Behaviour of Fruit and Vegetable Buyers on the City Markets in Croatia

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Abstract:

Better knowledge of the consumer is the presumption for preparing the efficacious selling concept. Our research is limited on the preferences, requests, habits and attitudes of the consumers which are buying fruit and vegetable on the city markets in Croatia.

The main goal of this research is identification and description of the different market segments based on the relevant buying characteristics of the consumers, that is their psychological, geographic and socio-demographic characteristics. The result of this research will be used as basis for the target marketing.

We used mail survey method with structured questionnaire in this research.
The survey was made in June 2000 on the random sample of 1000 buyers on the city markets in Zagreb, Rijeka, Split and Osijek. From 1000 questionnaires 568 were returned, 475 of them were included in research and the rest was discarded because of incomplete answers.

Univariate analyse of questionnaire's indicators shows that 93% of consumers buy fruit and vegetable on the city markets. Almost 60% of the consumers visit just one city market, while 63% of the consumers visit the city markets more times in a week. The average total satisfaction of the consumers with the city markets was 3.8, with the satisfaction scale from 5 (completely satisfied) till 1 (completely unsatisfied). The consumers are mostly satisfied with the fruit and vegetable choice (the average evaluation 3.92), and unsatisfied with the price/quality ratio on the city markets (the average evaluation 3.12).

In the further research by help of the factor and cluster analysis we determined the fruit and vegetable market segments. We found 4 consumer groups which differ between themselves according to the psychological characteristics of the consumers. In order to describe these segments we detected differences between these segments according to the geographic, socio-demographic and buying characteristics of the consumers.

The results of this research give the information's base to the domestic fruit and vegetables producers to define a marketing strategy that is to plan marketing activities in city markets or in any other selling channel.

Key words: Croatia, city markets, fruit and vegetable, consumer segmentation, target marketing

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1. Introduction

Croatian fruit and vegetable market increasingly takes a form of developed markets, mostly because of the increased liberalisation. It is to be expected that the retail trade will develop on a similar way as it does in West European countries. City markets[1], which are still the main selling channel for these products in Croatia, (KOVAČIĆ, et al., 1999) will decline in importance. The competition selling channels, as trade chains will increase their share in total trade of these products.

The expected changes ask a new market approach, that is an appropriate marketing strategy for the domestic fruit and vegetables producers. Psychographic analyse of consumer behaviour is a good base to develop a new marketing strategy (KAISER, 1997; ALTMAN, 1983).

This research is related to the behaviour of the city markets' consumers in Croatia. On the base of the psychografic characteristics, buyers were divided in homogenous market segments and additionally identified by means of social-demographic characteristics, buying behaviour characteristics and satisfaction with purchase on city markets.

The results of this research give the information's base to the domestic fruit and vegetables producers to define a marketing strategy that is to plan marketing activities in city markets or in any other selling channel.

2. Research goal and research questions

The theoretical base of this research begin from the presumption that consumers could be divided into different market segments by means of their psychographic characteristics (variables), that is by means of their attitudes towards different subjects. (VALLI et al., 1999).

The main goal of this research is the identification of different market segments based on relevant psychographic characteristics of consumers and description of this segments by means of their buying (consuming) behaviour, geographic and social-demographic characteristics, in order to get a base for the target marketing.

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[1] City markets are selling channel for a retail sale of agricultural products, formerly used for direct sale of fruit and vegetables. In city markets today usually sell tradesmen, and sale assortment is expanded on meat, milk and diary products, eggs and fishes. From total retail distribution in Croatia 50% of fruit and 60% of vegetables is sold through this selling channel. City markets are usually placed in city centres or in each district in larger cities. These markets are open every day in the morning and early afternoon.

3. Theoretical background

3.1. Market segmentation

"Market segmentation is, according to many authors, one of the fundamental principles of modern marketing" (DIBB & STERN, 1995, p. 625). In literature there are a lot of definitions of market segmentation but most of authors agree that segmentation is the breaking up of a large usually heterogeneous group into smaller market groups that is segments that respond to a particular marketing mix in a similar way. (DIBB et al., 1991; BERNDT, 1996; VALLI et. al., 1999; PERREAULT & MCCARTHY, 1996; DALRYMPLE & PARSONS, 1995).

