a loss to face several facts of the crisis of the past few decades. They would not be able to answer the question why thousands of companies introduce environmental management systems, why they make environmental and sustainability reports. Similarly to the whole economics – beside traditional theoretical tendencies, parallel to them and not developing them - a new kind of company theory concerning the long-term balance problems of the natural environment is being formed. Although definitely “*a very exciting disturbance characterizes company theories today*”, traditional company theories seemingly do not pay attention to these problems.

A new interdisciplinary company theoretical approach is necessary, as from ecological and social point of view it is an indispensable condition of the creation of a sustainable economy that other than financial considerations should be part of economic decisions.

To achieve this goal we should endeavour to decrease the role of international companies and expand economy based on small companies with local owners and local affiliations. If this happens, due to the local commitment and personal contacts of the company leaders, responsibility for different groups and natural environment affected by the company’s profile will more probably prevail.

Such companies can put their „different management” philosophy into practice in the name of their commitment to social responsibility and environmental protection. Profit deriving from it may encourage other companies that take the valorisation of environmental-social side with reservations in the company philosophy.

The comparative study based on economic tendencies and company ethic approaches supported my hypothesis that *companies have an undisputable and untransferable responsibility for their environment and the society. The recognition of this can be seen in a now forming and widely spreading company philosophy and theory taking ecological restriction, the face value of nature and social norms into consideration.*

Only short and difficult to access documents are available about what is said in company philosophies and theories, which hardly provide any information on the objects and values of companies. However, the strengthening of customer environmental awareness and stricter administrative regulations make companies inform the public on their commitment to

environmental protection. A new kind of management policy, the introduction of environmental marketing and the application of environmental management means give help to companies for that.

3.3. Eco-marketing in company's practice

H₂: Change in the philosophy of company management and the elaboration of environmental strategies are not enough for environmental-conscious attitude to show in practice. Traditional marketing activities and the „greening” of the whole of company management is necessary for it.

In the future of every company it can be crucial whether their leaders realize the possibilities of environmental challenge and to what extent they are able to create an environmental-conscious company management. The environmental management-system may be an important step towards sustainability and the preservation of environmental values, however marketing could be the key – through communication activities – in publicizing and spreading these ideas thus forming customers' attitude in this respect.

As a result of the increasing economic competition the importance of marketing seems to be valorised, consequently new ways have had to be found. Due to the growing social expectations and the competition, a novel marketing approach and an innovative, distinctive management policy was to be implemented.

Companies have to find a balance between their profit-hunger, satisfying customer needs and the matters of the environment. Owing to the ever-increasing market rivalry and the customers being more and more aware of their environment, in case of environment-friendly products a more object-oriented, powerful marketing strategy is necessary, which is in concord with the whole of the company's profile.

That is to say, the environmental-conscious attitude of companies in itself is not enough for making use of the advantages deriving from a positive environmental concern. They need to pursue more active communication, to „green” the whole of marketing activities.

Thus marketing seems a possible means to naturalize and expand environmental protection both among customers and in company practice. This type of marketing with a distinct object- and means-system representing an environmental-conscious philosophy is called green-, environmental-, ecological- or eco-marketing.

The aim of *eco-marketing* is to raise the environmental consciousness of the society to a level which creates an ecology-based environmental culture for all members of the society and also to provide customers with the possibility of consuming according to these principles.

The developed concept of eco-marketing (dual management) is concerned with creating an environment-oriented competition and transforming the market. In this approach integrating ecological aims is also central, while the social aims emphasised in the question of sustainability are pushed to the background. Starting out from this idea, „the marketing of ecology” could be considered the first level. The second level could be such an approach and system of means that provides frame conditions, that is environmental politics and the marketing of environmental-friendly products. In other words, the concept of dual management means that marketing is on the one hand concerned with operative company functions (purchase, production, sale), and on the other hand as a management concept it provides a market-oriented coordination between customers, trade and the market competition while taking environmental and social points of view into consideration.

Swiss and German researchers have developed the concept of integrative eco-marketing from the dual management philosophy of eco-marketing. Beyond the „marketing of the ecology” another, second level is needed, which is called „transformative marketing”. The two levels are jointly called *integrative eco-marketing*.

