UNIVERSITY OF WEST HUNGARY FACULTY OF WOOD SCIENCES JÓZSEF CZIRÁKI DOCTORAL SCHOOL OF WOOD SCIENCES AND TECHNOLOGIES MANAGEMENT IN THE WOOD INDUSTRY PROGRAMME

FORMING ENVIRONMENTALLY CONSCIOUS CONSUMER BEHAVIOUR AND EXPLORING ATTITUDES TOWARDS WOOD AND FURNITURE INDUSTRY PRODUCTS

PhD thesis instalment

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1. Topicality of the theme

The worldwide spreading of environmental problems caused anxieties not only among scientist but also among the population at the end of the 20th century. A segment of consumers has been created who practice environmental conscious approaches in their everyday lives. The fact that environmental protection issues came into the foreground resulted in the phenomenon that environmental protection aspects have occurred in the market activities of companies as well. It is definitely presumptive that these effects will be increased in the future (environmental conscious consumer needs, government directions about environmental protection) that necessitate the consideration and validation of natural and environmental protection aspects in more and more general marketing activities.

People are looking for the causes of climatic changes, they try to prevent them thus *renewable resources and energy sources* were put into the limelight. Forests and wood as resource are important bases in sustainable development. *Every product made of wood is a means of climate protection since every wooden product stores 50% of the carbon coming from carbon- dioxide in the air (Molnár 2010).*

We are affected by two effects in the area of wood usage nowadays. One of them is the *anxiety about the growing exploitation of trees and thus the reduction of forest territories* of the last decade, which contributes to the increased amount of carbon-dioxide in the atmosphere. This anxiety resulted in the growing "fashion" of producing materials to substitute wood ("Save a tree by using substitute products!" actions). The other effect is *the advertisements of the health beneficial, environmentally friendly quality – due to their recyclable and degrading nature – products made of "natural" raw materials.* The problem is that the public cannot differentiate between cutting down trees in planned forest management and destroying forests in certain regions (tropics) of the Earth (Kovács Zs. 2000). If we compare wooden products with their above-mentioned competitors according to their effects on the environment, *wooden products show obvious advantages*.

Environmental researches about wood as a raw material and about wooden products began first at our university in Hungary. They were usually of scientific and technological character. This dissertation provides an approach of wood use from the aspect of marketing, with the understanding, definition and the analysis of the formation of consumers' environmental consciousness, as well as the identification and analysis of influential factors and the revelation of the relationship of consumer attitudes towards wood as material in the centre.

2. The aims of the dissertation

We need to reform people's ideas about the environment – consciousness framing – in order to eliminate environmental problems. The aim of the study is the enumeration of the possibilities and conditions of the necessary changes and consciousness framing with special emphasis on the creation of consumer environmental consciousness. In this territory the analysis of the preferences and influencing factors – that determine the choice between wooden products and their substitutions - is necessary. The aims of the dissertation are as follows: 1. *An overview of the national and international technical literature and researches* that:

- *identify the members on the environmental protection market* who, because of their anxieties about the environment, follow the principles of sustainable development and take part in handling environmental problems;
- define *consumer environmental consciousness*, determine its dimensions, analyse its formation through personal consciousness models and determine factors influencing environmental conscious consumer behaviour.
- 2. Creating *new and innovative models* based on the theoretical overview by *identifying the members of the environmental protection market, the formation of consumer environmental consciousness and their influencing factors.*
- 3. Environmental protection aspects have occurred in different areas of marketing activities that assist the formation of environmental consciousness. The aim is the definition of *eco-marketing* and the detailed examination of its techniques, the *marketing mix elements*.
- 4. The revelation of *general environmental attitudes among the population of Sopron* with the help of the *hypotheses* in the research and the author's own models (on a local level in the given framework) *as well as the analysis and revelation of attitudes towards wood and wooden products on the furniture market.*
- 5. As a result of all these giving *new and innovative statements* and identifying the *factors of choice between wooden products and their substitutions*.