Consumers' typology by means of market segmentation was seen in literature in two distinct ways. From one side consumers' division in groups is a pure market research scheme (by means of survey) in order to divide consumers in homogenous groups that are used to evaluate demand characteristics. With the help of such data it is possible to examine how good did the firm develop its market strategy in terms of meeting consumers needs. Second aspect of segmentation include market analyse in which market segmentation is seen as a tool that helps in identifying new market niches. (ALTMANN, 1983).

3.2. Consumer behaviour and measuring consumers attitudes

"…understanding consumers is a critical element in developing marketing strategy. There are very few if any strategy decisions that do not involve a consideration of consumer behaviour" (CHEN, KUNAG-JUNG, 1996, p. 6). Consumer behaviour can be represented with different behaviour models. There are economical, sociological and psychographic partial models of consumer behaviour (BERNDT, 1996)

Psychological models explain consumer behaviour starting from the psychological determinants of behaviour. The psychological determinants are considered as unseen variables and they can be divided in active and cognitive processes (BERNDT, 1996). The elements of an active process are motives, emotions and attitudes. A cognitive process includes perceptions, opinions and learning.

In marketing are the most important the attitude theories (AJZEN/FISHBEIN, 1970, KROEBER-RIEL, 1992). "Attitudes are an important topic for marketers because attitudes affect the selective processes, learning and eventually buying decisions people make" (PERREAULT & MCCARTHY, 1996).

It is possible to completely understand the attitude toward some object only if it's possible to measure it (BERNDT, 1996). There are two main possibilities of attitude measuring: one-dimensional and multidimensional measuring (BERNDT, 1996). The one-dimensional attitude approach usually measures the affective component of an attitude that is expressed in form of agreement or disagreement (rating scale) with some statement (TROMMSDORF 1975). The disadvantage of a rating scale is that respondents often give extremely positive or extremely negative answers (BERNDT, 1996). There are more multidimensional methods (models) of attitude measuring such as Image-differential, Fishbein's model, Trommsdorff's model etc. A limit in the

usage of these models is the linear compensation. Positive answers are often annulled by negative answer. (HUGHES, G., D., 1977, taken from ALVENSLEBEN, 1983.).

There are also decomposed, multidimensional models of attitude measuring. Elements for attitude measuring are taken from numerous characteristics of attitude objects (product, selling place, person, etc.) and from consumer (respondent) opinions. By means of factor analyse all these characteristics are reduced to a limited number of dimensions that define particular attitudes (ALTMANN, 1983; WIERENGA 1980, taken from ALVENSLEBEN, 1983; KAISER, 1997). This measuring instrument is called Statementset or Itempool and is used as a base for the market segmentation.

3.3. Literature review

Consumers' attitudes, which are an important element in marketing research, were examined in numerous researches (FEARNE i LAVELLE, 1996; O'MAHONEY et al. 1995; MAGNUSSON et al., 2001; VERBEKE & VIAENE, 1998; DALL'OLMO RILEY et al., 1999).

