

INVESTIGATION OF CONSUMER ENVIRONMENTAL AWARENESS BY MARKETING RESEARCH METHODS – METHODOLOGICAL CONSIDERATIONS

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Abstract

In the present article we investigate the demand side of the market from the aspect of moving toward an environmentally aware society as an idea. What are the motivating factors of purchase decisions that regulation in the widest sense can analyse and react on? In what cases can we consider these decisions as environmentally aware? If we would like to gain information about or influence such decisions can we measure the level of environmental awareness, the intensity of motives? If we can measure these, what are the methods we can or should use and what can we expect as a result? These questions are intended to be thought-provoking as the uncertainty is quite high about how to get a non-biased picture of environmental preferences of the customer side.

Keywords: environmental awareness, purchase decision, marketing research.

1. Introduction

By the 1980s the issue of environment had become an important part of public interest and social discussion (EDER [2]). Issues, earlier stressed by scientists and green movements had become important for a wide layer of society: ministries, governmental organizations, universities, several conferences, periodicals, radio and television programmes and internet websites discuss this topic nowadays. The corporate sector naturally also reacted on this interest, trying to translate the changing expectations to its own language, and changing its product range, communication and strategy in order to meet new customer needs. In parallel, the measurement of environmental awareness became an important issue: the emergence of environmental values in individuals' thinking had become an exciting issue for corporations, politics and science.

However, while for companies the measurement of environmental awareness is limited to certain very concrete issues (Is a certain environmental factor of my product important in consumer decisions? Would customers pay more for certain environmental properties of a product?), politics and the scientific sector deal with environmental awareness in general.

Environmental awareness influences human behaviour in several ways: reduction of consumption, change of wasteful or harmful consumption patterns, preference of environment friendly products, selective waste collection, or different forms of protest may represent ecological sensibility. In our present paper we are dealing with product choice (consumption decisions) and its possible investigation.

2. Consumer Purchase Decision

According to the basic model of consumer purchase decision process¹, it can be divided into five stages, which are: problem recognition, information search, evaluation of alternatives, purchase, and postpurchase behaviour. Environmental awareness may influence all stages, thus – although it seems obvious – it is not enough to focus exclusively on the alternative evaluation phase.

During the *problem recognition* stage consumer realizes that he lacks something and this need is ‘translated’ to the purchase of a product. Environmental awareness of consumers determines their attitude toward consumption. Environmentally aware consumers may choose different alternative instead of product purchase, they live their needs in a different way, and react to environmental inducements differently. Advocates of ‘voluntary simplicity’ for example more rarely ‘translate’ their needs to product purchase (although their basic needs are obviously similar to those of other consumers²).

During the *information search* stage the consumer is trying to set alternatives to satisfy his need and in order to reduce risk, he is trying to collect as much information as possible about different alternatives. It depends on the (learnt) set of values and attitudes of the consumer, which alternatives he will set and what factors he sees relevant. Consumers’ opportunities are determined by the available information and the reliability of the information sources. Those consumers who consider environmental characteristics will try to get information about them³. Those who do not seek this kind of information will come across it only if environment related information is emphasized (mostly by the producer) on the product or during the purchase situation.

The *evaluation of alternatives* includes choice among information collected during the information search stage. According to the marketing theory, consumers consider products as different property sets (use, aesthetical and symbolic properties). There are three important inputs of decision: alternatives, evaluation criteria

¹ [10] – p. 233. (This is a simplified basic model.)

² ELGIN [3] writes: ‘Although there is no dogmatic formula for simpler living, there is a general pattern of behaviours and attitudes that is often associated with this approach of living. Those choosing a simpler life: ... tend to lower their overall level of personal consumption (p. 33). See more about voluntary simplicity: [9] and [3].

³ According to Duane Elgin for example advocates of voluntary simplicity: ‘tend to alter their patterns of consumption in favour of products that are durable, easy to repair, non-polluting in their manufacture and use, energy-efficient, functional and aesthetic.’ [3] p. 33.

and the order of importance of criteria [6]. The latter ones are usually independent from the decision-making process. For environmentally aware consumers environmental values are included among criteria for selection and they are more important, their role in the decision-making is more prominent.

