SZENT ISTVÁN UNIVERSITY
Gödöllő

THESES

Exact goods analytical and psychological factors determining competitiveness of products of the agricultural and food industry – influencing their value judgements with tools of marketing

Written by:
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1. TIMELINESS, OBJECTIVES AND METHODOLOGY OF THE DISSERTATION

1.1. Antecedents and timeliness of the dissertation

We live in the era of value marketing. As Rekettye (2002) said briefly: By the turn of the millennium, we reached the era of value orientation. In his dissertation aspiring for the title 'doctor of the Academy' he pointed out that since the beginning of the 90s we have witnessed the coming of this new approach in both theory and practice. On his lecture in Budapest in 2001, also Kotler called for some correction which he explained as giving preference to consumer needs and even interests. Under the influence of global tendencies – resulting in more intense competition, saturated markets and more conscious customers in almost every sector of the economy – the solution of consumer problems, need satisfaction, value creation, and long-term satisfaction have to be focused on; this approach and philosophy characterize and determine different corporate functions or even the entire operation of a company.

To design the appropriate strategy and forms of behaviour, wider dimensions of consumer value and utility need to be explored. Modelling relationships is a complex thing because utility not only implies outstanding product quality but also a number of factors related to psychology, sociology, health, comfort, taste, habit and last but not least fashion. The measurability of consumer utility is strongly questioned by economy because of its subjective nature, while value marketing cannot pursue a successful (product) strategy without estimating the usefulness that influences the value judgement representing expected price ratios.

This endeavour directed my attention to the methodology of the quantifying approach of relative utility as introduced by Pál Tomcsányi in 1994 under the term 'goods analysis'. The basic assumption of the procedure is that the degree of utility is the price ratio between two products which according to a consumer's (buyer's) value judgement is acceptable. The aim of goods analysis is to make the utility of products and services measurable, quantifiable, thus comparable by analysing the characteristics and other criteria of these products and services.

1.2. Objectives of the dissertation

The most important objectives of this dissertation can be summarized as
follows:

1. To present the role and interrelations of goods analysis within the system of
value marketing and to describe its theoretical background by analysing its
economic relations (value theories, utility modelling).

2. To give a comparative, theoretical overview of goods analysis and other
procedures of similar purpose, to point out similarities and differences, and
to evaluate methods.

3. To give an overview of the complex method synthesis of goods analysis,
to enhance a better understanding of and possibly to improve the process
through restructuring its content and visual representation.

4. With the help of primary investigations, to analyse and evaluate the possibilities
of its practical application and to put forward suggestions for further use.
5. To extensively investigate the role of the processes and results of goods analysis
in (product) strategic planning and in decision making as well as to define
and integrate its links.

6. To make a comprehensive evaluation of the complex system of goods analysis
that includes an examination of the theoretical background, the experience
relating to its practical application, methodological modifications and
developments, extensive criticism and suggestions. The main purpose of
the dissertation is to determine the presumed place, role and significance of
goods analysis within the value marketing of products.

1.3. Research methodology

In processing, analysing and evaluating the methodology of goods analysis,
which indicates the competitive strength of products and services being the subject
of this dissertation, my work was underpinned by three main methodological
pillars whose guiding principle can be followed in my previously prepared
research plan as well (see Figure 1.). Setting out on the basis of secondary sources
and supported by primary demonstration, I tried to attain the goals set and obtain
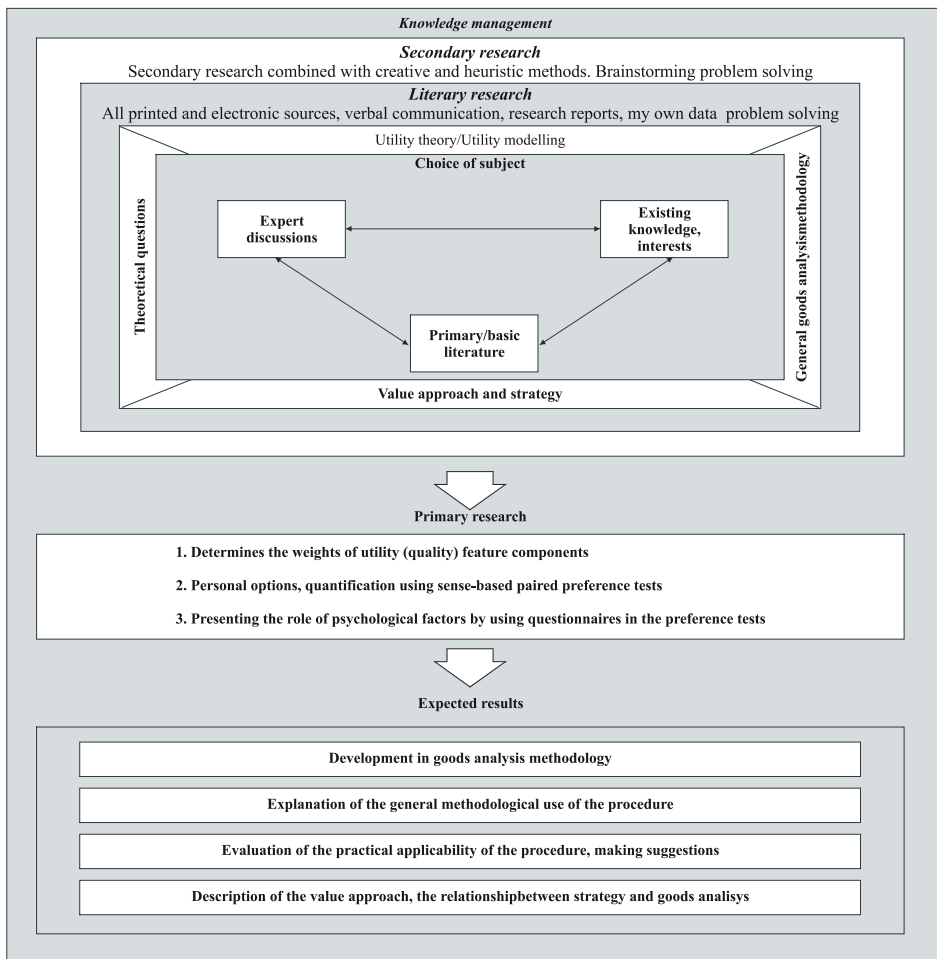new scientific results.