Integrative eco-marketing means that eco-marketing focuses on ecological problems in the formation of company philosophy and companies change their social and political frame conditions through transformative marketing, so that they guide customers’ buying and using habits towards eco-products. This is not only an innovative approach to eco-marketing, but a return to the critical points defined in the concept of eco-marketing, thus a structural development of previous considerations.

Expanding eco-marketing to the outer conditions of the market, environmental politics and the factors influencing the customers’ value-system all mean an important step towards sustainable development.

Keeping to and integrating the domains and objects of sustainable development in practice is another step, which leads to the *marketing of sustainable development*. Thus the marketing of sustainable development, as a next level follows organically from these, but also diverges from them.

The marketing of sustainable development is such an innovative theory that deals with environmental and social problems and customers’ needs. As a starting point the valorisation

of ecological and social aims can be mentioned that have to serve to satisfy customers' demands.

This branch of marketing – like the integrative eco-marketing – can be understood as a double level. This interpretation of marketing does not only focus on the market and rivals but a multi-direction orientation is formed taking all the three pillars into consideration, which expands to the whole company. We cannot however leave out the traditional marketing provisions either, because these determine the future of the company. It is essential that the companies can take advantage of the changes brought on by environmental and social factors as market opportunities. The sooner a company recognizes and applies these future-oriented trends, the more effective it can be on the long run.

The greatest proceeds of the marketing of sustainable development is that on the one hand it encourages customers to utilize sustainable products and services, on the other hand – having an active influence on political and public frame-conditions – it can have sustainable and environment-friendly products enter the market successfully. This branch of marketing provides opportunities for customer and company demands as well as expectations from the environment and the society to be fulfilled just as economic interests.

All in all, I found that companies can concretize and put into practice the social and environmental aspects of their management philosophy and policy via their elaborate strategic and environmental management, but it gets through to people through marketing. Marketing with strong convincing power and information supplying capability can widely inform the society through its communicative activities.

If the most operative components of the environment-oriented marketing strategy, the environmental marketing-mix elements are worked out in the name of environmental awareness, then companies have several options (environmental report, distinctive marking of environmental-friendly products, cooperative sale of environmental-friendly products) to authentically publicize their commitment to environmental protection.

The study of theoretical and practical application of the ecological approach of marketing has supported my hypothesis, i.e. *change in the company philosophy and working out environmental strategies are not enough in themselves for the positive environmental consciousness to appear in practice. To achieve this goal, the „greening” of traditional marketing activities and the whole company management is necessary, too.*

3.4. Methods of realization of the environment-conscious attitudes

H₃: Hungarian food economy companies have huge unexploited possibilities in management methods to publicize environmental consciousness and put it into practice.

In the study of means – ISO, EMAS, environmental report, online marketing, signalling environmental-friendly products - I exclusively concentrated on those that can widely and authentically inform the public on their commitment to environmental protection and can play a role in the development of customers' environmental awareness through their communication activities.

The declaration of independent certification on products raises confidence, which is essential in case of food products, as they are a kind of confidential goods. In 2006 in Hungary 1000 companies had ISO 14001 certification – out of which the percentage of companies in the agrar-sector is 5% and that of food-, beverage- and tobacco companies is 3% – while in Russia or Spain their number is nearly 10.000. In 2007 11 Hungarian companies had EMAS certification, none of which belonged to the food economy sector.

In the survey of KPMG in 2007 100 outstanding companies of 19 countries were examined in terms of to what extent they make environmental, social, combined environmental-social and sustainability reports. The majority of these companies, 65% of them made environmental reports, 11-12% – in almost the same portion – made social, combined and sustainability reports. In 2007 KPMG made another survey on the 100 outstanding companies of 19 countries and examined them broken down into branches. The financial and insurance sectors are prominent, since 30% of the companies in these sectors made separate environmental reports, while 10% of them mentioned the environmental aspect as part of the annual report. 25% of the companies in the trade sector published separate reports and 12% of them dealt with the environmental effects of their activities as part of the annual report. Food economy companies made both reports to a similar extent, 25%. According to the data of KÖVET, in Hungary in 2006 21 companies, whereas in 2007 more than 30 companies made environmental reports, environmental statements or sustainability reports, none of which belonged to the food-economy sector.

