**Abstract.** *Attracting financial resources is an important issue for universities. Because for universities is impossible to cover from state budget the whole costs of education, the importance of attracting students has increased. As the pupils' needs and wishes are heterogeneous, in order to better understand the decision making process, universities must divide the educational market in smaller homogeneous segments. Although the segmentation concept and the decision making process of educational choices are widely approached in literature, articles on the pupils' segmentation are very scarce. The present market segmentation was carried out based on the level of importance of various benefits and costs to pupils when they decide whether to enroll in a higher education institution. The considered benefits are the possibility of meeting new people, development of knowledge from high school, getting a bachelor's degree, acquiring knowledge and skills required for employment, development of general culture and the student life. The considered costs are submission fee, tuition fee, time to study, mental effort to learn, long term before graduation and reducing time for hobbies. The method used for segmentation is the K-mean cluster analysis. To assess the internal cohesion of the cluster we determined the average sum of squares error while to determine the differences among the clusters were used ANOVA and post-hoc Tukey tests. The results enable university managers to better understand pupils' needs and to conceive marketing strategies for attracting and recruiting students.*

**Keywords:** educational marketing, segmentation, decision making process, k-mean algorithm, benefits and costs of educational programs.

# SENIOR YEAR HIGH SCHOOL PUPILS' SEGMENTATION BASED ON THE BENEFITS AND COSTS CONSIDERED IN DECISION MAKING PROCESS OF EDUCATIONAL CHOICES

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## 1. Introduction

Education plays a key role in the development and progress of a country. Higher education institutions are important because they are meant to generate, disseminate and transmit knowledge and they are responsible in educating and training the workforce of a nation (Bringula and Basa, 2010). Moreover, the lack of development and progress of a country is the result of an undeveloped education system (Gill and Gill, 2000; Thomas, 1995).

Recent changes such as privatization, decentralization, diversification, internationalization and increased competition affect the institutions of higher education (Nicolescu, 2009; Roşca et al., 2010). They influence the way institutions operate, forcing them to change the attitude towards the adoption of concepts from business (Bârgăoanu et al., 2007).

As institutions of higher education have to build and maintain a good reputation and image, to attract and retain students, to develop appropriate educational programs, to attract resources, to contribute to community welfare, they can no longer avoid the introduction of management and marketing in the current activity (Brătianu and Jianu, 2007; Pop, 2008).

Attracting financial resources is an increasingly important issue for universities because it affects the ability to achieve their mission and objectives (Oprean et. al, 2007). Recruitment of college students started to be also a significant problem for universities as an important part of their budgets as financial burden, have shifted from government to institution and students because is impossible to cover whole costs of education exclusively from the state budget (Frâncu, 2010; Gherghina et al., 2010). Therefore, the importance of being able to attract and enrol high-ability students has increased (DesJardins, 2002).

Nevertheless, many managers of higher education institutions believe that the value of education provided by their institution is obvious and sufficient to attract students but this view is no longer appropriate.

Universities must be target audience-centered organizations because the success will be achieved by institutions that best determine the perceptions, needs and desires of target segments and continuously meet them through the design, pricing, communication and delivery of proper and competitive educational programs (Andreasen and Kotler, 2007).

Therefore, institutions of higher education must carry out market researches to determine the educational needs of the pupils, how they make decisions and the factors taken into consideration.

## 2. Decision making process of educational choices

Every day people have to make choices but most of them are simple decisions. The typical highly complex decisions are those that imply a high level of involvement and in which they are considering undertaking the behavior for the first time. Research

in social psychology shows that high-involvement behaviors do not occur rapidly but take a longer period of time (Andreasen and Kotler, 2007). Choosing higher education programs is highly complex decision-making process because (Kotler and Fox, 1995):

- The decision will reflect upon his or her self-image and will have lasting repercussions.
- The cost to enroll and study requires major personal and financial sacrifices.
- The personal and social risks of choosing wrong are considered as being high.
- The reference groups pressure the pupils to make a particular choice or to act in a particular way, and their motivation to conform is strong.