Knowledge management

Secondary research
Secondary research combined with creative and heuristic methods. Brainstorming problem solving

Literary research
All printed and electronic sources, verbal communication, research reports, my own data problem solving

Utility theory/Utility modelling

Choice of subject

Theoretical questions

| Expert discussions | | Existing knowledge, interests |

Primary/basic literature

General goods analysismethodology

Value approach and strategy

Primary research

1. Determines the weights of utility (quality) feature components

2. Personal options, quantification using sense-based paired preference tests

3. Presenting the role of psychological factors by using questionnaires in the preference tests

Expected results

Development in goods analysis methodology

Explanation of the general methodological use of the procedure

Evaluation of the practical applicability of the procedure, making suggestions

Description of the value approach, the relationshipbetween strategy and goods analisys

Figure 1. A basic scheme of the multidimensional research model
(Source: Péter Tomcsányi 1998)*

1. The basis for the theoretical elaboration of this subject was an analytical overview of related Hungarian and international literature. By systematically collecting, classifying and comparing data and assertions, I tried to express my personal opinion throughout my entire research.

   a, A creative version of secondary research** is knowledge management that continuously or analytically examines the information coming from secondary research, and then by combining and synthesizing them – partly with heuristic methods – new (or extended) knowledge is created.

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* In order to distinguish references to works of Pál Tomcsányi and Péter Tomcsányi and to avoid confusion that might arise due to the same initials (P) of the two first names, I mark all sources pertaining to my person as Péter Tomcsányi.
** This concept is virtually the same as extending secondary market research to other disciplines, ie a scientific problem is described and solved using already existing and accessible information (published earlier by others or by myself).

The systematic study of the related literature and the continuous investigation, comparison and combination of information triggered in me a mental process that led to the creation of new (extended) knowledge and concepts. The research findings obtained by this "extended reproduction" of information rely on the method of knowledge management. To prove the statements, results and theoretical assumptions based on secondary research as well as to further improve their practical applicability, I conducted several primary (empirical) investigations. From among the investigations, I wish to lay particular stress on a representation of expert opinions in relation to an evaluation of malting barley quality, a paired preference test on beer and wine taste completed with questionnaire surveys, and the modelling of the evaluation process (case study) carried out on different malting barley varieties using a decision table.

b, Mathematical and statistical processing of data was done with the help of the target software developed partly for the method of goods analysis in the National Institute for Agricultural Quality Control (Országos Mezőgazdasági Minősítő Intézet). The software was developed by Imre Palotás based on the algorithms described in goods analysis. For further calculations and analyses I used various statistical methods described in the works of Sváb (1981), as well as Kindler and Papp (1977) (eg Kendall's W rank concordance, aggregate preferences measured on the Guilford scale, Spearman rank correlation, v concordance index etc.).

c, In addition to the above mentioned methods, it is a relevant part of every piece of research to get continuous feedback, judgement, criticism and suggestions, or confirmation from others around us on our ideas and the accumulating partial results. After careful consideration these can be used in our further work. I am convinced that by knowing – but, of course, not unconditionally accepting – the opinion of others, the dissertation can become more subtle and correspond to both reality and the needs of society. To this end, I deliberately started to collect, analyse and consider feedback from different sources. During my studies abroad (Switzerland, St. Gallen) I had the chance to make myself familiar with the research methodology of western PhD schools, and as a participant of scientific conferences and lectures I met a wider range of expert opinions. In my discussions with the consultant, the co-workers and professors of the institute I had to reconsider some of my views, and I had to accept valid criticisms for style and clarity from experts of other disciplines. But

throughout the regular consultations, I received most of the guidance, the harshest criticism, most of the explanations and support from my grandfather in this profession who – as I pointed out in my dissertation as well – in my case is my grandfather in real life as well, not only in sciences.

2. THE THEORETICAL AND PRACTICAL SIGNIFICANCE OF THE METHOD OF GOODS ANALYSIS AND ITS SCOPE OF APPLICATION IN ENHANCING THE COMPETITIVENESS OF AGRICULTURAL AND FOOD INDUSTRY PRODUCTS

2.1. Value and utility

The abstract and complex notions of value and utility have always played an important role in human thinking, economic theory, and later, in marketing. Thus it is by no means accidental that these notions are continuously in the focus of interest and analyses, since they are the drivers of all the activities and the motivation that "make our economy function" and are deeply rooted in the theme of utility and personal value judgement.