Market segmentation by means of psychografic variables is already well known in literature. TAM & TAI (1998) used this approach to segment female market in Greater China. ASKEGAARD and MADSEN (1995) identified homogeneous consumer segments with respect to food behaviour and preferences throughout 79 regions in the 12 EU countries and four EFTA countries. (NESS M., 1997). WERNER (1982) used 32 statements about general consumers' attitudes towards apple and 23 statements about attitudes towards ideal apple to segment apple market. (MEULENBERG, M. T. G., 1983) MAHLER (1991) examined consumers that buy directly on farms, and divide them in market segments according to their attitudes about personal and social values as well as their evaluation of Bavarian agriculture.
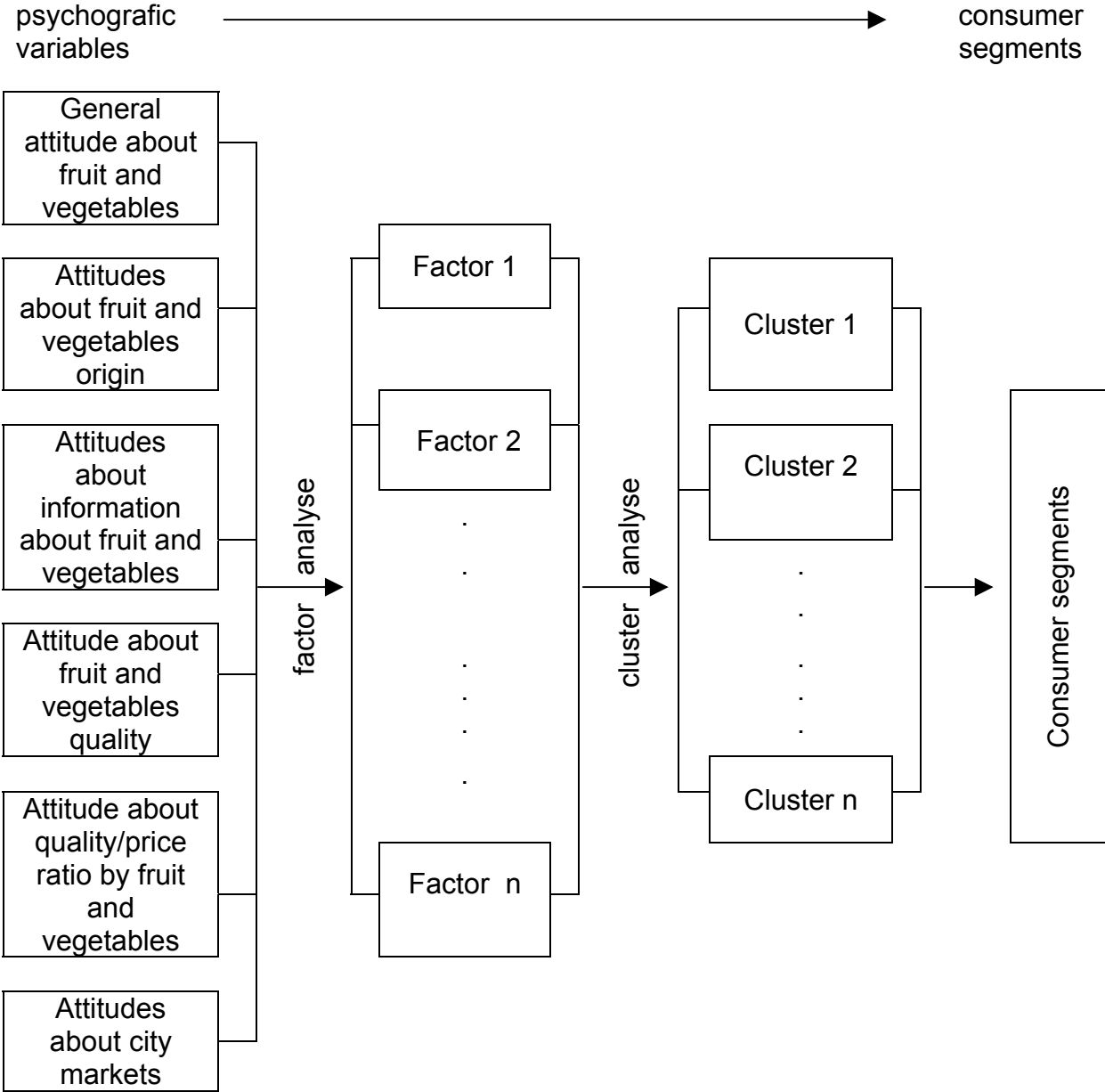

All former researches that were dealing with fruit and vegetable sale at city markets in Croatia had only descriptive character and didn't analyse consumers that buy on such markets (KOLEGA, 2001; KOVAČIĆ, 1995; KOVAČIĆ & MILANOVIĆ 1995; KERO et al., 1991; KERO, 1990; KOLEGA, 1987; KERO, 1984).

4. Theoretical model and research hypotheses

"It is evident that the perception of and attitudes towards food attributes such as tatste, nutritional qualities and convenience are the key determinants of food choice and these attitudes and perceptions are in turn influenced by a number of personal characteristics, such as education, socio-economic status, age and sex." (FEARNE & LAVELL, 1996).