The *purchase* is the real action. After the evaluation of the alternatives however, we state only our intent to buy and real action is influenced by the so-called situational factors, too, which are actually unexpected affairs, occurring during the purchase process. These factors occurring after the decision-making (statement of intent to purchase) may modify or delay the purchase or the consumer may even withdraw from the purchase as a result of these factors.

Postpurchase behaviour is the actual action or rebound to the purchase process induced by the satisfaction or dissatisfaction caused by the experience of the consumer (usually during the use of the product). From the point of view of environmental awareness it can be interesting to understand that the results of our previous decisions may determine our future decisions because they can modify our views about product purchase, necessary information, choice criteria and the order of importance of these criteria.

More complex models of consumer purchase decision⁴ are identical in that they distinguish three, closely related factors as the output of the purchase process: *attitudes*, *purchase intent* and *purchase*. Internal and external influence factors will determine our attitude toward the product, attitudes lead to purchase intent that may lead to the purchase through the situation.

These models classify influential factors of purchase decision into three groups: social factors (e.g. culture, social status, reference groups, family), individual characteristics (e.g. motivation, values, perception, personality) and situational factors (e.g. range of products, personal sales, amount of money available).

3. Components of Environmental Awareness

Environmental awareness is usually treated as a multi-dimensional construction in literature. Besides the actual action, environmental knowledge, precognition about the issue, and the thinking, psychological reaction triggered by the knowledge (important when investigating the causes of environmentally aware behaviour) are usually also mentioned.⁵

⁴E.g. Howard–Seth (1969), Engel–Balckwell–Miniard (1986) and Dubois (1990) – cited by KENÉZ, [8], see also: [6] p. 312–325 and [19]

⁵Different sources mostly differ in how they group reactions triggered by environmental knowledge. Maloney and Ward distinguish the following dimensions: environmental knowledge, emotional concern, stated willingness to behave ecologically and ecologically active present behaviour. Winter (1987) distinguishes, besides knowledge, the dimensions of individual values and attitudes, collective values and attitudes and willingness to act. We have chosen this model (Nemcsicsné) because this is the closest to the marketing approach of consumer purchase decision.

Zsóka Nemcsicsné distinguishes five dimensions⁶:

- Environmental knowledge
- Environmental values
- Environmental attitudes
- Willingness to act
- Actual behaviour

Environmental knowledge is the sum of knowledge about the issue. The knowledge influences the consumer's psychological characteristics (values, attitudes) and thus determines two important factors of the alternative evaluation stage: evaluation criteria and the importance of different criteria. Besides, knowledge may play an important role in the alternative search (information search) stage, because those alternatives which are not perceived will not be evaluated and the information we are not aware of is not taken into consideration.

Environmental knowledge is on the one part general knowledge (this is the subject of scientific analysis most frequently)⁷ about environmental problems, consumers' opportunities, social responsibility that mostly influences the set of values and on the other part concrete knowledge about products, product characteristics (the production process, raw materials, usage, post-use phase of the life cycle).

Environmental-related values are part of our general set of values. Values are permanent and general concepts, beliefs, which refer to the expected behaviour and constitute a set of values as a hierarchical system.⁸ Our set of values guides our decisions, serves as a benchmark to judge ourselves and other people and when comparing something, influences our preferences and serves as a reference.

Our values are created as a result of a continuous learning process, in virtue of our socialisers and experience. They are permanent but they can be changed on the long run (by the environment, education, generation, life cycle). Values are not rational and our set of values may involve contradictions.

Hawkins, Coney and Best, investigating the relation between values and consumer behaviour state that values primarily influence consumption, purchase and communication and there are three value types: values toward others, values toward the environment⁹, and values toward ourselves.¹⁰ In the value set of Hawking et al.

⁶If we investigate these models, it is obvious that the basic components of environmental awareness – dimensions – can be used to investigate other problems, too. This means that when we talk about dimensions of environmental awareness, actually it means interpretation of the notion awareness to environmental problems'.

⁷E.g. in the surveys by Gallup[18], [16] and [17]

⁸[6] (pp. 33–37), cp.: [13], [4] p. 52–61 and [8] p. 23–35.