In the first part of my dissertation I gave a detailed overview of how the image of value and utility changed in science, including economics and marketing, over the years. In the course of my analyses I touched upon the relationship between utility and price, the interpretation of goods analysis in terms of utility, consumer utility structures, relevant interrelations of customer decisions and other factors influencing consumer utility. It can be ascertained that the growing need for solving problems that cannot or just partly be algorithmized generated the emergence of a number of problem-solving and value-determining systems. In my investigations I performed a novel classification and evaluation of problem-solving methods, and dealt in detail with the methodology of some procedures closely linked with goods analysis.

2.2. The tasks of goods analysis, its major methodological features, scope of application and directions for further development

In the second part of my dissertation, I discussed the subsystems constituting the complex notions of goods analysis in detail. The major implications and regularities of the method can be briefly summarized as follows:

As mentioned earlier, the degree of utility is the price ratio between two products which according to a consumer's (buyer's) value judgement is acceptable. The aim of goods analysis is to make the utility of products and services measurable, quantifiable, thus comparable by analysing the characteristics and other criteria of these products and services.

The task to perform is to make a fair estimate for utility and cost in particular cases by eliminating as much as possible the effect of other factors influencing price. A number of procedures of similar purpose are known. The best known and perhaps the most generally recognized one is value analysis.

Originally, Miles' (1973) value analysis was rather aimed at cost savings and was „component" oriented: he solved the same or a better performance of certain product functions with a "cheaper" component (occasionally with a more easily available material).   In an additive model corresponding to the principle of weighted scoring and by showing the more favourable and economical solution of the individual functions separately, this "function analysis" made it possible to redesign the product.

With agricultural produce and food industry products, consumer utility is of general effect and is not based on functions but on measurable properties that cannot be changed one by one so easily as in the case of industrial products. Thus also the economic assessment, developed for grading plant and animal varieties through experiments, set out other requirements on the method. The most important one of these is that variety is a biological "instrument of production" determining the qualities and properties of a product, therefore its characteristics of production (yield capacity, resistance, amount of care demanded etc.) have to be evaluated together with the usefulness of its product. Its costs, however, can hardly be split up among the characteristics (functions), as for instance the cultivation costs of farming relate to area instead of unit of produce, and similarly, the fodder costs in animal husbandry cannot be allocated among the characteristics of animal products very easily.

We might venture the assumption that goods analysis cannot do without "more holistic" approaches where it cannot advance with "reductionism" by evaluating details in more detail.

How did goods analysis resolve these requirements? Let us place take a look only at the most important ones.

Maybe the most fundamental one is the term "relative", the principle of relation. It expresses everything with a ratio, ie in relation to something (a comparative object, a similar product, or to one of its identical features even). Therefore, the factors of utility can only be summed up in the form of a series (rates cannot be subtracted from or added to each other) and expenses too have to take the form of relative aggregate cost. Thus the aggregate economic value is a ratio without dimension, which can be understood as capital (cost) efficiency instead of the usual expression "net profit".

In goods analysis the "principle of double relation" becomes reality: ie utility factors are compared one by one and then their aggregate effect is divided by the equally relative value of total expenditure.

It is important to note here that only the economic value of very similar goods and services fulfilling identical needs in a very similar way can be expressed in relation to the economical character of the comparative object. The fluctuation of supply and demand of such similar products can be regarded as identical (parallel) thus it is to assume that a consumer (buyer) will accept their price ratio mostly in proportion of their perceived utility (his or her own value judgment).

Apart from such objective, general and uniformly judged (being that everybody finds the same thing favourable) characteristics, a product may have a special feature that is more favourable or less favourable, depending on taste. This is why goods analysis uses preference tests and takes additional utility into consideration.

The attractive force of a special character or the "fashion" of demand can lead to extra utility that, based on its objective characteristics, can enhance the competitiveness of the product. (Competitiveness can be expressed as the quotient of relative utility and relative cost need: the higher this quotient, the lower the price level for profitability and the higher our profit can be.) If a cost-efficiency of this kind is attributable to ecological reasons (habitat), this can increase the competitive strength of the region (cultivation area) which could even be supported by the legal protection of the site.

In addition to this, the ecology-related advantages of agricultural production are also of great importance: lower production costs (either from cost saving or increased yield). All this, including proximity to the market, can be modelled with the method of goods analysis, maybe with the exception of the competition-enhancing effect of better management and marketing – unless we consider the advantages arising from the application of this method.

Goods analysis investigates and compares characteristics and performance. First of all, these have to be converted to a "common denominator", namely in the economic sense. This is the purpose of the formulae used for an economic transformation of scientific parameters.

The factors of goods analysis that are transformed, and then related to a comparable object, expressing utility and aggregated in their multiplicity, have to be compared to relative cost. A special problem is to express relative costs in the form of a ratio:

it is even more difficult, because the calculation is made ex ante. The model not only solves the problem of expressing it as a ratio but makes our calculation easier as well: considering "varying" (differing) costs only, it enables us to make this calculation based on the expenses given in natural units.