This research starts from the presumption that consumer behaviour could be explained using their attitudes towards city markets and fruit and vegetables that are bought on city markets. Theoretical model of this research is shown at figure 1.

Figure 1: Theoretical model of consumer segmentation

psychografic variables ———————————————————▶ consumer segments

| General attitude about fruit and vegetables |
| Attitudes about fruit and vegetables origin |
| Attitudes about information about fruit and vegetables |
| Attitude about fruit and vegetables quality |
| Attitude about quality/price ratio by fruit and vegetables |
| Attitudes about city markets |

factor analyse

| Factor 1 |
| Factor 2 |
| . . . . . . |
| Factor n |

cluster analyse

| Cluster 1 |
| Cluster 2 |
| . . . . . |
| Cluster n |

Consumer segments

The main hypothesis of this research is that there are significant differences between some consumers' types that buy fruit and vegetable on city markets in terms of their psychographic characteristics. Further, we supposed that these segments are mutually different relating to their buying behaviour, geographics, socio-demographics, and satisfaction with a purchase on city markets. In order to define differences between consumer segments we set following hypotheses:

H1: There are significant differences between the segments relating to the consumer behaviour according to the purchase expenditure, purchase frequency, loyalty to the purchase place, purchase character (impulse or planned), and importance of the product information.

H2: There are significant differences between the segments relating to the socio-demographic characteristics of the consumers: living place, age, sex, education, job, number of family members, family income.

H3: There are significant differences between the segments relating to the importance of specific criteria considered when purchasing fruit and vegetable (e.g. product freshness, product taste, domestic origin, price etc.).

H4: There are significant differences between the segments in reference to the consumers' satisfaction with quality of supply and service at city markets: product quality, product freshness, cost/benefit ratio, product choice, contact with producer/salesman, advice and information about the products, market working time, market cleanness.

5. Methodology and research process

The mail survey was carried out in June 2000, on a sample of 1000. A mail survey is a kind of survey especially suitable for extensive research. Respondents could be more willing to answer on personal or family questions in a mail survey compared with other kind of surveys, since in a mail survey they can stay anonymous. (PERREAULT & MCCARTHY, 1996). The big disadvantage of a mail survey is a small respondent rate and sample representative quality (MARUŠIĆ & VRANEŠEVIĆ, 1997). However, a mail survey is the cheapest survey method and an adequate response rate can provide reliable results (DIBB el al., 1991).

The target population for this research included all Croatian citizens who buy or consume fruit and vegetables bought on city markets in Croatia. This means a population of about 2 millions consumers, according to expert estimates (KOVAČIĆ et al., 2000.)

The research was conducted on the random stratified sample. The questionnaires were distributed to random selected buyers in four Croatian cities. Respondents had to turn back questionnaires by mail after filling them in. Because of a supposed low respondent rate, we distributed 2,5 times more questionnaires (1000) that we wanted to get back (400). From the total number of distributed questionnaires, 57% that is 568 questionnaires were turned back with respondent rates from 54% till 64% in each city.

The questionnaire used in this research was organised into several groups of questions: demographics, buying behaviour characteristics, and the importance of information about fruit and vegetables. Apart from these questions there was another group of questions (Itempool) dealing consumers' attitudes about city markets and fruit and vegetableas (psychographic variables). Itempool was built on the results of a preliminary research that was made on a sample of 70 buyers. The Kaiser-Meyer-Olkin criterion (MSA coefficient >0,5) was used to choose the statements to be taken from the preliminary research. Apart from preliminary research, different researches with similar subjects and methodology were used to complete Itempool. (KAISER, 1997; HENSCHE et al., 1993; SOMMER, 1995; MAHLER, 1991). In two questions, each

with ten statements, respondents had to show their agreement / disagreement with specified statements.

6. Research results

The following section outlines the results of the survey and gives a brief discussion. In first chapter results of factor analyse are discussed. The results of cluster analyse are presented in next chapter. Differences between segments were examined and explained at the end of this section.

The data obtained from the survey were initially analysed with univariate analyse methods in order to check distributions of frequencies and to detect possible errors occurred during the research and/or data entering.