3. Research method

The research method outlines results using approaches from modern scientific theories, going from *general facts towards actual ones*. During processing technical literature the author synthesised and integrated available national and foreign research results and models and so the *identification of influential factors and the creation of own models became possible*.

The *secondary and primary qualitative researches* made possible for the author to reveal further factors for the definition of both general environmental attitudes and the attitudes towards wood and wooden products. Qualitative research is an unstructured, revealing type of research method, based on a small sample and serves the better understanding of a problem (Malhotra 2002), so it is appropriate to reveal the deeper emotions and motivations of consumers.

The author set up *hypotheses* based on all these and tested them with the help of quantitative researches. *The* method *of quantitative research was a personal interview based on a structured questionnaire*. So the author gathered statistically analysable and generalisable data first about general environmental attitudes of the population then about attitudes towards wood and wooden products (wooden furniture).

Theses, statements, new and innovative results could be defined about environmental conscious consumer behaviour based on the results.

4. The result of the theoretical research

The author outlined three new and innovative models as a result of her theoretical research. The first one identifies the *members of the environmental protection market*, the second one describes the *creation of environmentally conscious consumer behaviour* while the third one summarises the *factors influencing environmental consciousness*.

She has come to the conclusion during the study of technical literature, national and international researches that it is not feasible to blame the formation of problems and their solution on the delay of companies and government legislation exclusively. We can identify those personages who could take the responsibility for handling environmental problems because of their anxieties about the environment and because they follow the principles of sustainable development and it is necessary that they should cooperate. In restriction, *companies, consumers* (population), the *state and civilian organisations* can be identified as the members of the environmental market, they are the ones who could do something for the

environment directly while *educational organisations, the media and research-development institutions* have an indirect effect in the handling of problems. *Organisations above nations* (e.g. European Union) can create the frames and conditions of alternative activities through action programmes, benefits and grant applications.



Members of the environmental protection market Source: author's own model

Unfortunately, experiences and research results show that the members of the market divert the responsibility. Every member expects the other to take the first steps towards environmental protection.

The author has created a general model with the task to explain the formation of environmentally conscious behaviour. As a result of the knowledge of environmental problems, a kind of ecological knowledge is created which means the possession of the entire knowledge. The acquisition of knowledge is influenced by *personality* factors. The knowledge created affects ideology (belief), *values* and attitudes. The value system of an individual is most strongly influenced by impulses from his or her direct environment (e.g. values of the family in connection with environment, friends, teachers, national values). Values show what we consider good, bad or worth following. They exist in our apprehension; they are choices backing up attitudes. It is essential that values have social or individual directions. Beliefs are the thoughts attitudes consist of. They are thoughts, concepts and the conclusions drawn, for example: how effective the consumers thinks he is in solving environmental problems (beliefs about personal effectiveness), his belief that he can generate a change (directing beliefs), who he thinks has the responsibility or how he perceives the beliefs of other society members about behaviour.(normative beliefs). We have to highlight that emotional bonding, experiences (childhood experiences in nature, values in connection with family environment, family-friend-teacher role models, and effects of education) are extremely important in the formation of attitudes; they are affective, emotional components of attitudes.



Creation of environmental conscious consumer behaviours Source: author's own model

The environmentally friendly attitude created this way may result in positive willingness to act (which can be considered as co-native, behavioural tendency component of attitudes). At the same time, willingness to act is affected by *motivations* with different motives. Primary motives determine behaviour forms if a person is willing to do something (e.g. environmentally friendly life style) while selective motives affect a certain action, which activities is a person willing to do (e.g. go by car, bike or on foot in the rain). We cannot draw conclusions about actual behaviour from willingness to act since, on the one hand, it depends on the interaction of individual components and inner consistence, on the other hand, several situational, behavioural factors influence actual actions, like habits, convenience, economic limits, social pressure, extent of sacrifice (time, effort, cost), the lack of infrastructure and in the case of environmentally conscious shopping some other market factors also work (price, quality, place, eco-communication and eco-label).