2.3. The practical application of goods analysis methodology – primary research

In the third part of my dissertation I examined the possibilities of using the theoretical models and methods in practice. I demonstrated how a synthesizing evaluation based on the results of goods analysis can summarize different factors. I tried to set up a model for the methodological thinking, task fulfilment and proposal formulation being the bases for multifactor optimization, which is so characteristic of our complex world. I carried out extensive research into the quantification of people's opinions that play a relevant role in product development. I investigated the preferences for wine and beer consumption from a number of aspects.

My first market-related investigation was a paired preference test by randomly serving wine/beer samples simultaneously, with an extra repetition for consistency check. For the wine preference tests I used 15, for the beer preference tests 18 people, and the number of samples was 5 in both cases. The paired preference test was followed by a questionnaire survey aimed, on the one hand, at assessing a price ratio based on taste and, on the other, at modelling how the preferences of the subjects change once brand names and prices were known. Without making a repeated reference to actual data here, I came to the conclusion that an average consumer is inconsistent with regard to his or her taste preferences which suggests that, based on the senses alone, they are not able to make a clear distinction between two sorts of beer (or wine), thus other factors eg brand image, packing, purpose of purchase, and price are of crucial importance.

With my further investigations I would have liked to find the answer to some additional questions in connection with this theme. How consistent are certified wine judges? Does the order in which the wine types are served have a bearing on judgments?

On three consecutive occasions (at the same time on two different days under the same circumstances), five certified wine judges assessed 30 chardonnay types on a 20-point scale.

The participants were unaware of evaluating the same 10 wine sorts on three occasions, once in a different and two times in the same order. In the second phase of the investigation, I analysed the first four of the 20-point judgment ranking according to the methods of paired preference testing.

In the three judgment rounds, the average of the 10 wines was almost identical. This indicates that if judgment criteria are previously determined and the points that can be given to certain constituents (taste, smell, bouquet, colour, overall impression) are limited, it can enhance the objectivity of the assessments and lead to a relatively uniform judgment on the global quality of the wines.

Naturally, the above do not mean that the judgments made about the individual wine sorts on different occasions should not differ, even considerably.

From the point of view of marketing, the clear moral is that there was no immediate relationship between the price and the 20-point evaluation of wine sorts. Thus we cannot say that a more expensive wine sort is, simultaneously, of superior quality. This condition means that several factors in addition to quality can be taken into consideration when positioning wine in the market. It is important to stress, however, that this does not imply a secondary role of quality but rather that quality in the eyes of a consumer is influenced by a number of additional factors besides product parameters. My investigations have shown that the judgment of wines is largely affected by the order of serving.

Summing up the results of my investigation we can say that different scoring systems very often used on wine judgments seem, with a sufficient number of judges and judgments, suitable to pre-filter wine sorts roughly as well as to select the best ones. Therefore, when the scoring method is used, the accepted and professionally correct practice is when all the wine sorts are qualified (with a gold medal, for instance) that reached a previously established score. But by itself the scoring method is unable to eliminate assessment distortions stemming from the order of service. This mistake can best be avoided by using paired preference tests. Therefore, the best results in wine judgment are obtained by combining the two methods.

In connection with the quality-value defining role of product characteristics (in grading malting barley) I analysed expert opinions using paired preference tests.

The survey involved the section for malting barley improvement of the Gabonatermesztési Kutató Kht. as well as Hungarian breweries and malt-houses (Dréher, Interbrew, Heineken and Szalon breweries; Albadomu and Soufflet malt-houses).

On a questionnaire I randomly listed all possible pairs of the 14 evaluation

factors that are most commonly considered in Hungary to query preferences. I requested to define "preference" based on the following question: "Which of the two items, only differing in the stated characteristics, would you choose (provided that price and availability are identical, of course) if with the first evaluation factor No. 1 and with the second No. 2 is just sufficient enough, while all the other factors are excellent?"

The survey reflects the opinion of the representative Hungarian brewing companies giving an understandable representation of the importance attached to properties affecting malting barley quality, of similarities and differences in their opinions. Based on the above it became apparent that the importance of characteristics was judged in two ways. The two rankings were traceable to differences in judgment of the importance of protein content in barley, total N-content of malt, apparent final attenuation, the Hartong number and diastatic enzyme activity.

Although the survey helped to interpret the brewing quality components of barley in a more subtle manner, the fact should not be neglected that the obtained rankings and ranges do not reflect the actual quality of malting barley but the opinions with regard to it. Naturally, the two do not necessarily coincide as respondents do not determine their preferences based on an abstract quality image but rather on the fact how problematic its use appears to them.

Consequently, we cannot directly quantify a stable, generally accepted index for malting barley quality from the obtained rankings and interval scales. Moreover, even the set goal, the effective quality development strategy of improvement may be erroneous if, when designing it, we interpret the rankings of characteristics mechanically.

Despite the above, my research successfully transferred the brewing quality image to improvement, partly by shedding light on current grading trends. Simultaneously it also demonstrated that qualification criteria are greatly dependent on conditions and, therefore, are likely to change very easily. When formulating an improvement strategy we must bear in mind that instead of a forced improvement of those characteristics that were ranked as more important it might be more expedient to make minimum characteristics better, irrespective of their place in the ranking. Eliminating minimum levels can be so important that for this purpose it may be worth making a compromise over the quality of one or two relevant properties (if there is room for it, of course). With the case study I wished to demonstrate that evaluation through the method of paired preference tests can be useful in markedly interpreting fuzzy problems similar to the example considered here.