⁹'Environment-oriented values prescribe a society's relationship to its economic and technical as well as its physical environment. For example: ...a society that stressed a problem solving, risk taking, performance-oriented approach ...(or) a fatalistic, security, and status-oriented society.' [4], p. 52. 'Environment-oriented values: cleanliness, performance – status, tradition – change, risk taking – security, problem solving – fatalistic, nature (Is nature regarded as something to be admired or overcome?)' ([4] p. 54)

¹⁰The authors use the notion 'value' here as 'cultural value' (generally accepted persuasions,

the values related to the natural environment can be found independently among environment-oriented values.

Environmental values determine our general approach of the issue thus they have a prominent role in the development of our attitudes. As they are hard to be changed, the role and level of environmental values are the most appropriate to investigate the attitude of the society. We cannot leave them out of consideration if we would like to explain behaviour in general or forecast it, that is if we are looking for environmentally aware motivations. The measurement of environmental values is at the same time quite a difficult task, as they cannot be observed directly, we can only draw the conclusions about them from attitudes or behaviour.

*Environmental attitudes*¹¹ differ from environmental values because while values are general, attitudes refer to a subject or situation. Attitudes define the framework of thinking about their subject (e.g. a product, brand, situation, place, person or even a religion or politics), state our favour or disfavour (the direction of the attitude), its degree and the level of confidence (how strong this persuasion is).

There are three components of attitudes: cognitive component indicates the consumer's persuasion, knowledge about the subject of the attitude, affective component indicates his emotional relation to the subject and behavioural component indicates the willingness to act about the subject. These components act differently and with different intensity. While the cognitive component can easily be changed by new information, emotional component is not likely to be changed by this. Emotional impacts (e.g. advertisement, brand image) at the same time do not (significantly) influence the cognitive component but significantly influence the emotional one. A strong positive attitude can be built exclusively on emotional basis, moreover, some authors say that the emotional component is the most important one. Behavioural component is not the direct resultant of the other two. Several researches show that the three components are connected but there can be some inconsistency. This is important to know when investigating attitudes, because the analyser tends to conclude to the attitude from the easily measurable cognitive component.¹²

It is important to measure attitudes if we would like to know the motives of a behaviour. Attitudes toward certain products, brands can directly influence product purchase (in the information search stage we select some brands we consider worth to evaluate and in the alternative evaluation stage we evaluate different aspects through our attitudes¹³). When measuring attitudes we can measure the general

beliefs) that is they define it as determinative of the view of the society, but naturally these social values are the aggregates of individual values (value sets) – and influence them, too – thus the relation with consumer behaviour can be interpreted also on individual level.

¹¹There are several definitions of attitude. Gordon Allport defines attitude as 'a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related'. The definition by Ajzen and Fishbein is: 'learned predispositions to respond to an object or class of objects in a consistently favourable or unfavourable way.' See: [6] pp. 232–252; [4] p. 454–463.

¹²[4] p. 461.

¹³It is important to know that even the cognitive component of the attitude is not solely based on

attitude toward the subject (the set of beliefs), certain beliefs about the product (properties) and the importance of different beliefs in the general image.

Willingness to act is stated commitment to act [13]. Attitudes do not result action without need and motivation¹⁴, and spending power is also necessary (consumer has to be able and willing to purchase) – we can only talk about willingness to act if all these conditions are fulfilled. We have to mention that some authors rank willingness to act among the behavioural component of attitudes. However, the relation is not automatic, that is positive attitude does not always lead to purchase.

It is important to highlight willingness to act from the point of view of the research. This is the last point that can be measured if we would like to forecast future behaviour.

Intent to purchase does not necessarily lead to actual purchase, as the concrete situation and the environment (situational factors) may influence the outcome. Thus it is also important to observe *actual behaviour*, too.

The components of environmental awareness are naturally closely related to each other, environmental knowledge (together with other external factors) determines environmental values and these components together determine environmental attitudes. Positive attitudes create willingness to act and that leads to actual action. The relation is true in the other direction, too: act (experience) modifies our experience (environmental knowledge) and the attitudes and even values on the long run. If the attitudes change the set of values may also change on the long run.