Environmental reports have a long way to go before they reach the importance of other, for example financial reports of companies. Companies that aim to publicize their environmental report authentically have to get over aspiring to meet solely customer requirements and standards.

The accessible website of companies has been providing new opportunities for publishing reports for a decade now. In 2007 in England 677 reports, in Germany 302 reports were made public on the internet compared to 17 reports in Hungary. None of these 17 companies are from the food economy sector.

Considering that none of the Hungarian companies publicizing their reports are from the food economy sector, I found it important to examine the online sustainability marketing of the international and Hungarian subsidiaries of leading international companies from the food economy sector to see how their willingness to make reports and publicize them changes as a reaction to foreign pressure.

During the study of Hungarian website it turned out that they hardly supply any information on the responsible behaviour of companies. It may seem that companies do not seriously concern the question of responsible attitude from social-environmental point of view, or at least it is hard to find out whether they are responsible or not in social and environmental matters. The difference between the home country and Hungarian webpages is rather remarkable, the cause for which could be that company leaders think that the requirements of Hungarian customers and other related parties are lower.

The methods, reports and signals examined during the justification of the hypothesis can not be interpreted in themselves; they are part of a quite complicated system. They might not mean an advantage in the competition; they only symbolize the system behind them. However, as the acquisition of the certifications or labels reacts upon the whole company system spreading on to each branch thus reforming the whole economy, no wonder that the study of its effects on company environmental protection is paid distinct attention. However these spreading effects can only be noticed rarely and sporadically in case of certain sectors or companies.

The numerical research of the methods on international, national and sector level supported my hypothesis that *Hungarian food economy companies have huge unexploited potentials in management methods for publicizing their environmental consciousness and putting it into practice.*

3.5. The analyze of environment-conscious attitudes in the food economy companies of the Northern-Plain Region

H₄: Ventures with higher revenues have more possibilities in the field of environmental protection and are perhaps more environmental-conscious than those struggling with everyday survival problems.

The analyze of the distribution of companies according to the number of employees – this sample is representative of this group creating criterion – I can say in almost half of the companies, 45% of them the number of employees falls between 20-49, 27% employs 50-99 people and 28% of the companies employs over 100 workers.

61% of the companies belong to small-revenue category, that is their annual revenue does not exceed 500 million forints. 12% of the companies have a revenue of 500 million – 1 billion forints and 27% makes over 1 billion forints a year.

The majority of the companies, 78% function as limited companies, 15% are joint-stock companies and 7% do economic activities as deposit companies.

With the 6. question of the questionnaire I investigated *how the respondent regards the effects of environmental protection to the success of the company.* (Figure 2.)

It is significant that according to 7% of them environmental protection has no, while 58% think it has little effects on the success of the company. 35% considered this effect medium or considerable, but nobody granted extraordinary significance to environmental protection. Nearly two-thirds of the respondents regarded the beneficiary effects of environmental protection small, which clearly reflects in the following findings.

The total average is 2.31 while the scatter is 0.66. I reckon this tendency can not only be observed on regional level and in the discussed sector relation. The findings of similar research carried out nation-wide support it, too (MÁLOVICS - RÁCZ, 2005; NEMCSICSNÉ, 2005), and claim that around 40-50% of the representatives of companies from different sectors of the economy think that today little does environmental protection impact company success.