Therefore, the case study can be regarded as a frequent method of the learning process which, in my case, made the examined system more comprehensible for human thinking by showing its consistencies and inconsistencies as well as the accord and disaccord (generally speaking: the contradictory nature of the system and the satisfactory character of systems factors).

Briefly we can say that with the help of primary investigations, I proved the practical applicability of the major theoretical methods of goods analysis. In my analyses I pointed out relating theoretical and practical connections, and made a number of assertions and suggestions regarding methodology and in connection with this research.

2.4. Value approach and strategy

In the fourth part of the dissertation I showed how goods analysis, discussed in the dissertation, is reflected in my system of value marketing. I explained that an ex ante modelling of utility, the expression in relation to a competitor of the same line in a dimensionless ratio, a methodological examination of the objective and subjective consequences of characteristics, the effective support of strategic product decisions, a compatibility with its value-oriented complex system, and the evaluation of additional utility are only some of the criteria that emphasize the growing importance of this method in a globally perceived tendency. Under the influence of enhanced competition, saturated markets, more conscious buyers, this tendency focuses on consumer problem solving, need satisfaction, value creation, and long-term satisfaction. This approach and philosophy characterize and determine different corporate functions or even the entire operation of a company.

Among the product strategic implications of goods analysis I presented my interpretation of the system of goods analysis, marketing thinking and strategic hierarchy (Figure 2.), and I explained the interrelations between the processes and data of goods analysis, and the different considerations of product strategy (Table 1).
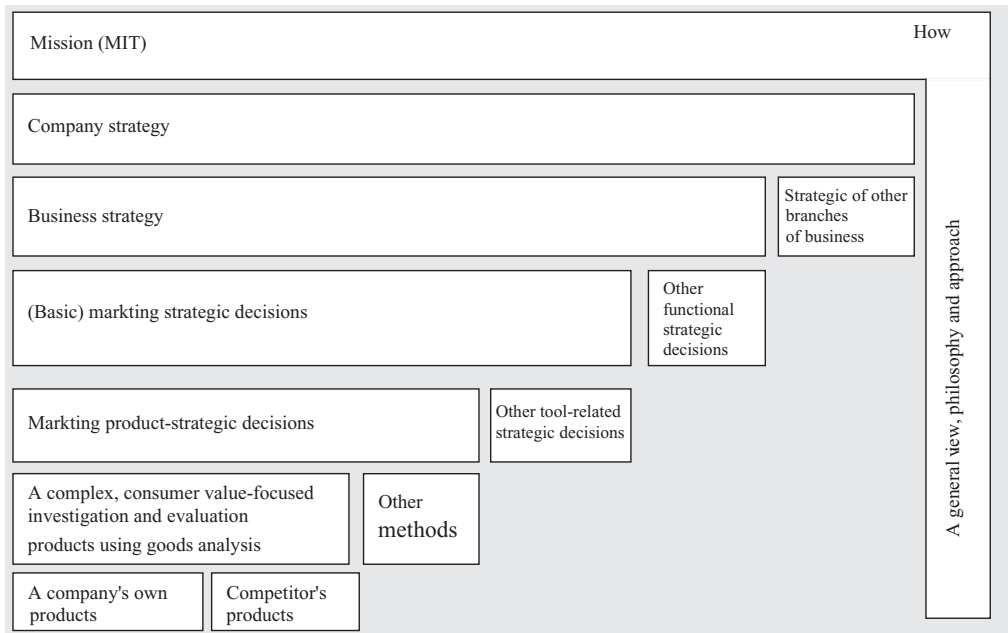
Figure 2. The appearance of goods analysis and the marketing-oriented approach in the strategic hierarchy *(Source: Péter Tomcsányi – doctoral dissertation)*

Table 1. Product strategic considerations of goods analysis

Data and calculated values of the analytical process of goods analysis	Types of (product) strategic considerations	How does it help?
Recognition of selection criteria, determination of comparative "C" object	1, Situation analysis	Provides data
	2, Analysis and identification of competitors	Provides data
	3, Product development	Helps to estimate selection depth/width New product ideas
	4, Selection of basic strategy (Ansoff)	Explores motives for diversification
Selection of characteristics expressing utility	1, Product development	States preferences
	2, Communication	Provides data for argumentation system
	3, Research into consumer behaviour	Provides data by extensively considering objective and subjective facts
Models and the process of transforming the natural values of the characteristics expressing utility into "utility"	1, SWOT analysis	Provides data (eg explores relations through preference tests)
	2, Product development	Modelling the components of brand value
Cost-structuring of utility	1, Product development	Determines the direction of development. Changes the utility/cost structure, enhancing competitive edge
Determination of the ratio between utility and price	1, Product positioning	Data and criteria in relation to competitor (possible versions of "distinction")
	2, Perception maps	Argumentation maps based on the evaluation of characteristics
	3, Change in product structure	Determines its direction and scale
	4, Performance curves	Explores the utility/price/cost relationship
	5, Product concepts	A choice between product characteristics and their utility helps to design the product concept

(Source: Péter Tomcsányi - doctoral dissertation)

3. Main assertions, results and suggestions of the dissertation

3.1. Assertions about goods analysis methodology

1. I improved the calculation algorithm of the most complex transformation model of goods analysis by introducing natural corrective limits. The core of the methodological innovation is that I introduced notions that are closer to reality and integrated them into the calculation algorithm in order to resolve the compensatoriness (the mutually neutralizing effect of above-average and below-average criteria) and to determine the limit values increasing weighted scores. In my opinion, my methodological suggestion to eliminate compensatoriness can help to explore the real value structure more precisely also in the case of value analytical and utility-modelling methods based on other weighting (scoring) processes.