4. Problems of Environmental Awareness Measurement

The first problem obviously originates from the *complexity*, multi-dimensionality of environmental awareness. In every single research, researchers have to define, which level of environmental awareness they would like to measure and how they would like to apprehend the consumer purchase decision process. The most frequent questionnaire surveys usually try to estimate environmental awareness by measuring environmental knowledge, attitudes or purchase intent. Alternatives (and the evaluation criteria and their order of importance) are often evaluated by product tests (mostly by companies). We can also find examples of investigation of actual behaviour, however we cannot investigate all dimensions of environmental awareness with one single method¹⁵. If we would like to apply several methods in parallel, we will face the problem of harmonizing different information, what is usually not an easy task.

fact data, but also on earlier information, other attitudes and beliefs. In our attitudes therefore real knowledge and beliefs are mixed and it is a mistake to draw conclusions based on facts about the product (those are facts only for us).

¹⁴[4] p. 461–462.

¹⁵The methodology described by SÁRKÁNY and ÁCS [15] is a good example of applying several methods with the inclusion of several target groups

Another problem occurring when measuring environmental awareness demonstrated in purchase decisions is the *changeable manifestation* of environmental awareness: the same consumer may act differently when purchasing different products or in different situation or periods. Consumers' stated environmental awareness may vary with products of different importance or price category.

If the question is too general it refers to too many decisions therefore usually overestimates the actual environmental awareness. The question raised during the survey by Dr Valkó: 'During your purchases would you be willing to pay a higher price for products in order to reduce environmental pollution by producers?'¹⁶ includes this bias possibility. The other option is demonstrated by the research questions raised by WWF, which refer to concrete situations: e.g. whether the respondent would pay 10% more for milk produced on a bio-farm or for a soft drink in environmentally friendly packing¹⁷. These questions were used as 'reality-filters' in this research that is they wanted to counterweight the overestimation of the general question. It is obvious that in the case of this kind of questioning it is arguable whether the concrete questions (however carefully they are elaborated) really depict (even if not comprehensively) the environmentally aware behaviour.

A similar problem occurs in the case of attitudes. Attitudes are usually measured with attitude-scales by questioning. The number of attitudes – as they are related to a certain object – is much higher than that of values. How many attitudes and which ones do we have to investigate in order to generalize our findings to environmentally aware attitude?

Naturally there are different types of consumer purchase decision which influence the length and process of the above described stages, therefore the *character of the decision* will also influence the results of the research. We can distinguish four types according to the process: impulse purchase, routine purchase, simplified purchase decision and 'real' problem-solving [6]. Obviously the whole decision process can only be observed in the case of the last type, and in the case of the other three, it is much simpler. Most decisions are made without active information search, that is, the purchase is less conscious. Less intensive information search (e.g. instead of active information search only 'higher attention')¹⁸ will result that earlier attitudes will play a more important role in the purchase. During the evaluation of attitudes the consumer very often takes into consideration earlier evaluations or attitudes based on others' opinion instead of the actual situation. The role of situational influence factors can also become more important. This means that the (conscious) answers to questions about willingness or intent will be less reliable.

Inseparability of factors is mostly a problem when investigating actual behaviour or testing a product: it is difficult to distinguish decision factors related to environmental awareness from other factors. If we complete the observation or

¹⁶[17] p. 106. (Questions are quoted as examples, they are not in their original context. The way of questioning is not wrong. We would rather draw the attention on the fact that researchers have to find a compromise. With choosing a method they also choose difficulties, barriers of the analysis.)

¹⁷Cognitive-WWF [1] p. 5.

¹⁸[10] p. 234.

experiment with relevant questioning, simpler differences are detectable (e.g. if the environmentally aware decision is actually not environmentally aware: the respondent liked only the green colour or the small picture of a tree on the wrapping of the product), but environmental values are taken into consideration during the purchase decision through a complicated system of attitudes. It is often closely related to several other decision criteria: perceived quality, health consciousness, self-interest – these factors may weaken or strengthen the measurement of how environmental values are taken into consideration. (E.g. if the consumer believes that the environmentally friendly product is more healthy or he has an obvious interest in choosing environmentally friendly product, we can easily overestimate his actual environmental awareness.)