The main goal of all marketing strategies and tactics of the universities is to influence target audience behavior to achieve the organization goals. The behavior of pupils in the process of choosing a college and an educational program is influenced by internal and external factors (Rice, 1997). The framework adopted by us was proposed by Andreasen and Kotler (2007) and is based on four behavioral drivers: benefits, costs, the influence of reference groups and self-assurance. For a behavior to take place it needs to be met simultaneously three key conditions: motivation, opportunity and ability (MacInnis et al., 199). In case of the undergraduate to get pupils to attend classes there is a law so marketing activities to attract pupils are not necessary. This situation occurs because although the opportunity and ability are high, the motivation of children is very low (Rothschild, 1999). In case of higher education there is no law to make people attend the courses so is important for a pupil to have high motivation and this is the reason why higher education institutions must pay attention to recruitment activities.

Universities develop relationships with students through exchange (Paina and Pop, 1998). The exchange process is important for students because they compare the benefits offered by the educational programs with the costs of studying. The decision to enroll at a university is an investment in human capital and provides various benefits: access to a prestigious occupation, higher earnings, less chances to unemployment, the opportunity to meet people, development of the own knowledge. In case of educational services, people are not facing low costs like small amount of money or little information seeking efforts but high psychological, social, energy and financial costs. Although these costs are very important for pupils, we don't know how they influence the choice of the faculty or even alternative behaviors (Andreasen, 1997). The involved costs are direct (submission fee, tuition fee, books) or indirect (time spent studying or attending courses, forgoing to full time job or hobbies) (Goenner and Pauls, 2006). However the challenge for universities is to create value offerings whit benefits exceeding the costs.

DesJardins (2002) consider that faculty-choice process has three stages. The first stage is represented by formation of predisposition for higher education, which usually goes on from early childhood through high school. The predisposition is induced by family and friends, cognitive abilities and training (Goenner and Pauls,

2006). In second phase the pupils identify, select and apply to a set of faculties. This stage usually takes place in junior and senior year in high school. The pupils use as sources of information faculty websites, college guidebooks, visits to campus, discussions with friends or students and so on (Drule et al., 2011; Menon et al., 2007). The last stage is admission to faculty and matriculation to one or many of them (DesJardins, 2002).

Although potential students are considered as "autonomous choosers" who make decisions on whether to apply for a higher education institution, and which university to choose, some surveys showed that there are students that have no choice (Briggs and Wilson, 2007). Also, student's choice decision-making process is not linear or entirely rational and it is influenced by various factors including the admission procedures (Elliot and Shin, 2002; Wang and Pylarzik, 2007), the tuition fee and other costs (Briggs and Wilson, 2007; Elacqua et al., 2006; Punj and Staelin, 1978), the information available (Menon et al., 2007; Simoes and Soares, 2010), the job opportunities (Moogan and Baron, 2003), the programs and curriculum (Elliot and Shin, 2002; Wang, 2007), the academic reputation (Briggs, 2006), the life and school experience (Moogan and Baron, 2003).

In literature there many stage models for highly complex decisions. Because the decision-making process in case of educational services expands over a long period of time we decided to use the model based on stages of change from social psychology (Levesques et al., 2006). According to this model the change has five stages: precontemplation (the members of target audience are not thinking to higher education programs - usually before 11$^{th}$ grade) contemplation (the pupils are thinking about higher education programs - usually during junior and senior year in high school), preparation (the pupils have decided to apply for an education institution - before admission), action (the pupils are involved in acquiring the behavior) and maintenance (the individuals are attending the courses of the faculty - during their studentship).

The present study is focused on contemplation because is the stage where pupils are thinking to the benefits and costs of applying for higher education. Andreasen and Kotler (2007) further divided contemplation stage in early and late contemplation. In first stage, the pupil just begins to think about enrolling in faculty and ponder the benefits of this decision. In this stage the benefits are extremely important because if pupils find no important benefits, they will quit the process of enrolling unless there are strong pressures from. In second stage, the pupils are actively considering the option and scrutinize the costs of enrolment.

## 3. Methodology

The research was carried out through the survey method, using the interview technique (Malholtra, 2006). The instrument of data gathering was the questionnaire. The survey was carried out among 12$^{th}$ grade pupil. There were applied 1,100

questionnaires but only 1,033 were usable. The pupils were asked to deliver information about the importance of various benefits and costs of educational services.

The questionnaire assessed the perceived importance along the following benefits: possibility of meeting new people (benefit no. 1), development of knowledge from high school (benefit no. 2), getting a bachelor's degree (benefit no. 3), acquiring knowledge and skills required for employment (benefit no. 4), development of general culture (benefit no. 5) and student life (benefit no. 6). Also it assessed the perceived importance of the following costs: submission fee (cost no. 1), tuition fee (cost no. 2), time to study (cost no. 3), mental effort to learn (cost no. 4), long term before graduation (cost no. 5) and reducing time for hobbies (cost no. 6).