    The approach that is based on general effects and cost ratios, and examines characteristics, makes a systematic comparison of the cost and utility structure of products (services) from a methodological point of view more difficult. To solve this problem, I devised a method that stresses those cost elements where a cost-utility disproportionateness is more likely, therefore methodologically complex characteristic-cost-utility analyses need to be performed in a few cases only. I call this procedure a "cost-utility structure analysis". The essence of a cost-utility structure analysis is to analyse in depth the effect of every changing cost element exerted on utility with which elements the cost ratio of the two compared products – along with a considerable co-financing of costs – markedly differs from their aggregate cost ratio.

2. A systematic study of the literature on goods analysis and related disciplines, a continuous investigation, comparison and combination of well-structured information triggered in me a mental process that led to new ideas and knowledge. Tomcsányi (1966) calls this independent form of secondary research, promoting mental creation, 'research knowledge management'. As a result of an extended reproduction of information I suggested introducing three new methodological notions (a, b, c) in the dissertation.

a, I introduced a modern classification and evaluation of problem-solving methods. The key of the systematization I propose is the logical net which, by ordering building blocks in a special way, offers a problem-focused process based on positive synergy. The analysed methods were evaluated according to the investigation purpose (data acquisition, analytical evaluation, synthesizing evaluation), the approach (procedure, combination of procedures, logical net) and to the form of expression (algometric, mental, algomental). In my opinion, by introducing these modern concepts, we can devise – from the point of view of our research – a useful and clear structure of our "scientific tools" that can help us to choose the most effective tools and to minimize the methodological risk of the research process.

b, When discussing the decision preparation and support function of goods analysis and the relations of evaluation I briefly touched upon the heuristic interrelationships of the methodological thinking accompanying the advantages and disadvantages, a synthesizing evaluation and the formulation of suggestions for solution. Among other things, I introduced the notion of visual, abstract and research-supportive symbology. I established the types of visual heuristics and presented the general model of analogical problem solving. In my view, the described models help (both researchers and practice-oriented experts) to get familiar with the relations between methodological thinking, processing and in elaborating suggestions.

c, Evaluating scientific results and discussing its issues, as well as exploring the relationship between and devising the models of the scientific or research goal, the decoding system and the target audience can help to precisely interpret a difficulty that often accompanies research and to set the guidelines for solution.

3.2. Assertions about the practical use and evaluation of goods analysis

1. I placed great emphasis on the simple understanding and visual, restructured representation of the complex processes of goods analysis. In the following cases, different interpretation covered both formal (visual) and content-related elements:

a, A comparison of cost analysis, value analysis, goods analysis and benchmarking.

b, A visual model of the general process of goods analysis.

c, The key to define the model of transformation formulae.

d, A flowchart for calculating the algorithm of the complex utility index.

e, A conceptual model of cost-utility structure analysis.

f, A flowchart of the theoretical steps of a paired preference test and links.

g, The appearance of goods analysis and the marketing–oriented approach in the strategic hierarchy – see Figure.

h, Product strategic implications of goods analysis – matrix.

2. With the help of primary investigations, I proved the practical applicability of the major theoretical methods of goods analysis and pointed out its relations through my analyses. In addition to my assertions, in the form of methodological suggestions I also touched upon the linearized structuring and dual interpretation of efficient factors.

a, For a practical application of a decision table, I evaluated Scarlet and Marézi malting barley varieties from the point of view of production. In my investigations, I stressed and used examples to illustrate the fact that without minor changes and transformation, the various theoretical models are not easy to apply to a special, practical problem, therefore their high level adaptation is to be made by the researcher.

b, For opinion-based goods evaluation I carried out a paired preference test on different beer and wine samples followed by a questionnaire survey. The results of the paired preference test were a good way to model the factors behind our decisions, which are indispensable for product development and marketing. The investigation proved both the practical applicability of paired preference tests and the importance that an opinion-based estimation of utility has in product evaluation.

c, In the methodological background of a number of utility modelling and value analytical processes there are the weighted scoring procedures. Weighting is a relevant moment of aggregation, as this is the way that the different significance of factors is expressed. I carried out the evaluation and weighting, based on expert opinions, of the characteristics determining malting barley quality with the method of paired preference tests. In the course of my investigations I found that a weighting of product characteristics established by goods analysis using paired preference tests gives a realistic evaluation of the role that product characteristics play in defining quality.

3. When discussing the product strategic implications of goods analysis, I determined its role in the hierarchy of company strategies and analysed the (product) strategic aspects of goods analysis in detail. I established a clear relationship between the processes, the data, and the partial results of goods analysis and its strategic considerations, and defined the nature of this relationship through specific examples.