Though it seems easy to represent *environmental values* in the investigation, it is not that simple. In marketing research biases caused by the person or measuring instrument are called ‘measurement biases’¹⁹. We can give information during questioning which is not perceived by the consumer in real situation (e.g. the product was produced on a bio-farm or with an environmentally friendly technology) or that he used to have different knowledge about, so we do not investigate the respondent’s actual level of environmental knowledge (or perception). In case of some techniques (e.g. experimental methods: tests), we have to represent a product (with certain environmental characteristics). If we would like to simulate a real purchase situation, we cannot be sure that environmental characteristics are perceived, to what extent they are perceived by the consumer, but if we draw the attention to this, we will not observe the real purchase situation (we do not only measure environmental awareness, but also the efficiency of communication). We always have to consider this problem in case of investigating a given product.

It is also important that the social environment creates a *social norm*, and the force to conform to the norm can be stronger in the investigated situation as in everyday purchase practice. (The respondent will tend to answer according to the norm instead of undertaking the conflict caused by nonconformity.)

Similarly the ‘*contrast effect*’ (enhancement of the difference between expectations and opportunities) and ‘*cognitive dissonance*’ (the consumer’s attempt to rationalize, explain his behaviour) also belong to the psychology of observation, what researchers also have to take into consideration.²⁰

5. Methodological Considerations – Investigation Methods

The most frequently used method is *quantitative questionnaire survey*. There are several advantages of this method (relatively cheap, easy to implement, can generally be applied, results are numerical and everybody is able to design a questionnaire).

¹⁹See more in [12] p. 280–282.

²⁰[5] p. 37.

Every stage of the purchase process and every element of environmental awareness can be investigated by questionnaires (more or less). During quantitative surveys we have to take into consideration that questionnaires always focus on conscious opinions, known and undertaken by the respondent, that is we presume that 'everybody acts as he says'.²¹ Since questionnaire survey is a well-structured data collection method, we have to have a clearly defined concept, hypothesis about the question.

The methodology of questionnaire surveys is generally known and Hungarian environmental awareness surveys usually use this method, therefore we do not discuss this method in detail. However, we investigate what kind of other methods can be applied in order to complete and refine the information collected by questionnaire surveys.

The other method of questioning, *qualitative research* is relatively rarely used to investigate environmental awareness²², however this method is naturally applicable to collect important additional information. Qualitative research is the overall name of unstructured interviewing techniques and while quantitative research is appropriate to measure something in numeral terms, these methods enable us to understand the causes or motivators behind processes, opinions. Qualitative survey can be useful in research preparation, setting up hypothesis or verbalization. It enables researchers to look behind conscious, 'norm-conform' answers.

The measurement of environmental awareness would primarily be important in investigating the attitude toward shopping, the perception of environmental problems, the presence and role of environmental values in the structure of thinking, emotional attitudes and contradictions in the system of attitudes, but it is also indispensable in understanding complex purchase processes and the measurement of each-influence during multi-actor decisions. If the often mentioned phrase that 'green consumption means buying clear conscience' is true then it requires qualitative research to understand it and its process.

The application of qualitative methods (the most important ones are focus group interview and individual deep interview) often used in psychological and sociological research, is expensive and requires high expertise, and none of them is appropriate to draw general conclusions for the total population.²³

An interesting patch of research could be the investigation of actual behaviour. By observing behaviour directly, the problems of questioning can be eliminated (e.g. conscious bias or bias because of not remembering correctly). *Participatory purchase* is for example an observation method. When applying this (quite time- and money-intense) method the researcher follows up the purchase process (or at

²¹ 'Verbally expressible behaviour programme' does not entirely prevail. First of all the respondent is trying to show his best, and beside this, unconscious 'programmes' cannot be verbalised. ([11] p. 139)

²² Only SÁRKÁNY and ÁCS mention the method described by us as a research phase, a special extension of quantitative research on a special sample [15].

²³ Also because the sample is small and the results are not numerical.

least its last phase²⁴) by taking part in the process, going with the customer to do the shopping and observing his behaviour on the premises of the purchase (the shop). Observation can be completed by questioning, what enables researchers to check what the customer apprehends from environmental properties of the product, what other factors he was able to observe and how they influenced the final choice. These methods are the most appropriate to check the efficiency of sales instruments (e.g. eco-emblems, labelling, bio-islands that is placing bio-products together.)