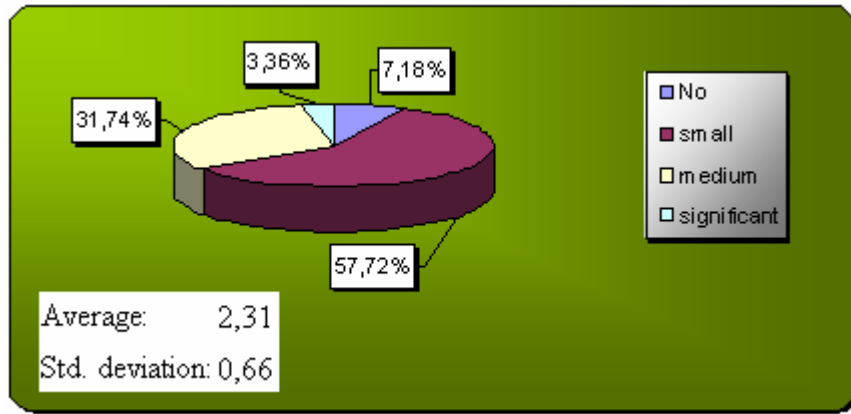


Figure 2: The effects of environmental protection measures on company success

Resource: own collaboration

The leaders had to grade (question 4.) on a 5-grade scale (1-5) *what emphasis each object is given at the company.* (Figure 3.)

The figure clearly shows that most of the leaders considered long-term profit growth the most important followed by finding new markets, cutting down on expenses and short-term profit growth. As for environmental protection and the improvement of image we can say that companies are less sensitive to these aims.

The answers correspond to those of Szolnokiné's survey carried out in 2003 in the region among food economy companies. Then environmental protection was one of the last in the company aims and we can see that the attitude of companies to environmental protection has not changed these days, either.

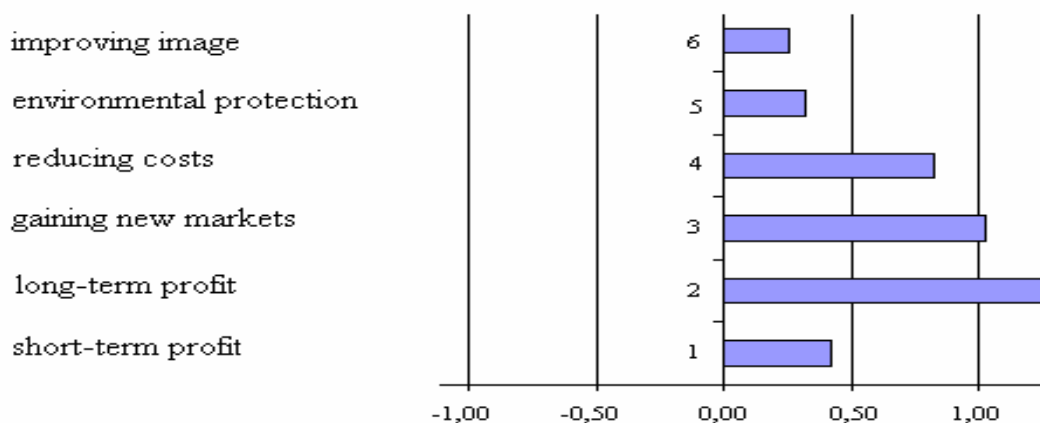


Figure 3: The significance of company aims

Resource: own collaboration

In connection with the previous question the respondents had to grade (question 5.) on a 7-grade scale (-3, +3) “if they spent more attention to environmental protection at the company than at present (decrease of emission, development of environmental-friendly products, etc.), how it would affect each company objects”. (Figure 4.)

Through the evaluation it turned out that the presumed measure would first of all improve the environmental-protection condition and the image of the company, which aims the leaders did not rank as most important formerly. It would enhance the finding of new markets and the long-term profit growth to a medium extent; however it would technically not affect the decreasing of expenses at all and would influence the short-term profit growth negatively.