4. In a comprehensive evaluation of goods analysis I found that an ex ante modelling of utility and, based on this, planning (product) strategy lead to a modern approach that is one of the most complex systems of value marketing. Goods analysis is such a unified system that besides its theoretical foundations includes the entire process of data collection, processing, evaluation and utilization but, due to the nature of the method, extensive analyses are conceivable for agricultural and food industry products, above all. We can say that completed with other methods in the areas of industry or services, it can make relevant partial research possible. In my opinion, its complexity and manifold method synthesis hinders its widespread application in practice because in a number of cases it may be more rational to use a methodologically questionable procedure if in practice – with considerable cost-saving – it yields satisfactory results. Now I hear the words of Morroney as cited in a book of methodology: the question is not which is perfect, but which one is sufficient.

3.3. New findings of the dissertation – theses

1. By introducing the concept of natural corrective limits and by implementing it into the calculation algorithm, I developed the algorithm for calculating the complex utility index, corrected with critical minimums and maximums, as a result of which the determination of corrective limits models reality in a much more precise way.

    I introduced the methodology of a cost-utility structure analysis with which, by saving considerable costs, we can clearly define those factors on which the methodologically complex characteristic-cost-utility analyses have to be carried out.

2. In the dissertation I suggested introducing three new methodological notions:
    a) By suggesting the notion of a "logical net" I introduced a modern classification and evaluation of problem-solving methods that help us to choose our scientific tools.

    b) In the area of heuristic problem-solving thinking I introduced the notion of visual, abstract and research-supportive symbology. I established the types of visual heuristics and presented the general model of analogical problem solving that help understand the relations of methodological thinking, processing and suggestion elaboration.

    c) I established the scientific model presenting the "research objective–decoding system–target audience" relations that helps to interpret results appropriately.

3. With several models, I made different visual representations for content in order to facilitate the understanding of the complex process of goods analysis, its practical applicability and the possibilities for its development. With the help of primary investigations, I proved the practical applicability of the major theoretical methods of goods analysis and in my analyses I pointed out its relations. In addition to further general methodological suggestions (linearized structuring of efficient factors, dual interpretation) I made several assertions and suggestions for a real objective or area of examination.

4. I established a clear and modern relationship (supported by examples) between the processes, the data, and the partial results of goods analysis and its strategic considerations.

   In a comprehensive evaluation of goods analysis I found that an ex ante modelling of utility and, based on this, planning (product) strategy lead to a modern approach that is one of the most complex, high-level systems of value marketing. I suggest using the complex method of goods analysis in practice for products of the agricultural and food industry, but for industrial purposes or services I only find it suitable as a complement to other methods, or for performing partial research.

4. Summary

We live in the era of value marketing. Under the influence of global tendencies, the solution of consumer problems, need satisfaction, value creation, and long-term satisfaction have to be focused on; this approach and philosophy characterize and determine different corporate functions or even the entire operation of a company.

To design the appropriate strategy and forms of behaviour, wider dimensions of consumer value and utility need to be explored. Modelling correlations is a complex thing because utility not only implies outstanding product quality but also a number of factors related to psychology, sociology, health, comfort, taste, habit and, last but not least, fashion.

This endeavour directed my attention to the methodology of the quantifying approach of relative utility as introduced by Pál Tomcsányi in 1994 under the term 'goods analysis'.

Some of the major objectives of this discourse were to present the role of and the relations in goods analysis within value marketing; a theoretical comparison of processes with similar goals; to study the complex method synthesis of goods analysis; and to explore the possibilities for its practical application through primary investigations. The main purpose of the evaluation is to determine the presumed place, role and significance of goods analysis within the value marketing of products.

The basis for the theoretical elaboration of this subject was an analytical overview of related Hungarian and international literature. To prove the statements, results and theoretical assumptions based on secondary research as well as to further improve their practical applicability, I have conducted several primary (empirical) investigations. Mathematical and statistical processing of data was done with the help of the target software developed in the National Institute for Agricultural Quality Control (Országos Mezőgazdasági Minősítő Intézet), partly for the method of goods analysis. For further calculations and analyses I used various statistical methods described in the works of Sváb (1981), as well as Kindler and Papp (1977).

In the first part of my dissertation I gave a detailed overview of how the image of value and utility changed in science, including economics and marketing, over the years. Then I discussed the subsystems constituting the complex notions of goods analysis in detail. In the third part of my thesis I examined the possibilities of using the theoretical models and methods in practice. I demonstrated how a synthesizing evaluation based on the results of goods analysis can summarize different factors. I tried to set up a model for the methodological thinking, task fulfilment and proposal formulation being the bases for multifactor optimization, which is so characteristic of our complex world. I carried

out extensive research into the quantification of people's opinions that play a relevant role in product development. In the fourth part of the dissertation I showed how goods analysis, discussed in the thesis, is reflected in my system of value marketing. Among the product strategic implications of goods analysis I presented my interpretation of the system of goods analysis, marketing thinking and strategic hierarchy, and I explained the interrelations between the processes and data of goods analysis, and the different considerations of product strategy.

The new findings or theses of the dissertation can be summarized as follows:

By introducing the concept of natural corrective limits and by implementing it into the calculation algorithm, I developed the algorithm for calculating the complex utility index, corrected with critical minimums and maximums, and I determined the methodology for a structural analysis of cost-utility.