To determine the importance of various influence factors in decision-making process, it has been used a five-point scale ranging from (1) "Not important at all" to (5) "Very important".

Pupils were grouped into segments using the SPSS program and the K-Mean Cluster non-hierarchical method. The method requires the following steps (Mooi and Starstedt, 2001):

- The algorithm makes a random choice of the centre of each cluster.
- The Euclidean distance between each element and the centre of the cluster is calculated.
- The geometrical centre of each cluster is calculated.
- The distance between each object and the clusters' central values is calculated, and objects are then split into clusters based on the minimal distance to the clusters' centers. Steps 3 and 4 are repeated until the best solution is obtained.

This algorithm segments the population so that the variation inside the clusters falls down to a minimum. Before running this analysis, it is necessary to establish the number of segments the population will be divided.

## 4. Results

The present analysis aims the grouping of pupils into various groups based on the importance given to several benefits and costs when enrolling in an institution of higher education.

The segmentation criteria need to fulfill the following conditions (Paina and Pop, 1998; Dibb 1999; Kotler and Keller 2006; Tonks 2009):

- Segments will be measurable so that the size and other characteristics can be quantified and determined.
- Segments will be substantial so that they justify the creation of special marketing programs.
- Segments are homogenous, each being distinct in terms of students' profiles and needs.

- Segments are accessible and distinctive so they can be differently approached marketing-wise.
- Segments enable action, namely they allow the development of efficient programs to attract and serve pupils.
- Market segments are stable; they preserve their characteristics for a longer period;
- Market segments are compatible with the organization's mission, culture and structure, with the marketing strategy, with the existing resources.

The factors will be displayed in the order of their contribution to the separation of population into groups (Table 1): the importance of submission fee, the importance of mental effort to learn, the importance of tuition fee, the importance of time to study, the importance of getting a bachelor's degree, the importance of the student life, the importance of development of knowledge from high school and so on.

*Table 1*

**ANOVA Analysis**

| | Cluster | | Error | | | |
|---|---|---|---|---|---|---|
| | Mean Square | df | Mean Square | df | F | Sig. |
| Zscore: Importance of Benefit no. 1 | 51.733 | 5 | .743 | 1027 | 69.589 | .000 |
| Zscore: Importance of Benefit no. 2 | 63.189 | 5 | .697 | 1027 | 90.610 | .000 |
| Zscore: Importance of Benefit no. 3 | 43.643 | 5 | .763 | 1027 | 57.234 | .000 |
| Zscore: Importance of Benefit no. 4 | 80.824 | 5 | .563 | 1027 | 143.448 | .000 |
| Zscore: Importance of Benefit no. 5 | 52.142 | 5 | .731 | 1027 | 71.324 | .000 |
| Zscore: Importance of Benefit no. 6 | 64.965 | 5 | .680 | 1027 | 95.497 | .000 |
| Zscore: Importance of Cost no. 1 | 99.881 | 5 | .512 | 1027 | 195.175 | .000 |
| Zscore: Importance of Cost no. 2 | 94.422 | 5 | .545 | 1027 | 173.243 | .000 |
| Zscore: Importance of Cost no. 3 | 86.391 | 5 | .581 | 1027 | 148.726 | .000 |
| Zscore: Importance of Cost no. 4 | 96.744 | 5 | .538 | 1027 | 179.885 | .000 |
| Zscore: Importance of Cost no. 5 | 54.109 | 5 | .740 | 1027 | 73.164 | .000 |
| Zscore: Importance of Cost no. 6 | 47.795 | 5 | .770 | 1027 | 62.045 | .000 |

The data were standardized. The central values of the final clusters are shown in the following table (Table 2).

To examine and assess the solution of the segmentation analysis we need to consider the followings: the number of segments and the size of each segment, the clusters' cohesion and the differences among clusters (Tsiptsis and Chorianopoulos, 2009).