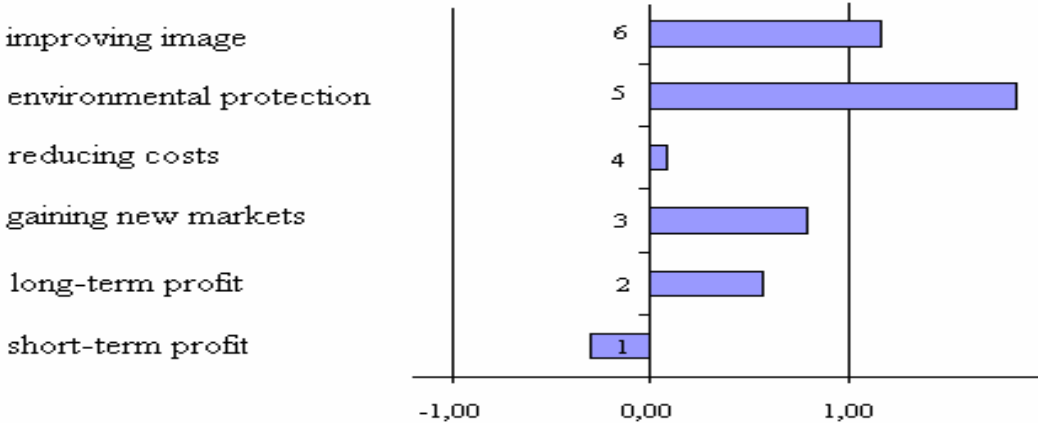


Figure 4: The significance of company aims in case of growing environmental-protection measures

Resource: own collaboration

With the 1. question I examined „whether the companies have a formalized environment-centred management system (ISO 14001, EMAS) or if they are planning to establish one in the near future”. (Figure 5.)

In the Region only 8 companies have the certificate and 2 claimed that the ISO 14001 system is being established now. Out of the companies with ISO 14001 standard 5 (67%) belong to the small-revenue category, 3 (33%) are have large-revenues and none of the medium-revenue companies have ISO 14001 certificate. It is worth considering that out of the 9 companies of the large-revenue category only 3 have the ISO, the rest do not even plan to introduce it. None of the medium-revenue companies possess the certificate and do not plan its introduction. Those companies that are planning on it are all from the small-revenue category. None of the studied companies have EMAS certificate or plan on introducing one.

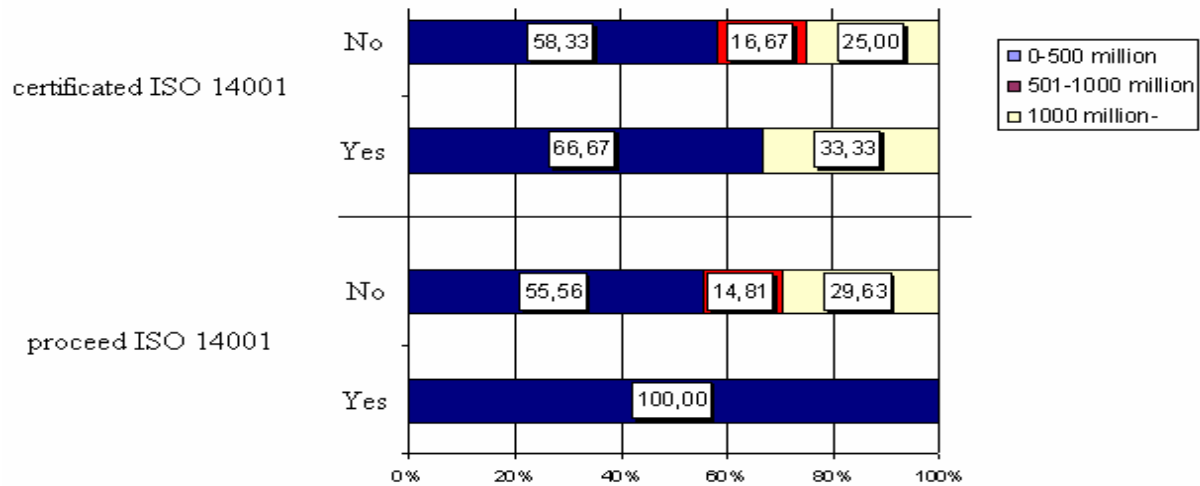


Figure 5: The significance of company aims in case of increasing environmental protection measures

Resource: own collaboration

Not only in the Region but in Hungary have little food economy companies which have EMS. In 2006 in Hungary 1000 companies had ISO 14001 certification out of which the percentage of companies in the agrar-sector is 5% and that of food-, beverage- and tobacco companies is 3%.