6.1. Factor analyse

The goal of a factor analyse is to summarise the important information contained in the data by fewer number of factors. (CHURCHILL, 1995). From 568 returned questionnaires, 354 were used in factor analyse and other were discarded because of incomplete answers.

The consumers' attitudes about fruit and vegetables supply and services at city markets were used as inputs variable for factor analyse. Barlett-test (test of sphericity) (χ^2 = 976.213 with sig. 0.000) and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0,762) showed good mutual correlation between all 20 variables. Kaiser-Meyer-Olkin-criterion (MSA) was used to determine do all single variables fit for factor analyse. Five variables that had low correlation with other variables were removed (MSA < 0,65).

Principal component method was performed on chosen 15 variables and scree test and eigenvalues greater than one were selected as the criteria for determining number of factors to be extracted. The varimax rotation procedure was also performed to ease the interpretation of each factor.

As a result, five factors that explain 54,93% of total variance were extracted. Despite the rotation first factor remained dominant and it explained 23,3 % of total variance. After a closer examination of the loading on the factors (in the interpretation used loading greater than 0,4) each factor was named as follow:
F1: distrust in modern food production
F2: preferences of city markets as selling place
F3: preferences of fruit and vegetables in diet
F4: dissatisfaction with existing selling channels for fruit and vegetables
F5: importance of information about food.

6.2. Cluster analyse

Factor scores of attitude variables were computed and used to cluster fruit and vegetables consumers. Cluster analyse was conducted in two steps. In the first step Single Linkage (Nearest Neighbour) method was employed to find outliers (cf. BACKHAUSE et al, 1996). Ward method, used in second step, makes very good grouping compared with other algorithms according to Siegfried Bergs (cf. BACKHAUSE et al, 1996). Elbow criterion was applied to determine number of clusters. Four clusters that present four market segments were extracted. F values were computed to examine cluster homogeneity. Discriminate analyse was performed to check whether factors were appropriate for cluster analyse. The result showed that all five factors significantly influence the differences between four clusters. Cluster interpretation was made by means of t values and statements that haven't been used in factor analyse but significantly differ regarding to extracted clusters. Four market segments were named and described as:

a) City markers' fans – prefer city markets as a selling channel for fruit and vegetables. They also visit city markets because they consider them as a place for meeting friends and acquaintances. This market segment count for 31% of sample and represents the biggest segment.

b) Practical buyers – prefer "modern" produced food. A product appearance and an attractive presentation are important for them as well as a product price.

c) Traditional buyers – prefer traditionally produced, domestic fruit and vegetables and have negative attitude towards imported products. Fruit and vegetables are important part of their diet.

d) Indifferent buyers – prefer meat in their diet and fruit and vegetables don't consider as very important They like to visit city markets because at city markets, apart of good fruit and vegetables supply, they can also find good meat supply. This consumers consider city markets as a social place.

6.3. Differences between segments

Research hypotheses were tested in order to describe found segments. Chi square test was performed in order to examine existing differences between the segments according to the nominal variables (e.g. place of living) and ANOVA procedure was used to test differences between the segments according to ratio variables (e.g. expenditure for fruit and vegetables). LSD (Fisher's LSD) test and Games-Howell GH test were performed in order to find which segments differ significantly one from other.

Table 1 summarises the significant differences found between segments according to H1 and H2. Variables that are not presented in the table didn't show statistically significant differences between segments. Graphs 1 and 2 present differences between segments according to the H3 and H4.

City markets' fans are the oldest consumers that spend the highest amount of money for fruit and vegetables. Most of pensioners are in this segment. As for all others consumers, the most important issues for this consumers is freshness of the product. Compared with other consumers, they find more important bio-production, domestic

origin and information about fruit and vegetables. City markets' fans are the most satisfied consumers with supply and services at city markets.

Practical buyers visit city markets less often than other buyers, and they go there usually before 14 o'clock. They don't put so much attention on product characteristics as city market's funs and traditional buyers, but still more than indifferent buyers. Practical buyers are mostly satisfied with choice of fruit and unsatisfied with crowed vegetables on city markets.

About 60% of traditional buyers visit city markets few times in a week. Compared with buyers from other segments traditional buyers visit city markets more often after 14 o'clock, probably because consumers from this segment are more employed than in other segments. Traditional buyers consider quality of fruit and vegetables more important than do other buyers and they are satisfied with quality more than with other characteristics of fruit and vegetables.