There is a response between individual factors in the process. The actual realisation of individual components has a modifying effect on the preventive factors.



The author has created a complex figure introducing the influential factors of consumers' environmental consciousness.

Complex model of consumer environmental consciousness influencing factors Source: author's own model

The environmental consciousness of a consumer depends on the *socio-cultural values of the country or nation* the person lives in. *Education* and the *media*, with the *news, trends and fashion* they convey, all affect the sensitivity of a person towards environmental problems. Other influencing factors are: the environment-oriented activities of *companies*, environmentally friendly *choice of goods*, actions of 'green' civilian organisations, government legislation and research and development. Another group of influencing factors are the demographical characteristics, like gender, age, qualification, income, family life cycle, place of living. Place of living determines environmental experiences. Environmental consciousness of a person is also affected by emotional bonds, motivation towards

environmentally conscious behaviour, the life cycle of the reference group and the social group (norm), the strength of past habits and other situational characteristics. The total knowledge of the environment, ecological knowledge, values, beliefs and environmental attitudes determine consumer environmental consciousness and the effects they have on each other.

Eco-marketing as a means of consciousness framing

Social environmental consciousness can be assisted by eco-marketing and its methods, on the one hand, by providing information for its task, on the other hand, by creating and assisting consumption and supply appropriate for environmental principles affecting the whole economic area.

The worsening of environmental problems and the appearance of health- and environment conscious consumers groups induced that environmental aspects had to occur is the market and marketing activities of companies. Eco-marketing means the harmony of ecology and economy in market-oriented company management.

The definition of eco-marketing is not standardised in the technical literature. It is a new tendency according to which the starting point of marketing activities is environmental protection. There are many definitions for eco-marketing according to the appearance forms of "greening", like

- "ecological marketing" (Fisk 1998),
- "green marketing" (Ottman 1992; Peattie 1995),
- "environmental marketing" (Coddington 1993),
- "social marketing" (Kotler 1998);
- "sustainable marketing" (Fuller 1999) and
- "greening marketing" (Charter and Polonsky 1999).

Maybe Coddington's (1993) theory is the most widely known version. According to this theory environmental marketing is a responsible company marketing that considers the issues of environmental protection a possibility for developing and increasing business enterprises and exercises them in every possible field.

Kotler (1998) uses the expression social marketing that includes social and ecological responsibility since Kotlet takes economic profitability for granted when talking about marketing. In Kotler's opinion, social and environmental protection responsibilities will have

to be included in the responsibilities of a company so in an ideal case it will be possible to leave out the adjectives eco-, environmental-, environmental protection- and social and to talk about general marketing which will include everything we define as environmentally conscious marketing today.

As a result of environmental, social and economic changes special marketing areas have occurred. From these the author highlights social marketing in which cooperating partners do not appear on Hungarian and foreign markets alone but together with uniform image to help their products enter the market and become successful (Gaál 2003). There are several international examples for social wood marketing which were called into existence to counterbalance negative publicity of wood and to emphasize the advantages of wood among consumers. Social wood marketing organisations started from different situations and with different content in each country.

5. Primary quantitative research

5.1. General environmental attitudes among the population of Hungary

During the first primary quantitative research the author revealed general environmental attitudes among the population of Sopron (local level, within the given framework), in this research she analysed the influential factors defined by her models.

Research aim and method

The author carried out a quantitative, descriptive research among the population of Sopron in 2005 with questionnaires using a sample of 459 people. The questionnaires asked for opinions about the environment, environmental protection and about the environmental consciousness of the population. The sample contained people chosen randomly.

The basic aim of the research was to give a realistic image about the environmental sensitivity, attitudes, environmental protection disposition and environmental behaviour of the population. The method of research was a personal interview using structured questionnaires. Most questions in the questionnaire were closed for which the respondents could chose one of the already given answers so the application of the questionnaire was easy. The data collected are reliable because the answers were limited to given alternatives. On the other hand, answers recorded previously reduce the variety of answers. These personal interviews were carried out in every part of the city.

