

BEHAVIOUR OF CONSUMERS IN EU COUNTRIES

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Abstract

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The paper focuses on development of consumer behavior on the basis of household expenditures in 1996, 1999 and 2002 in individual countries in Europe. As a tool to examine the changes in behavior was used cluster analysis. The results of this analysis are illustrated in dendrograms, which help to estimate the greatest differences in consumer behavior among north-western European countries and new countries joining EU, then also among western European countries and south European countries. For the analysis of factors with influence on consumer behavior is required a research about motives of behavior and consumption of main agricultural commodities.

consumer, behaviour, cluster analysis, EU

According to Dobřický [2003] the consumer behaviour in the market is a complicated process, which is influenced by cultural, social, personal and psychological factors. During the process of buying goods and/or services, motives of people and their behaviour are very complicated and practically unpredictable. However, it would be a mistake to think that the consumer behaviour concerns only the moment of purchasing because consumers do not make decisions and are not influenced by the above factors only within this time interval but also before and after the purchase. The only common feature of all consumers is the fact that their behaviour is targeted to the purchase of a product, which would satisfy their needs and wants.

Kotler [2001] mentioned that the cultural factors show a crucial influence on needs and the behaviour of consumers because children obtain their habits and values, knowledge, preferences and behaviour from their parents and in fact learn really since their birth in various key situations. Besides, each culture involves different subcultures, which offer to their members better conditions of self-determination

and integration into the society. Subcultures may be of national, regional, racial and geographical nature. Within the framework of a subculture it is possible to observe a further stratification to social layers and/or classes. Consumers are influenced also by social factors, which involve the so-called reference groups- family, social roles and social status. A reference group involves all the people who influence, both directly and indirectly, the behaviour of individuals. In each society, the family represents the most important consumer unit and for that reason it is intensively studied. Family members represent one of the most important primary reference groups. The family orientation is generated and formed by parents and siblings. The role involves those human activities, which are a priority expected and which participate in the formation of a certain social status. Personal factors are also very important and involve, among others, age, stage of the life cycle, profession, personal economic situation, life style, personality and self-determination. Last but not least it is necessary to consider also psychological factors, which involve motivation, perception, learning capabilities, opinions and attitudes.

Basing of different kinds of buying, the consumer behaviour before, during and after the purchase can be classified into four different type groups of purchasing: (1) The complex purchasing behaviour is a process, which consists of three steps. At first the buyer generates his/her ideas about the product and/or service, thereafter decides what to buy (especially if the purchase is important and if there are significant differences among individual brands) and finally buys the selected good. (2) The dissonance-reducing behaviour is the situation when the customer is very interested in the purchase of goods and when there are no more significant differences among individual brands. (3) The routine purchasing behaviour is that kind of buying when people buy goods without a more serious consideration because there are no differences among individual brands. The last type of consumer behaviour is (4) the purchasing behaviour looking for the diversity. In this case the buyer is not interested too much in the purchase but the brands show great differences.

OBJECTIVE

Methods of marketing research enables to collect and evaluate data concerning consumer behaviour. Each serious marketing inquiry consists of several stages. According to Stávková [2004], these stages involve problem identification and definition of targets,

orientation analysis of the situation, elaboration of research plan, data collection, analysis, information processing and, finally, presentation of results. This study deals with the comparison of consumer behaviour of households in the enlarged European Union.

MATERIAL AND METHODS

Data used in this study informs about percentage of expenses of households in individual countries of enlarged European Union when buying some commodity groups within the period of 1993–2002; these data were published on EUROSTAT web sites. These data were obtained from local retailers, service providers and statistical offices by means of questionnaires distributed by post, e-mail, telephone and/or Internet in individual member and candidate countries of EU. The obtained data are comparable above all due to their classification into according to the COICOP/HICPs classification (Classification of Individual Consumption by Purpose/Harmonized Indices of Consumer Prices). Harmonised indices of consumer prices (HICPs) are used to define the inflation convergence, which enables to convert data collected in countries with different consumer's baskets to a common denominator and to compare them thereafter. All indices, which are published on Eurostat web sites, are generated by means of this classification.