*Table 2*

**Central values of final clusters**

| | Cluster | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Zscore: Importance of Benefit no. 1 | .09262 | .31362 | .06330 | -.37062 | -.88606 | .53702 |
| Zscore: Importance of Benefit no. 2 | .14177 | -.43802 | .68216 | -.84690 | -.63614 | .44965 |
| Zscore: Importance of Benefit no. 3 | .09010 | .10239 | .37973 | -1.18567 | -.43693 | .35278 |
| Zscore: Importance of Benefit no. 4 | .09318 | .13054 | .32663 | -2.07829 | .20735 | .22110 |
| Zscore: Importance of Benefit no. 5 | .21139 | -.23173 | .52070 | -1.13094 | -.46247 | .41229 |
| Zscore: Importance of Benefit no. 6 | .31025 | .72400 | -.16779 | -.49585 | -.88899 | .44552 |
| Zscore: Importance of Cost no. 1 | -.36773 | -.89974 | -.48127 | -.33168 | .17733 | 1.10667 |
| Zscore: Importance of Cost no. 2 | -.38660 | -.86992 | -.46160 | -.27955 | .17648 | 1.07761 |
| Zscore: Importance of Cost no. 3 | -1.32439 | .05978 | .40994 | -.70973 | .23950 | .52714 |
| Zscore: Importance of Cost no. 4 | -1.44848 | .25588 | .46762 | -.65115 | .15645 | .49617 |
| Zscore: Importance of Cost no. 5 | -1.03162 | .23353 | .07228 | -.26328 | -.07172 | .59682 |
| Zscore: Importance of Cost no. 6 | -.62437 | .75714 | -.36759 | -.22154 | -.13703 | .50281 |

The results of the analysis (internal homogeneity of the groups and the distance among groups) and the consideration of practical aspects (the size of the segments can be substantial) made us come to the conclusion that the population can be split into six segments, as seen in the Table 3. As one can observe there is no dominant segment that would require an additional segmentation analysis of the population. Also, there is no segment too small that would imply a separate analysis.

*Table 3*

**Structure of the population per clusters**

| Cluster | Number of cases in each cluster | Share in the overall number of people |
|---|---|---|
| 1 | 157 | 15.20% |
| 2 | 140 | 13.55% |
| 3 | 202 | 19.55% |
| 4 | 83 | 8.04% |
| 5 | 204 | 19.75% |
| 6 | 247 | 23.91% |

A quality segmentation of the population requires a high concentration of the elements of the cluster around the centroids of the clusters. To assess the quality of the clusters' cohesion we analyzed for each cluster the maximal (Euclidean) distance to the central values and we got smaller values. Moreover, to determine the distance among the members of each cluster and the cluster's central value, we calculated the Average sum of squares error indicator based on formula:

$$AverageSSE = \frac{1}{N}\sum_{i\in C}\sum_{x\in Ci} dist(c_i, x)^2$$ (Tsiptsis and Chorianopoulos, 2009), where *C* stands for the total number of clusters, *ci* stands for the centre of the *i* cluster, *x* is the value for a member of the *i* cluster. The obtained value is 1.22, an indicator of high cohesion.

The distances among the central values of the final segments are great and they do not require a reduction in the number of segments and the union of resulted groups. The smallest distance is in the case of clusters three and five, and the greatest lies between clusters four and six (Table 4).

*Table 4*

**Distances between Final Cluster Centers**

| Cluster | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | 3.098 | | | | | |
| 3 | 2.956 | 2.143 | | | | |
| 4 | 3.430 | 3.572 | 4.036 | | | |
| 5 | 3.247 | 2.760 | 2.418 | 2.960 | | |
| 6 | 3.986 | 3.113 | 2.572 | 4.631 | 3.017 | |

To determine the differences among clusters we used the ANOVA test, which indicated significant differences (at a signification level of 0.000) among groups for each variable taken into account.

*Cluster 1* - This cluster consists of 157 people and includes pupils for which all six costs considered are unimportant (Table 5). Instead, for them the professional benefits are important or very important: acquiring skills and knowledge required for employment (4.68) and getting a bachelor's degree (4.61).

*Table 5*

**The benefits and costs importance scores for cluster 1**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 3.27 | 3 | 0.99 |
| Importance of Development of knowledge from high school | 3.79 | 4 | 1.00 |
| Importance of Getting a bachelor's degree | 4.61 | 5 | 0.57 |
| Importance of Acquiring skills required for employment | 4.68 | 5 | 0.52 |
| Importance of Development of general culture | 4.24 | 5 | 0.83 |
| Importance of Student life | 3.82 | 5 | 1.03 |
| Importance of Submission fee | 2.33 | 2 | 1.02 |
| Importance of Tuition fee | 2.37 | 2 | 1.08 |
| Importance of Time to study | 1.93 | 2 | 0.84 |
| Importance of Mental effort to learn | 1.89 | 2 | 0.73 |
| Importance of Long term before graduation | 2.03 | 2 | 0.84 |
| Importance of Reducing time for hobbies | 2.55 | 2 | 1.17 |

Compared to the average values for the sample, the mean for the importance of time to study is 43.38% smaller, the mean for the importance of mental effort to learn is 45.84% smaller, and the mean for the importance of long period before graduation is 36.71% smaller (Figure 1).