The results of hypotheses tested and the analyses

H1. The population has basically positive general environmental attitudes; environmental issues have been put in the foreground in their thinking. On the other hand, personal problems and financial troubles precede growing environmental sensitivity.

The first hypothesis was verified. A growing anxiety about the environment can be noticed in the choice between economic development and environmental protection among the citizens of Sopron. 25.8% of the citizens of Sopron *think that environmental protection is of primary importance even if it brakes economic growth* and 62% of them think that both issues are important. Among spontaneously mentioned problems environmental pollution is the seventh on the list, after unemployment, poverty, health standards and housing problems – all belong to the field of personal problems and livelihood. *People consider high living costs as the most serious social problem (4.13) and environmental pollution is the seventh (3.7).* Besides, **59% of the citizens of Sopron take environmental pollution quite seriously and this shows the growing sensitivity of the population to environmental problems.**

H2. The further we go from the micro environment (flat, place of living, region, country, Earth) the opinions about the ecological state are the worse.

The second hypothesis was also verified. 42.9% of the population of Sopron consider the ecological state of his or her direct environment good, 43.4% of them say it is moderate (only 8.1% of the think it is really bad) compared to the opinions about the ecological state of the whole country where these values are only 9.6% (good), 56.6% (moderate) and 28.8% (really bad).

The reason for this can be that if we bear off from the microenvironment, our knowledge about the environment, ecology is getting more and more incomplete and they are mainly based on the media. The opinions about the state of our direct environment strongly depends on the type of settlement the respondent lives in since big cities mean worse environment from ecological aspects than small towns and villages.

H3. In the minds of the population environmental problems are closely related to health problems, health and environment are coherent ideas. We can observe the trend of raising the value of human health.

The third hypothesis is verified. As for their opinions about the effects of environmental problems on health, most citizens of Sopron (23%) said they felt little influence 10 years ago but almost the same amount of people mentioned moderate or great influence (21-21%). At present most of them feel moderately influenced (31%) and 23 % perceive great influence. What the extent of its effect will be in 10 years' time is most remarkable in the change of special values. It has gone up from 3% and 7% to 15% while great influence was perceived by 19% of them (compared to previous data). However, the ratio of people who cannot judge it and think that future is uncertain is also very high (26%). The changes in data reflect, on the one hand, opinions about the worsening of environmental problems, on the other hand, the trend to evaluate human health.

H4. Ecological problems exist in the minds of the population but the fact that they are also causing these problems is not apparent. The ecological conscience of the population is characterised by the blaming of others (ostrich policy).

The fourth hypothesis was accepted. 8% of the population of Sopron accredits the creation of environmental problems to the government exclusively, 53% of them think the government's responsibility is great (61%). 16% of the population of Sopron accredits the creation of environmental problems to the industry exclusively, 51% of them think the industry's responsibility is great (67%). Besides, the responsibility of people, the consumers, was considered to be less important (6% exclusively, 37% great, 36% moderate). At the same time, more than half of the population of the city think that population/citizens' organisations have high influence on the environmental protection (55.1%). These show contradictions with taking responsibility.

H5. Population is basically characterised by price sensitivity. Positive willingness to act does not necessarily mean willingness to pay. Consumers are just slightly willing to pay more for products that are advantageous for the environment.

The fifth hypothesis was verified. 86% of the population showed willingness to choose environmentally friendly products (39% did, 47% would do it), but the question is what percentage of this target group is liquid. The survey showed that 38% of them have livelihood problems, so, if we subtract this from the 86%, the result is 48%. Preference means intentions but this is not enough for real purchase. The survey results verify about willingness to pay that more than half of the population of Sopron (52.7%) is only willing to pay for environmentally friendly products depending on the difference in price and the

segment of fundamentally ecological consumers is merely 27%. The reason for this is that the majority of them chose the version "depending on the difference in price" because of their financial situation. But we should not forget about the fact that the increase in the sensitivity to ecological issues does not necessarily mean that people are more willing to buy products that are less hazardous to the environment.