I: COICOP/HICPs

Food and non-alcoholic beverages	Bread and pastry, cereals, meat, fish, milk, cheese, eggs, oils and fats, fruit, vegetables, sugar, jam, honey, chocolate and candy, other food products, coffee, tea, cocoa, mineral water, soft drinks, fruit and vegetable juices
Alcoholic beverages, tobacco	Spirits, wine, beer and tobacco
Clothing and footwear	Textiles, clothing, clothing complements and textile haberdashery, cleaning, repairing and renting of clothes, shoes
Housing, water, electricity, gas and other fuels	Rentals, maintenance and minor repairs, water supply and other services associated with housing, electric and thermal energy, gas, fuels
Furnishings, household equipment and routine maintenance of the House	Furniture, indoor equipment, interior decoration, carpets and other floor coverings, soft furnishing, home appliances, dishware and kitchenware, home and garden products, goods and services for routine household maintenance
Health	Drugs and health care means, ambulatory health care, hospital outpatient care (since January 2001)
Transport	Purchases of cars, car operation, transportation services
Communication	Postal services, phones and faxes (optional), phone and fax services (optional)
Recreation and culture	Audiovisual, photographic and data processing facilities and equipment, other durable products for recreation and culture, other recreation including outfits, flowers, gardens, pets, recreational and cultural services, newspapers, books, paper goods, complex holiday services

Education	Nurseries and kindergartens, primary education, secondary education, higher education, high and university education, other types of education
Restaurants and hotels	Catering and accommodation services
Miscellaneous goods and services	Personal care, personal gears and complements not mentioned elsewhere, social care, insurance, other financial services, other services

Questionnaire inquiries concerning the consumer behaviour are also based on this classification system. Data were analysed using the programme Statgraphics Plus followed by the cluster analysis, which represents on of the multidimensional statistic method enabling to break down a set of objects (in this case EU countries) into groups internally homogenous due to their similarities and at the same time also heterogeneous due to their mutual differences.

The term cluster analysis indicates generally a number of computations, which should break down (disintegrate) a set of data into several relatively homogeneous subsets (clusters) in such a way that the units and/or objects inside individual subsets would be as similar as possible while the units and/or objects classified into different clusters would show the maximum possible dissimilarity. During this classification, each unit is described by a set of traits (variables). Analytical results thereafter depend on the selection of variables, selected distance among objects and clusters and the algorithm of calculation.

The so-called dendrogramme is then the visual form (result) of this procedure and the methods of calculation involve for example Euclidean distance of objects, Hamming's distance and/or Mahalanobis's distance. This is followed by calculation of clusters of similar objects using the method of the closest or most distant neighbour, average distance or the centroid method. When comparing dendrogrammes originating from various years it is possible to identify the causes of changes in political and economical situation of individual countries (or in worldwide situation) and to draw conclusions concerning their effect on decision-making of consumers in individual countries and to define how it will be possible to influence them in the future.

RESULTS

Data available on internet EUROSTAT pages, which related to expenses of households in individual EU member and candidate countries, were analysed and prepared for comparisons in years 1996, 1999 and 2002. This was done for that reason that in these years there was the maximum possibility to obtain complete data about the structure of household expenses for the purchase of individual commodities from indi-

vidual countries in these years. These data were comparable because they enabled the use of harmonised commodity classification COICOP/HICPs (Tab. I).

Individual groups of parameters influencing the amounts of financial means paid for the consumption were food, alcohol and tobacco, clothing, household and its facilities, health care, transportation, communication, recreation and culture, education and others. Using the Eurostat calculations, these data were converted from absolute numbers to percentages to be able to compare individual countries regardless to the numbers of their inhabitants, GDP etc. Percent values of individual indices were used in the cluster analysis of variables, which resulted in the construction of aforementioned dendrogrammes. These figures illustrate graphically correlations existing among variables under study (Figs 1, 2, 3). Concretely, this was the hierarchic cluster analysis, in which the Squared Euclidean method was used to evaluate the dissimilarities and/or similarities of objects under study and also the Furthest Neighbor Method, which tends to create compact but not very large clusters. To assure a better comparability, the values of individual parameters were standardized within the framework of this cluster analysis.

In 1996, the process of cluster analysis resulted in a cluster involving only 27 units under study because no data were available from Bulgaria /Fig. 1). Clusters were groups of those units under study, which showed a similar character. In this case, this single final cluster among others corroborated that, in spite of the fact the analysis concerned various countries, the consumer behavior showed many similar traits. When compared with the USA or Japan, which were later on eliminated, it was possible to see that the similarity of European countries was quite clear. To create these clusters it was necessary to analyze separately each unit under study. Thereafter, they were paired in such a manner that the units classified into new sub-clusters would be as similar as possible. Thereafter the distances were re-calculated and new subgroups were formed. This procedure was repeated so many times that only one cluster remained.