In the following I examined according to revenue categories (3. question) „to what extent each factor influences the company to introduce environmentally friendly management”. (Figure 6.)

It is visible in the figure that medium-revenue companies are less encouraged by economy, competitiveness, the requirements of tenders and the owners' expectations to introduce environmentally friendly management than small- or large-revenue companies. In the latter two basically all the factors appeared with the same order. Compliance with regulations, partner and customer expectations are very much the same in each category.

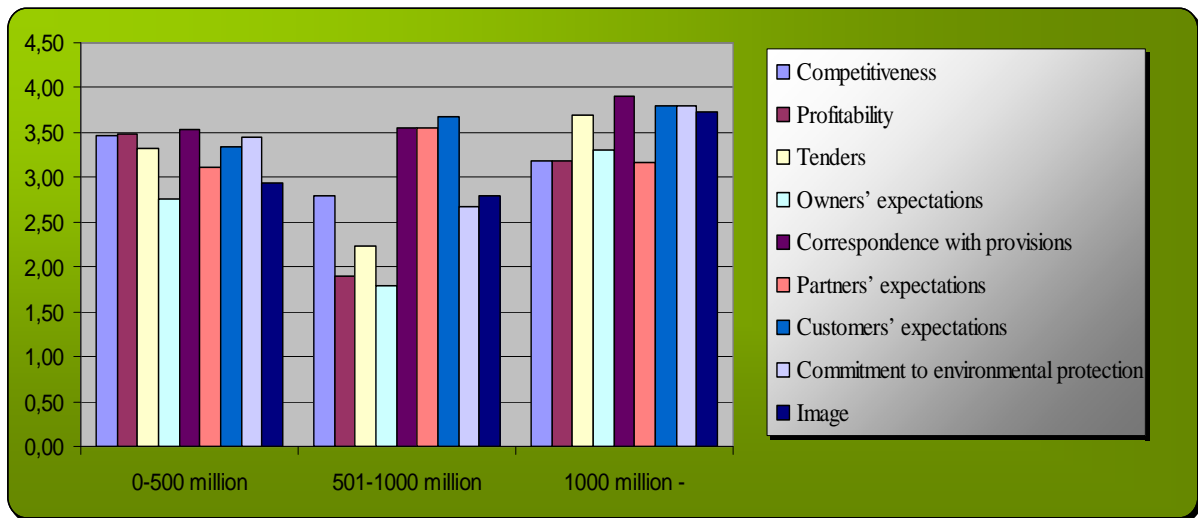


Figure 6: The relation between environmental-friendly management factors and revenue

Resource: own collaboration

Using Kruskal-Wallis non-parametrical Rank Sum Test a difference can be observed between the mean-points of the first four factors – the values are under $p=0.05$ significance level – which came about because the significance of these factors was judged differently by the companies of the three revenue categories. Subsequently, I carried out a pair-wise comparison with M-W method and I found that in case of the small- and large-revenue companies there was no significant difference in the judgement of any factors.

Why the factors were judged differently cannot be explained precisely from the findings. Probably the small-revenue companies regard the mentioned factors more important – economy, competitiveness, requirements of tenders and owner's expectations – because they hope to find new markets or improve their image with this. The large-revenue companies manage themselves modelled on the traditions of their international relations or foreign partners.

My results correspond to Szolnokiné's regional findings (2005), which show that in the food industry especially regulations influence companies. Apart from them the expectations of foreign customers and rivals' activities are inspiring. The home market and the effects of the media are insignificant.

My results partly reflect the outcome of the „In competition with the world” (HARKAI ET AL., 2003) national research programme, according to which companies are primarily encouraged to introduced KIR by the stricter and stricter provisions and the partner's and customer's

expectations. NEMCSICSNÉ (2005) in her PhD dissertation based on a nation-wide survey also mentions the stricter state intervention and the improving company image as inspiring factors. In the national survey of MÁLOVICS – RÁCZ (2005) companies listed first of all image, partner's expectations and tenders, which factors were highlighted by the companies of the Region, as well.

In the light of international and national results I found it interesting to look into the question of *whether companies are concerned with the publication of their impact on the environment and/or other data on the environment.* (question 19, Figure 7.)