5.2. The analysis of attitudes towards wood on the furniture market

In the second primary quantitative research the dissertation analysed consumers' attitudes towards wood as material when choosing furniture.

Research aim and method

The aim of the analysis was to get an overall picture about the attitude of furniture purchasers in connection with furniture made of wood, dominant aspect of the dissertation. The method of research was a descriptive, quantitative personal interview using structured questionnaires. Our aim was to obtain statistically valid, quantifiable data on a sample representing Hungarian furniture purchasers, the population of the research. The sample contained 1200 people the answers of whom were recorded using the questionnaire. In keeping with the regional quota the distribution of respondents followed national rates: one-third of the came from east-, one-third of them from west Hungary and one-third from Budapest, all planning to buy furniture in the next two years. Respondents were people who take part in the decisions about furniture purchase themselves, alone or with another member of the family. Only such people were asked who do not work in the wood industry, furniture manufacture, furniture trade, design, inner architecture, building trade, market research or marketing. The interviews were carried out in May and June 2007.

The results of hypotheses tested and the analyses

H6. Hungarian population connects basically positive associations to wooden furniture in which the love of nature, peace, warmth and affections occur. The negative associations that come up originate from the price-sensitivity of people and from the lack of information about the quality of wooden products (technical features).

The sixth hypothesis was accepted. Among the spontaneous associations about wooden furniture – what came to people's minds in connection with wooden furniture - the first four characteristics are positive: beautiful/aesthetic, durable, natural and warm. This is true in the case of firstly mentioned associations and in the case of all the spontaneously mentioned ones. The opinion that wooden furniture is expensive and unplayable is only ninth among first associations, far behind the positive characteristics

When asked separately about positive features, respondents mentioned the four main features (durable, beautiful, natural, radiates warmth). As a negative characteristic – in much less ratio than positive ones – high price, non-availability, transportation problems were mentioned, and opinions about the technological of wooden products were also talked about (needs maintenance, damages, deformations, eaten by wood-beetle, cracks, sensitivity to moisture). Positive attitude statements in connection with the material of wooden products were also highly rated ("Wood radiates warmth and friendly atmosphere." 4.71; "Most people like wooden furniture." 4.45).

H.7. People living in Budapest are more environmentally conscious.

The seventh hypothesis was accepted. As for certain regions, we can observe a significant difference. We can state that people living in Budapest are more environmentally conscious; they put more emphasis on the environmentally friendly character of products, their ability to be recycled and their effects on nature. The reason for this must lie in their personal involvement, the pollution of their residential areas. Citizens of Budapest think positively about wooden furniture ("Wood radiates warmth and friendly atmosphere." 4.6; "Most people like wooden furniture." 4.4), but their emotional bonds are not as strong as in other regions. On the other hand, they like furniture that is made from other materials less (2.5). Determinant factors of their higher environmental consciousness can be: higher income and qualification, closer follow up of trends, international experiences. All these need further analyses.

H8. As for gender, women have more positive attitudes towards wooden furniture than men.

Hypothesis rejected. Attitudes towards the material of furniture are similar among men and women. There is a significant difference only in the case of one negative statement ("People do not take into consideration if the furniture they purchase can be recycled or not"). Women agree with this less, showing their more environmentally conscious attitudes

6. The theses of the dissertation

The theses of the dissertation can be summarised as follows after reading national and international technical literature and researches and as the result of the primary researches:

<u>Thesis 1:</u> The analysis of environmental consciousness has to be carried out by a multimember model since so those members and levels can be identified that play part in the handling of environmental problems.

<u>Thesis 2</u>: I created a general model based on the technical literature and national and international researches that describes the process how environmental conscious consumer behaviour is created demonstrating the interaction and inner consistence of individual components. The complex model of the factors affecting consumers' environmental consciousness can also be set up. The application of the models to reveal general environmental attitudes is verified

<u>Thesis</u> <u>3</u>.: Environmental problems are getting more serious and health- and environment conscious groups have appeared which induced the integration of environmental values into traditional marketing. As a result of all these eco-marketing has been created with a growing role in the activities of organisations.