In 1996, the level of consumer behaviour in the Czech Republic was similar at most to that of Slovakia; it was also very close to levels of consumer be-

haviour in Estonia and Hungary. In further sub-clusters, these two countries showed similarities with another two new member countries, viz. Lithuania and Poland. This indicated that these new member countries clustered into one of three more marked sub-clusters and that they created a compact group as far as the consumer behaviour and expenses for buying individual commodities were concerned. This situation could be caused by the fact that the quickly reforming countries (CR, Estonia, Hungary, Poland, Slovakia and Slovenia) with a more or less radical approach to the re-structuralisation of their national economies were relatively successful when eliminating the major market deformations, creating a legal frame for private entrepreneurship, privatising (excepting the Czech Republic with its coupon privatisation) and stabilising their local currencies. On the other hand, however, in countries like Bulgaria and Rumania the transformation process was nearly stopped due to inconsistency of their reform concepts and unpredictable economic policy. In Baltic countries, there were problems associated with their stronger orientation to the former Soviet Union and it was rather difficult to change it into orientation to Western Europe. As compared with Central European countries, their fight with inflation was longer because it influenced the expenses of households in the form of an increasing price level.

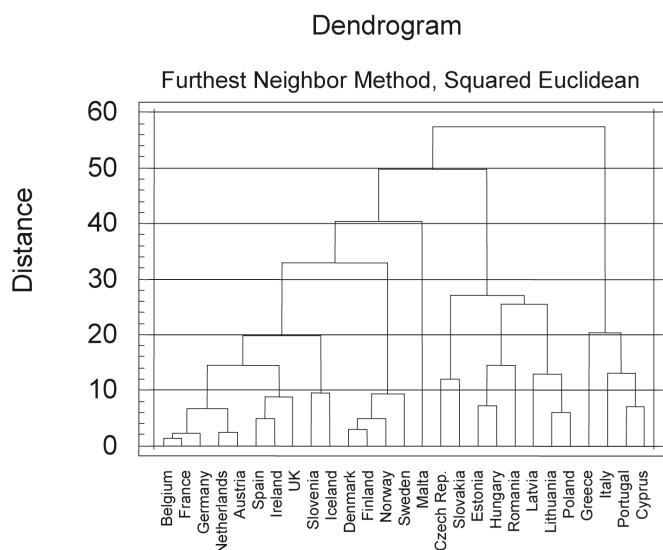
The manner of grouping of such countries like Belgium, France and Germany was another interesting phenomenon, which demonstrated the standard of living in individual EU countries. A similar consumption was observed also in the Netherlands and Austria. The first sub-cluster involved United Kingdom, Spain

and Ireland. In that time, Spain was on the same level as Ireland although from the economic point of view it should de facto belong to the sub-cluster involving Italy, Portugal, Cyprus and Greece. This could be expected on the base of high subsidies received from Brussels, which contributed significantly to an increase in consumption in Spanish national economy.

Slovenia was the only country, which differed from all other new member countries. The cluster analysis ranked it into the same sub-cluster as Island so that it was classified into the sub-cluster of developed West European countries. Slovenia showed this trend in the course of several subsequent years and occurred also in dendrogrammes of years 1999 and 2002. It would be surely interesting to find why and which were the causes of this phenomenon.

In a certain manner, Northern Europe was different from other West European countries and the habits and behaviour of Scandinavian consumers were unlike. There were similarities between Denmark and Finland on the one hand and between Norway and Sweden on the other; all of them, however, belonged to the same sub-cluster. Special traits showed also Mediterranean countries where the most similarities were found to exist between Cyprus and Portugal, followed by Italy and finally also Greece. This sub-cluster closed the complete cluster of European countries.

It can be said in general, that the greatest differences existed among countries of North-western Europe, new member and applicant countries (Central Europe and Baltic countries), Scandinavian and Mediterranean countries.



1: Dendrogramme of expenses of European households in 1996

The dendrogramme constructed on the basis of data concerning expenses of households in individual European countries in 199 (Fig. 2) involved already 28 units under study, i. e. 28 countries. The situation remained practically unchanged in Belgium, France and Germany; however, when having a more detailed look it was possible to see that they were much closer to Scandinavian countries, which created a sub-cluster of their own and that Finland showed many similarities with Sweden, followed by Norway. In Denmark, on the contrary, consumer's expenses were the most similar to those observed in Germany.