50% of the small-revenue companies do not at all publish their environmental data, 39% publish them as part of the annual report and 11% of them as separate environmental report. 50% of the medium-revenue companies do not publish their environmental data in any ways, while the other half of the group informs the public as part of their annual report. In case of the large-revenue companies this rate is 43% and 57%.

Findings on regional level do not reflect international and national tendencies. In professional literature it can be read that in the past decade the number of those companies that are concerned with the environmental effects of their activities and also publish about them authentically in the form of different reports is internationally growing (annual reports, environmental protection declaration, environmental report, authority report). In Hungary on the basis of the KÖVET published in 2008, the number of published environmental reports decreased in 2000-2006 and increased in 2007.

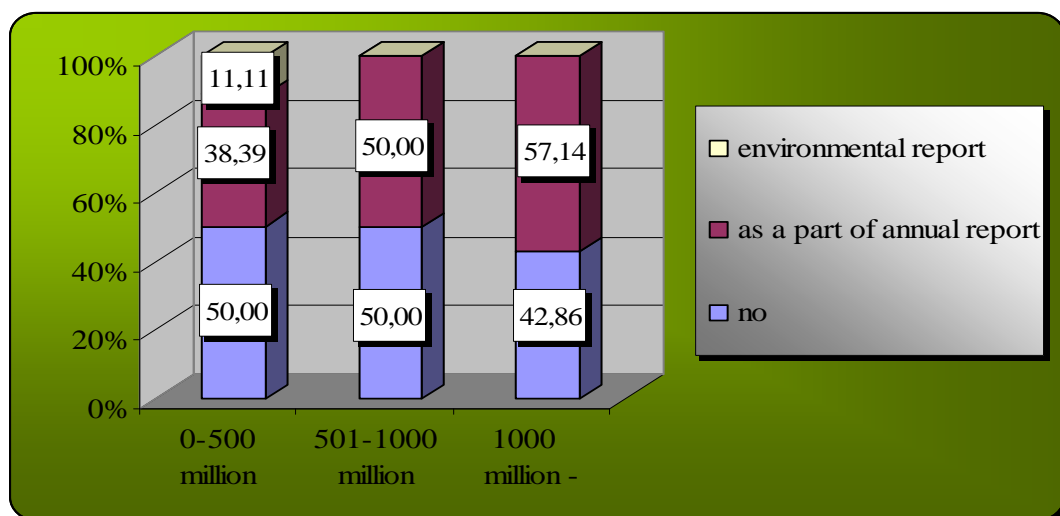


Figure 7: The publication of the effects of company activities on the environment

Resource: own collaboration

Figure 8. presents the relation between the environmental problem and the role of environmental protection concerning each field (questions 16. and 17.). The majority of companies claim that the largest environmental problem is caused by repair-maintenance, whereas the smallest hazard is transportation and distribution. This result is quite interesting as to why companies judged transportation little damage to the environment. In the other fields the burden of environment appears in about the same order. Environmental protection was considered very important in the questions of the use of packaging and waste management, but in all areas the importance of environmental protection was ranked higher than the environmental problem. In the above areas and in case of raw materials and energy carriers this rate is nearly double.