<u>Thesis 4</u>: The population has basically positive general attitudes towards the environment; there is a growing tendency of environmental sensitivity. However, personal problems, livelihood costs, unemployment and the anxiety about the health care system all precede the worries about the environment until people live in a general welfare. The economic development of countries is represented in this aspect.

<u>Thesis 5.</u>: The population tend to blame others for ecological problems. Ecological problems exist in the consciousness of the population but they realise at a lesser extent that they also can cause such problems because if the information coming from the outside contradict beliefs they perceive information selectively, they attempt to keep their inner consistence to prevent cognitive dissonances. The negative feelings originating from a sense of guilt result in secondary psychological responses, protective mechanisms which help to get rid off these feelings. All these mean a denial of the problem (the reality), rational distinction, apathy and resignation (incapable of change) or putting the blame on others in order to get rid off this sense of guilt.

<u>Thesis 6</u>. The Hungarian population connects fundamentally positive associations to wooden products/furniture, love of nature, peace, warmth and atmosphere appear. The negative associations that occur come from the price sensitivity of people, anxieties about the quality of wooden products (technological properties) and a lack of information. That is why they have to be informed and made clear that wooden products have ecological advantages which processes can be realised by using ecomarketing, especially WOOD-PR.

7. Other statements and possible further directions of research

Factors that determine the choice between wooden products and their substitutions became identifiable during the overview of the technical literature and the primary researches:

- Price wooden products must have competitive prices since willingness to pay extra costs for environmentally friendly products is very low at present. If the price of a wooden product is on the same level as the price of the substitute product, the consumers may be motivated.
- Quality features that express expected needs. In the case of environmental conscious consumers we can define eco-quality that describes the usability of a product and its effect on living environment.
- Costs and simplicity of maintenance and renovation factors that are determinant during use are closely connected to the dimension of quality. On the one hand there

aspects of convenience, on the other hand, in the dimension of expended time, they can appear as disadvantages in the case of wooden products (e.g. especially for people living in Budapest).

- Consumer taste, fashion, trends, consumer environmental consciousness the trend of loving nature and naturalness, health- and environmental consciousness assists the demand for wooden products while the contrary trends and fashion assist substitute products.
- Information emphasising that wooden products are made of natural raw materials coming from planned forest management reduces anxieties about the production of them. Labelling products that meet ecological criteria with eco-labels helps information conveyance. Since a good, well-known eco-label can serve as a pivot among too many pieces of information (too wide choice of goods) but provides trust and safety and guarantees quality as well.
- *Eco-communication, eco-marketing, WOOD-PR* the ecological advantages of wooden products have to be communicated against substitute products. This communication is most effective in the form of social marketing when it complements company marketing. There are several international examples for this.
- The creation of the trade mark "*Hungarian Wood*" is essential with the following aims:
 - identifying Hungarian products on the market;
 - highlighting and distinguish excellent quality Hungarian products;
 - building country image;
 - protecting Hungarian manufacturers;
 - guiding and protecting consumers;
 - developing economy, indirect quality improvement;
 - developing general consumer culture

The author considers the following points as *possible further directions of research*:

- The analysis of the role and knowledge of the brand (eco-brand), the effect of informed/under-informed state on consumer behaviour.
- The author considers it necessary to apply further qualitative researches to understand the factors that influence environmental conscious consumer behaviour better to reveal consumers' emotions and motivations especially the attitudes towards wood and wooden products. This could be the basis for working out a marketing strategy

that popularises wood. Apart from these, the author would analyse the effects of situational factors.

The author thinks that a possible further research could be the analysis of international wood marketing and its organisations and its practice to popularise wood. The results could assist to work out a Hungarian society wood marketing strategy and the foundation of a WOOD-PR organisation to assist the marketing of wood and furniture industry and to make consumers aware of the ecological characteristics of wood

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