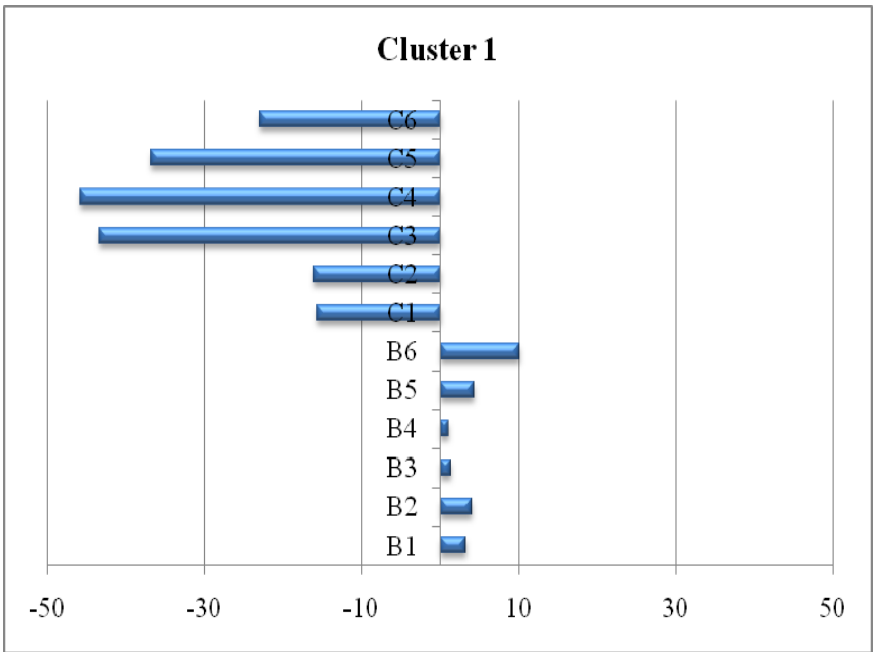



*Figure 1*. **Deviation in percent from the average values of the population in cluster 1**

*Cluster 2* - The cluster is composed of 140 persons for whom the financial costs determined by enrolling and studying in a college are unimportant: the score for registration fee is 1.71 and for tuition fee is 1.81. In fact, these costs recorded for this cluster the lowest values. For them are important the costs of reducing time for hobbies (4.21) and of mental effort to learn (3.77). In case of benefits, besides the ones related to employment, the most important are benefits of the student life (Table 6).

*Table 6*

**The benefits and costs importance scores for cluster 2**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 3.49 | 3 | 0.86 |
| Importance of Development of knowledge from high school | 3.15 | 3 | 1.06 |
| Importance of Getting a bachelor's degree | 4.61 | 5 | 0.62 |
| Importance of acquiring skills required for employment | 4.71 | 5 | 0.49 |
| Importance of Development of general culture | 3.84 | 4 | 0.84 |
| Importance of Student life | 4.29 | 5 | 0.80 |

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Submission fee | 1.71 | 2 | 0.66 |
| Importance of Tuition fee | 1.81 | 2 | 0.74 |
| Importance of Time to study | 3.47 | 3 | 0.85 |
| Importance of Mental effort to learn | 3.77 | 4 | 0.83 |
| Importance of Long term before graduation | 3.47 | 3 | 1.03 |
| Importance of Reducing time for hobbies | 4.21 | 5 | 0.88 |

These pupils are more sensitive to costs that affect their social life or involve effort. Compared to the average values for the sample, the importance of reducing time for hobbies is 26.93% higher and the importance of mental effort to learn is 7.98% higher. For these pupils, in addition to professional benefits (the average scores are about the same as for the sample) there are also important social benefits: the average score of importance of student life is 23.67% higher, and the scores for the possibility of meeting new people is 10.34% higher. On the contrary, the average importance of the development of knowledge from high school is 13.55% lower, and the mean importance of the development of general culture is 5.57% lower than sample's scores (Figure 2).