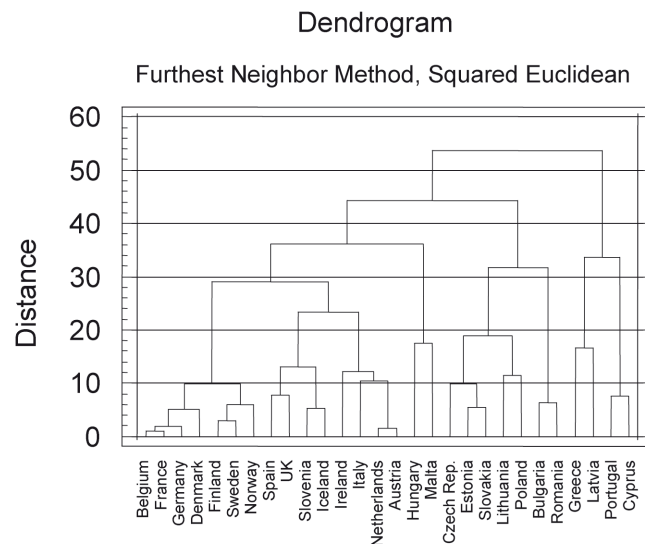
In Spain, the level of consumer's expenses approached to that of United Kingdom; at the same time, they created a smaller sub-cluster with Slovenia and Island, which was linked up with that of Austria and the Netherlands and was followed Italy and Ireland. Quite separated were Hungary and Malta, which in this year could not be ranked together with smaller sub-clusters and linked up with the sub-cluster of countries mentioned above. Similarly as in 1996, Slovenia occurred in one sub-cluster with Island, which showed the most similar level of consumption.

In 1999, the candidate countries created in the final stage the uniform sub-cluster; Slovakia was in a similar situation as Estonia and both of them were ranked

together with the Czech Republic. This sub-cluster was integrated with the sub-group of Poland and Lithuania, which was later linked up with Bulgaria and Rumania (these countries seemed to be on the same consumer level). Lithuania reached the level of Greece and, in spite of the fact that geographically it belongs to the countries of North-east Europe, it was classified at the level of South-east Europe.

Portugal and Cyprus formed the last sub-cluster. In general, it was possible to see that although there were some changes in countries like Lithuania or Hungary, which separated from the group of former candidate countries, it was still possible to differentiate between the consumer levels of countries of Western Europe and Scandinavia, candidate countries of Central and Eastern Europe and countries of European South-east.

In this period, the world economy recovered after the so-called Asian crisis and from unstable financial situation of Brasilia and Russia. Prices of oils and many other commodities reached a very high level. Problems and complications associated with the phenomenon called Y2K (i.e. the new millennium) were also expected, which retarded the national economy of United States and nearly stopped those of Japan and Europe.



2: Dendrogramme of expenses of European households in 1999

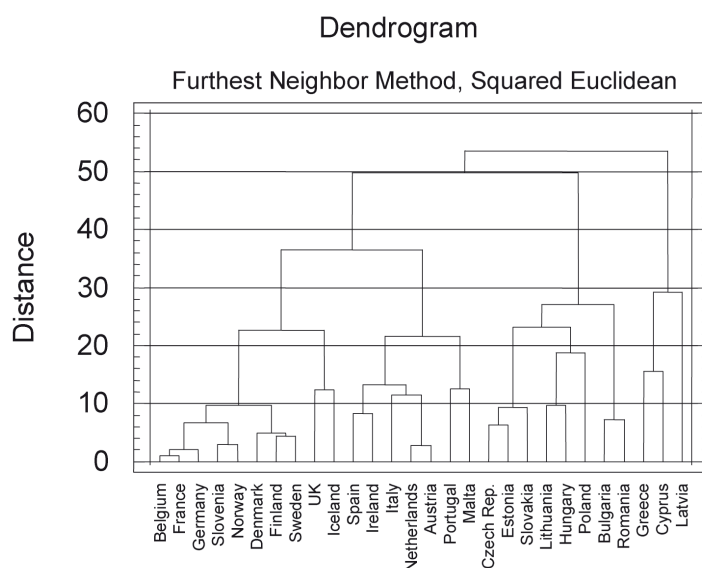
In 2002, when the world economy was still influenced by a slow growth and, in addition, also shocked by events of 11 September 2001. This caused an inhibition of economic growth in the United States and, thus, also other countries so that there was an only very slow recovery of economic growth in the world.