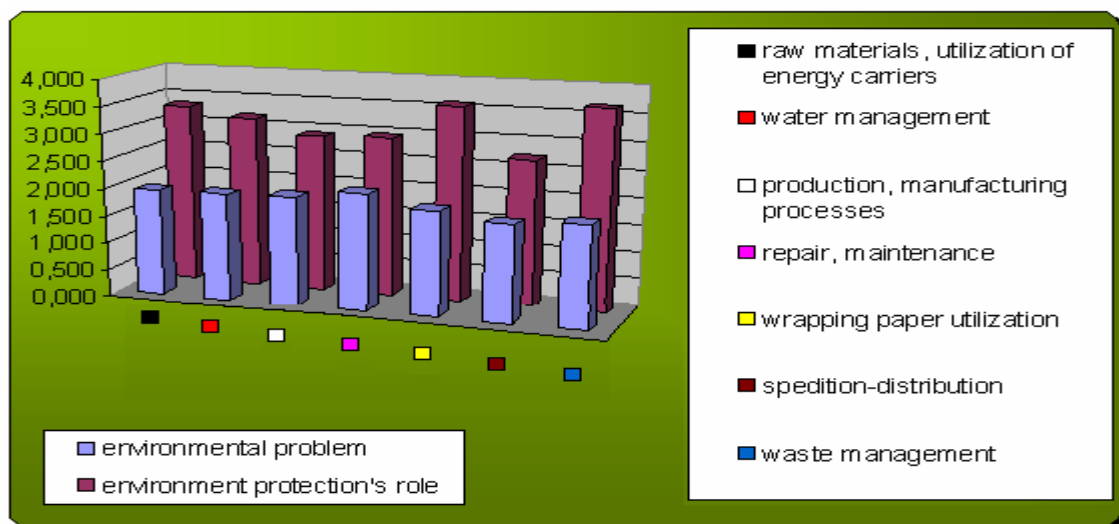


Figure 8: The relation between the environmental problem and the role of environmental protection in certain areas

Resource: collaboration

With Spearman rank-correlation I calculated a correlation coefficient for certain areas between the environmental problem and the role of environmental protection. In the repair-maintenance processes there was not even a weak correlation ($r < 0.3$), in the other factors medium ($r = 0.5-0.7$) or medium-strong correlation ($r > 0.7$) was detected.

Investigating similar questions, HARKAI ET AL., (2003) came to corresponding findings, that is Hungarian industrial companies integrate environmental considerations, activities mostly in their technological and other material processes as well as safety provisions for workers, while these can hardly be found in their financial policy or outer communication.

Throughout the questionnaire survey of the food economy companies of the Northern-Plain Region at times contradictory results arose about the environmental-conscious attitude of companies. One possible reason for that could be that companies in the Region attach little importance to the beneficiary effects of environmental protection on the success of the company, and among the aims of the company long-term profit-growth, finding new markets and expense decrease are in the first place. They reckon if they put more effort in environmental protection, it would solely improve their environmental protection activities and image pushing the other aims of the company to the background and also setting back short-term profit decrease.

The other reason is – which has contrary effects – that company leaders are pushed by various forces to increase their environmental protection activities. Looking at them in revenue category classification it can be concluded that companies are first and foremost trying to meet the requirements of regulations and the expectations of partners and customers. Those companies whose owners order them to pursue environmental protection activities expect their partners to do so to a higher extent.

Taking all the above into account, my hypothesis of *companies with higher revenues having better potentials in the field of environmental protection and perhaps being more environmental-conscious than those struggling for survival* was not supported by my findings, therefore I reject it.

4. NEW SCIENTIFIC ACHIEVEMENTS OF THE DISSERTATION

1. In my thesis I consider the following a novel result: **I re-modelled the environmental-conscious attitude on company level** by determining environmental conscious attitude on individual- and company-level and the common interpretation of the two dimensions.
2. Another novel result of my study is a **critical comparative analysis of traditional theories of companies based on prevailing economic tendencies and other corporate theories based on company ethics**, taking ecological restrictions, the face value of nature and social norms into account.
3. Another important result of my dissertation is **the presentation of marketing activities significantly considering ecological aspects** that have appeared in the past three decades and that of the development of the latest marketing tendencies – integrative eco-marketing, the marketing of sustainable development. I also present the application of strategies and marketing-mix means **in theory and practice**.
4. I also regard the results from **the international, national and sector analysis of management means for realizing and publicizing the environmental-conscious attitude** of food economy companies remarkable.
5. I reckon that the results from the comparative **analysis of online sustainable marketing** of foreign multinational food economy companies and their Hungarian subsidiaries are also novelties, especially the study of commitments published on company websites and their provisions for meeting requirements.
6. I suppose the **questionnaire survey** of my dissertation carried out among the food economy companies of the North-Plain Region and **the results from it via statistic methods** are authentic and new; they reflect the environmental sensitivity of the first 134 – according to revenue – food-economy companies of the Region.

5. PUBLICATIONS

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