It is an obvious solution to *observe realized purchases*. By investigating products bought the customer's (household's) real environmental awareness can be measured that was realized on the market. Tracing customer purchase process, that is the investigation of customers' market behaviour is usually an important task of corporate marketing monitoring systems providing basic information for corporate management, thus there are quite a lot of relevant sources in daily practice²⁵. Researcher has nothing else to do than reviewing the supply, evaluating that from the point of view of environmental issues and comparing that with households' consumption in order to see in what cases, how often, and to what extent do customers buy products in an environmentally aware manner. The drawback of the method is that the motives of product purchase cannot be distinguished (without completing it with questioning) thus we are not aware of the background of the environmentally aware purchase behaviour. Although it can precisely be measured what proportion of purchase choices was environmentally preferable, the roles of different characteristics – properties of the product, price, marketing or environmental properties – cannot be separated.

By processing the data of the biggest surveys about consumers' behaviour – because several products were included – we may segment customers in order to see whether seemingly environmentally aware behaviour in the case of some product categories can be confirmed than in the case of other product.

The most important experimental methods are *comparative product tests*. Experiments belong to cause and effect (explanatory) research methods and their gist is to reveal casualty relations, that is what the effect on (the dependent) variable is if one or more (independent) variables change.

When investigating environmental awareness experiments can mostly be used to analyse what factors influence purchase decision if we consider it as the dependent variable. With the help of experimental methods it is possible to compare the change of purchase intent or attitudes at different levels of (real or fictive) products, product characteristics or levels of characteristics. Experimental methods make possible to measure the acceptance of new products, product versions, test emblems, the effect of labelling on purchase. With the help of proper statistical methods it

²⁴This is the actual phase of purchase, however in case of routine purchase and simplified purchase decision, information collection and the evaluation of alternatives take place together (in the shop) and in case of impulse purchase, the whole process is integrated.

²⁵Besides company researches, in Hungary two companies deal with the investigation of household consumption: GfK Hungária Ltd. and TGI Magyarország Ltd. also have data about a wide range of products purchased by households.

is possible to compare the value of different product characteristics (what is the rate of substitution of different characteristics – e.g. price, flavour, efficiency – to others – environment friendliness, environmentally preferable raw materials). Experiments make recognized (or presumed) relationships numerically measurable, for instance we can measure concretely how much more would the environmentally aware consumer pay.

Macro environment, social acceptance of environmental values and their influence on different lifestyles can be measured with the help of *content analysis* method. The number and content of articles in the media can indicate the understanding, general attitude of the society or how important the issue is for opinion-shapers.

Since the spread of environmental problems and the rise of environmental consciousness, the attention of media is not obvious, the focus and style of opinions is also more variable than it was earlier, when the issue was new. The reaction of corporate marketing, the appearance of environment friendly products in the supply and the topic in corporate communication enhances the number of communicators and reduces the curiosity of the issue. The authenticity of information sources may also change. All these factors may influence the environmental awareness of the population.

6. Summary

As the existence of environmental problems is becoming more and more accepted, it is more and more important to measure and forecast environmental awareness. In Hungarian practice we can find some well-designed and very informative surveys about environmental awareness (Dr. László Valkó, WWF-Cognitive), but the topics analysed and their volume coverage are limited and they do not cover the whole issue. It is surprising that Hungarian practise is very questionnaire-oriented and alternative methods are almost never applied.

In our article we tried to summarize what and with what kind of methods researchers have to investigate if they would like to get an overall picture of environmental awareness influencing purchase decision. We tried to set up alternatives for questionnaire surveys and to sum up how they could be completed by other methods.

In our opinion it would be important both to use qualitative methods in order to better understand the problem by deeper investigation of conscious answers and to implement a higher portion of experimental methods in order to investigate concrete characteristics. It would similarly be interesting to investigate actual manifestation of environmental awareness: consumption.

At the same time we have collected dilemmas occurring during the research that researchers have to be aware of. In the forthcoming phases of our research we will try to investigate all components of environmental awareness and to work out an analysis, which will consider this area in its entirety.

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