Regarding the fact that this recession occurred worldwide, the structure of consumer's expenses in individual countries under study did not change too much as compared with 1999. Belgium, France and Germany hold their position and Slovenia again because of certain reasons deflected from candidate countries and joined this time Norway. This sub-cluster was linked up with other Scandinavian countries, i. e. with Denmark, Finland and Sweden. United Kingdom occurred for the first time in the sub-cluster with Island, which was thereafter in-

tegrated with the sub-cluster of West and North European countries.

Ireland was on the same level as Spain; this could be explained on the base of a continuing trend of supply of finance from EU. Italy was linked up with the sub-cluster of The Netherlands and Austria. This sub-cluster was thereafter integrated with Portugal and Malta.

In this year, candidate countries created again a greater cluster, in which the Czech Republic was paired with Estonia and Slovakia, Lithuania with Hungary and Poland. Bulgaria and Rumania remained at first on the same level but thereafter were linked up with Central European and Baltic countries. Of them, Lithuania stepped aside and got to the level of Greece and Cyprus, which were classified as less successful countries of European Union.



3: Dendrogramme of expenses of European households in 2002

Forces, which have influenced and still influence the consumer behaviour obviously do not belong only to the categories of cultural, social, personal and psychological factors; in today's globalised world we can trace also strong effects of those factors, which result from interlinks and bonds of individual national economies especially on the macroeconomical level. In this direction the effect of US national economy on the world situation is the most important.

When speaking about macroeconomic parameters

it is possible to say that the volume of GNP is certainly influenced by the size and possibilities of consumer demand. Expenses, as well as the amount of available financial means of households depend also on inflation rate, unemployment, wages and salaries, and prices of goods, services and transportation. In individual countries there are differences in the length of leaves and number of workdays per week; this can influence the height of expenses related to recreation and free time. The need of further education will

be influenced not only such external factors as pressures of the labour market and/or employers but also by the microenvironment of individuals and by their families.

Consumer expenses can be also influenced by differences in the standard of living in individual countries because also in Europe, there are rich and poor countries. Differences in Europe could be explained on the base of different needs existing among larger groups of states. It can be said that in the majority of cases the consumption is influenced also by the geographic situation of each country because the similarities existing in the structure of consumer's expenses are influenced above all by the habits, which exists among people living in neighbouring countries. This means that they are clustered into sub-clusters of countries, which are neighbouring and-or are situated in a given geographic region of Southern/Western/Northern Europe and/or belong to the group of new member or candidate countries.

CONCLUSIONS

The application of cluster analysis while studying the behaviour of consumers in individual European countries in years 1996, 1999 and 2002 resulted in the graphical construction of dendrogrammes, which conclude that the most important differences exist between Scandinavian countries on the one hand and new member countries on the other as well as between the North and the South of Europe. This basic differentiation persists inspite of the fact that there are changes in the behaviour of citizens of individual countries. results of this study indicate that to be able to analyse primary data obtained within the framework of an extensive inquiry focused on motivation and behaviour of consumers with regard to the major commodities such as: 1) beverages, 2) bread and pastry, 3) meat and meat products and 4) milk and dairy products. To assure the representativeness of results the following control traits were also taken into account: sex, social group, age and domicile.

SOUHRN

Spotřebitelské chování v zemích EU

Výsledkem aplikace shlukové analýzy na spotřebitelské chování v jednotlivých zemích Evropy pro léta 1996, 1999 a 2002 jsou v grafickém vyjádření dendrogramy, ze kterých možno usuzovat na největší rozdíly mezi státy severozápadní Evropy a přistupujícími zeměmi, dále pak mezi státy severní Evropy a jihoevropskými zeměmi. Přesto, že ve sledovaném časovém období nastávají změny v chování individuálních zemí, toto základní rozdělení přetrvává. Z tohoto výzkumu sekundárních informací vyplývá, že pro studium faktorů ovlivňujících spotřebitelské chování je třeba provést výzkum primárních informací, získaných z rozsáhlého dotazníkového šetření o motivech chování a spotřeby alespoň hlavních komodit jako jsou 1) nápoje; 2) pekárenské výrobky; 3) maso a masné výrobky; 4) mléko a mléčné výrobky. Pro reprezentativnost šetření byly zohledněny kontrolní znaky jako: pohlaví, sociální skupina, věk, bydliště.

spotřebitel, chování, shluková analýza, EU

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