Since indifferent buyers don't consider fruit and vegetables so important in their diet, they spend the less money for fruit and vegetables compared with other consumers. Almost half of all examined housewives are in this segment. Freshness and quality are the most important product characteristics for these consumers. Bio-production, domestic origin and information about fruit and vegetable don't consider as so important as other consumers. Indifferent consumers are most satisfied with product choice and quality and less with crowed on city markets.

Table 1: Differences between segments

variable	all sample	city markets' fans	practical buyers	traditional buyers	indifferent buyers
weekly expenditure for fruit and vegetables per person	50,76 kuna	56,19 kuna	48,59 kuna	55,97 kuna	41,50 kuna
% of respondents that visit city markets once a week	45,3 %	40,4 %	59,2 %	38,3 %	46,7 %
% of respondent that visit city markets after 14 hours	6,3 %	3,7 %	2,8 %	12,5 %	6,7 %
average age of respondent	46,1 years	50,2 years	44,9 years	42,4 years	45,2 years
respondent occupation	a* -19 % b - 25 % c - 32 % d - 8 % e - 6 % f -10 %	a - 28 % b - 22 % c - 29 % d - 4 % e - 4 % f - 13 %	a - 19 % b - 28 % c - 28 % d - 14 % e - 4 % f - 7 %	a - 9 % b - 24 % c - 37 % d - 12 % e - 6 % f - 12%	a - 18 % b - 26 % c - 32 % d - 5 % e - 11 % f - 8 %

*a – pensioners   c - office worker   e - housewives
 b – workers   d - free profession   f – other

Figure 1. Differences between segments relating to the importance of the single criteria considered when purchasing fruit and vegetable
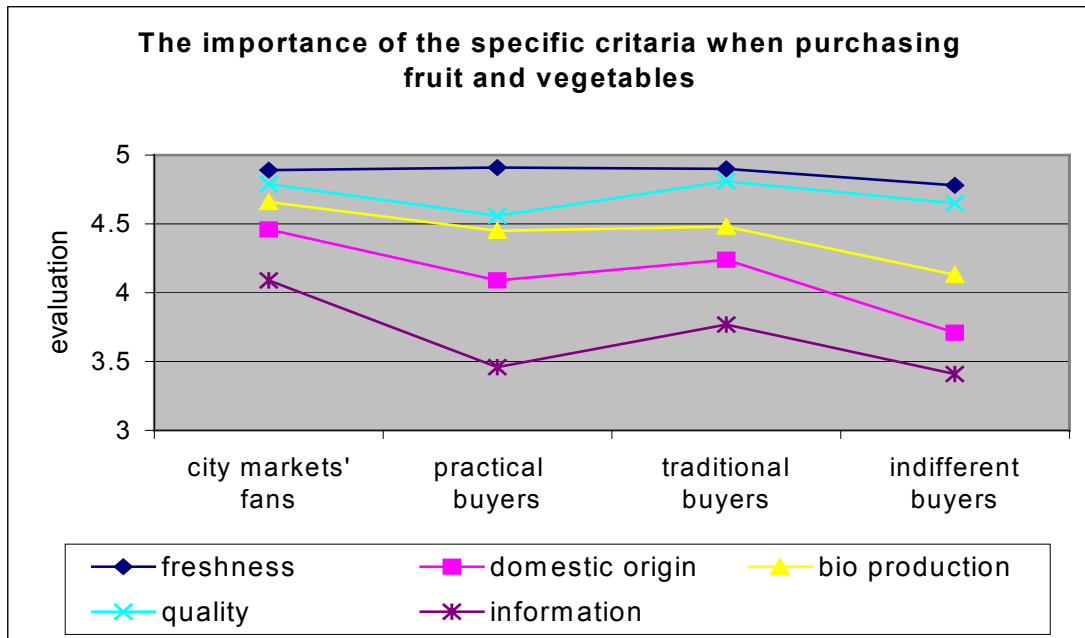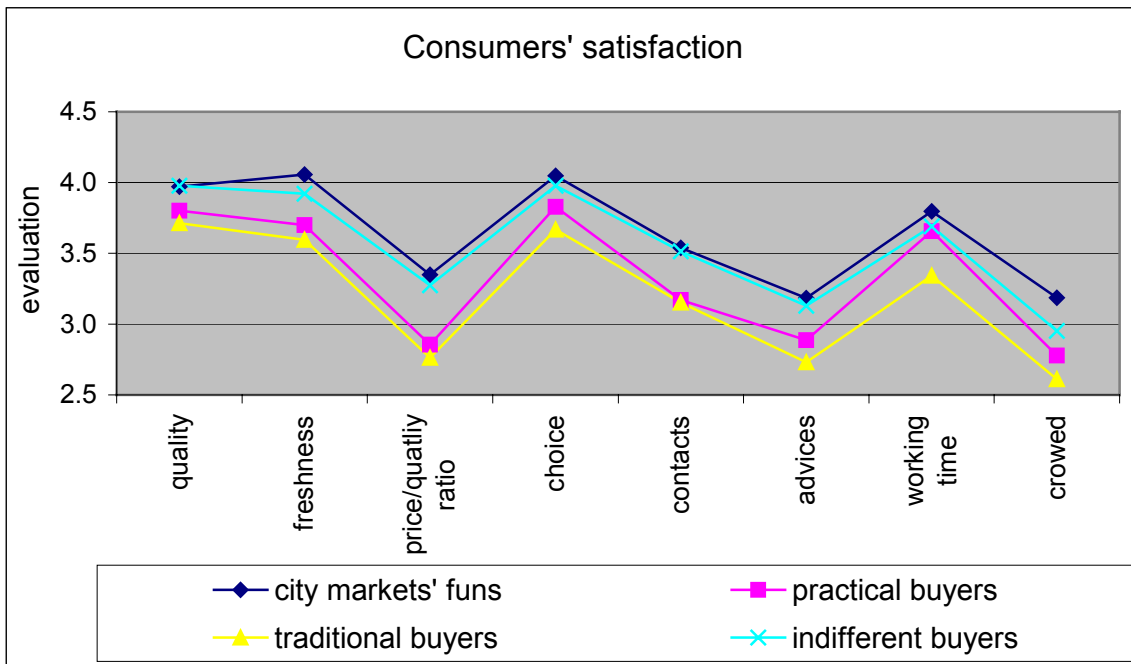