In the dissertation I suggested introducing three new methodological notions: logical net; visual, abstract and research-supportive symbology; "research objective–decoding system–target audience" model.

With several models, I gave different visual presentations for content in order to facilitate the understanding of the complex process of goods analysis, its practical applicability and the possibilities for its development. With the help of primary investigations, I proved the practical applicability of the major theoretical methods of goods analysis and pointed out its relations. I established a clear and modern relationship (supported by examples) between the processes, the data, and the partial results of goods analysis and its strategic considerations.

In a comprehensive evaluation of goods analysis I found that an ex ante modelling of utility and, based on this, planning (product) strategy lead to a modern approach that is one of the most complex systems of value marketing. I suggest using the complex method of goods analysis in practice for products of the agricultural and food industry, but for industrial purposes or services I only find it suitable as a complement to other methods, or for performing partial research.

5. AUTHOR'S PUBLICATIONS RELATED TO THE DISSERTATION SUBJECT

Scientific book or excerpt

in Hungarian language:

1. Tomcsányi Péter (2001): Az áruelemzés gyakorlati alkalmazása, elméleti kiegészítése. Függelék 339-414 pp., In: Tomcsányi Pál - Tomcsányi Péter (2001): A piaci áruelemzés és marketing termékstratégia elméleti háttere és gyakorlati alkalmazása. Eszterházy Károly Főiskola-Phare, ISBN 963 941 702 05

2. Tomcsányi Péter (2001): Az élelmiszerek terméktulajdonságai és összetevői. 159-163 pp., In: Lehota József (2001): Élelmiszergazdasági Marketing. Műszaki Könyvkiadó, Budapest, ISBN 963 162 802 7

3. Tomcsányi Péter szerk. (2004): A kutatási módszerek fejlesztése a piactudományok tapasztalatai alapján. MTA IV Agrártudományok osztály és MTA Gazdasági és Jogtudományok osztály Marketing Bizottsága, Budapest, 66 p., ISBN 963 508 429 3

Scientific papers

in Hungarian language:

4. Tomcsányi Péter (1998): A heurisztikus módszerek a stratégiai tervezésben. Marketing & Management. 1998 XXXII. évf. 5. sz., 37-40. pp.

5. Tomcsányi Péter (2004): Az értékeken nyugvó marketing stratégia összefüggései. Marketing & Management. (submitted for publication)

6. Tomcsányi Péter (2004): Szakértői vélemények leképezése páros preferencia módszerrel. Gazdálkodás, ISSN 0046-5518, (submitted for publication)

7. Tomcsányi Péter (2004): A sörárpa minőség összetevőinek súlyozása. Élelmezési Ipar, ISSN 0013-5909 LVIII évf. 2004 10. sz. 312-318. pp.

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Research. HU ISSN 1216-4526 (submitted for publication in September 2004)

9. Tomcsányi Péter (2004): Methodological issues of goods evaluation based on expert opinions. EU Working Papers. Budapesti Gazdasági Főiskola (submitted for publication)

Lectures delivered on scientific conferences, published as conference proceedings

in Hungarian language:

10. Tomcsányi Péter (1997): Az élelmiszertermelés versenyképességének növelése analogikus kapcsolatok felkutatásával. Vállalati környezet és alkalmazkodás az élelmiszertermelésben. GATE GTK megalakulásának 10. évfordulójára megrendezett konferencia, 53-55. pp., ISSN 1418-950x, ISBN 963 8140 78xö, ISBN 963 8140 81x

11. Tomcsányi Péter (1998): A mezőgazdasági és élelmiszeripari termékek technoökonómiai értékelésének termékstratégiai összefüggései. VI Nemzetközi Agrárökonómia tudományos napok, Gyöngyös, 231-237. pp., IV kötet, ISBN 963 8140 7040, ISBN 963 814 071 2

12. Tomcsányi Péter (2004): Az agrártermékek értékmarketingre épített hasznosság modellezése. In: Tomcsányi Péter szerk. (2004): A kutatási módszerek fejlesztése a piactudományok tapasztalatai alapján. MTA IV Agrártudományok osztály, MTA Gazdasági és Jogtudományok osztály, 37-40. pp., ISBN 963 508 429 3

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Research reports

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14. Tomcsányi Péter (2001): Agrártermékek és élelmiszerek piaci versenyképességének egzakt áruismereti és lélektani tényezői, értékítéletük befolyásolása marketing eszközökkel. OTKA kutatási jelentés, F 025 109

Professional articles

in Hungarian language:

15. Tomcsányi Péter (2003): Vélemények alapján történő áruértékelés szerepe a termékfejlesztésben – avagy mi alapján dönt a fogyasztó? Bor és Piac borpiaci szakmai magazin, 2003/7. szám, 20-24. pp., ISSN 1216-528X

16. Tomcsányi Péter (2004): Borbírálat a páros preferenciavizsgálatok tükrében, Bor és Piac borpiaci szakmai magazin, 2004/8-9. szám, 42-43. pp., ISSN 1216-528X

Other works published in print or electronic form

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17. Tomcsányi Pál, Tomcsányi Péter (2001): A termékhasznosság mint versenytényező az európai piacon. Magyar Tudomány Napja 2001. alkalmából rendezett tudományos konferencia. Eszterházy Károly Főiskola, Eger