The importance of the specific critaria when purchasing fruit and vegetables

Figure 2. Differences between segments in reference to the consumers' satisfaction with quality of supply and service at city markets

Consumers' satisfaction

7. Conclusions

The analysis of the data collected with the survey made in city markets in Croatia by means of factor and cluster analysis showed that there are four market segments of fruit and vegetables consumers in Croatia.

Consumers from first segment called "City markers' fans, prefer buying fruit and vegetables on city markets and they represent the biggest consumer group. Second segment, called "Practical buyers" give more attention to a product look and presentation, as well as to a price. "Traditional buyers" come to city markets because they can buy in these markets domestic produced fruit and vegetables. The consumers from the last consumer segment "Indifferent buyers" visit city markets because they can find there a good meat supply.

All consumers consider freshness and quality as most important characteristics of fruit and vegetables. Most satisfied with the quality of supply and service at city markets are City markets' fans. They are followed by Indifferent buyers, and less satisfied are Traditional buyers.

The results of the research were used to estimate future development of retail sale of fruit and vegetables in Croatia. It should be considered that these estimates are based on complex relations and relatively insecure indicators. Despite that it's possible to predict the following tendencies:
- the relative importance of city markets in retail sale of fruit and vegetables in Croatia will decrease
- the role of retail selling channels that will offer domestic products and better ratio of price and quality, will increase
- the selling channels with supply of bio products will become more important
- the main criterion for choosing a selling channel that will become more important will be service quality, especially in terms of working time, information about products, and behaviour of salespersons.

The tendencies mentioned above indicate great possibilities for the development of direct sale of fruit and vegetables in Croatia, especially farmers' markets, selling from deliver vehicles, back-door sale and, for some products, self-pick kind of sale. Therefore, farther researches might focus on the implementation of such selling channels in Croatian fruit and vegetables market.

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