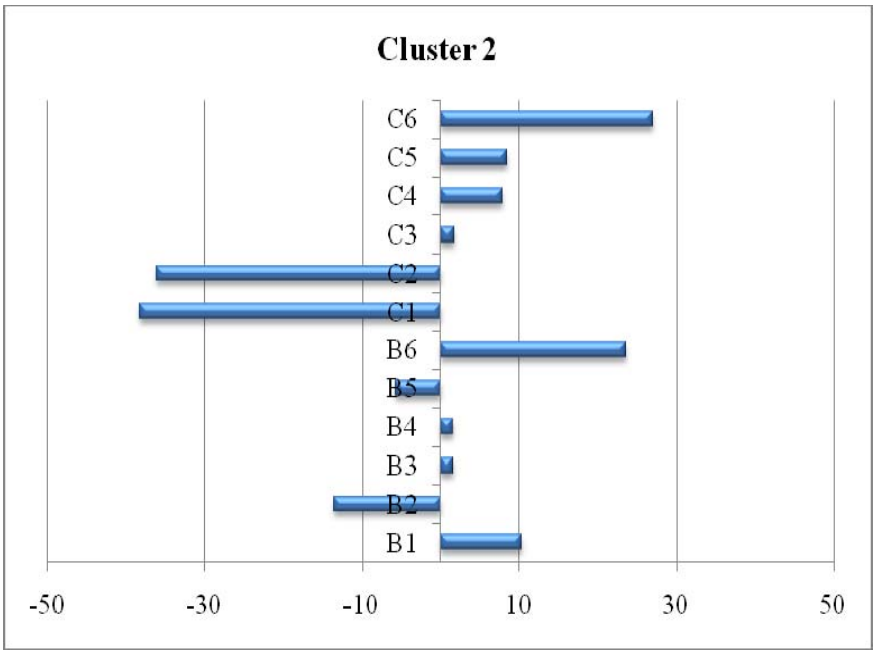



*Figure 2*. **Deviation in percent from the average values of the population in cluster 2**

*Cluster 3* – This cluster consist of 202 persons for which financial costs determined by enrolling and studying in a college are unimportant: the mean importance for submission fee is 2.20 and for tuition fee is 2.28 (see Table 7). They

consider important the costs determined by mental effort to study (4.00) and the costs of spending time learning (3.86). In addition to benefits related to career, for them is important to continue the development of knowledge from high school (4.39) and of the general culture (4.51).

*Table 7*

**The benefits and costs importance scores for cluster 3**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 3.24 | 3 | 0.90 |
| Importance of Development of knowledge from high school | 4.39 | 5 | 0.68 |
| Importance of Getting a bachelor's degree | 4.82 | 5 | 0.40 |
| Importance of Acquiring skills required for employment | 4.84 | 5 | 0.39 |
| Importance of Development of general culture | 4.51 | 5 | 0.59 |
| Importance of Student life | 3.28 | 3 | 0.94 |
| Importance of Submission fee | 2.20 | 2 | 0.75 |
| Importance of Tuition fee | 2.28 | 2 | 0.71 |
| Importance of Time to study | 3.86 | 4 | 0.86 |
| Importance of Mental effort to learn | 4.00 | 4 | 0.76 |
| Importance of Long term before graduation | 3.29 | 3 | 1.06 |
| Importance of Reducing time for hobbies | 2.86 | 3 | 1.04 |

Compared to the whole sample pupils in this cluster are more sensitive to costs that require to make: the importance mean of mental effort to study is 14.67% higher, and average value of the importance of time needed to study is 13.29% higher. Instead, for them is not that important the reduction of time for hobbies (13.67% lower than the population average). Compared to the average values for the sample, the financial costs are less significant.

Besides getting a bachelor's degree and acquiring skills required for employment, compared to the sample, for them are important mental benefits: the average value for the importance of continuing the training started in high school is 20.37% higher (the highest positive deviation for this benefit), and the importance mean of developing general culture is 11.15% higher (the highest positive deviation for this benefit). The student life is considered less important: in case of cluster 3 this is the only benefit, which scores a lower value than the average values of the population (Figure 3).

*Cluster 4* – The cluster consist of 83 people for whom the costs are either unimportant or have a medium importance. The lowest values are recorded for the financial costs and the highest are for long period until graduation (2.90) and reducing time for hobbies (3.04). Regarding the benefits, the most important category is represented by getting a bachelor's diploma. The other benefits are unimportant or medium important. The lowest scores are for social benefits and for development of the knowledge acquired during high school (see Table 8).

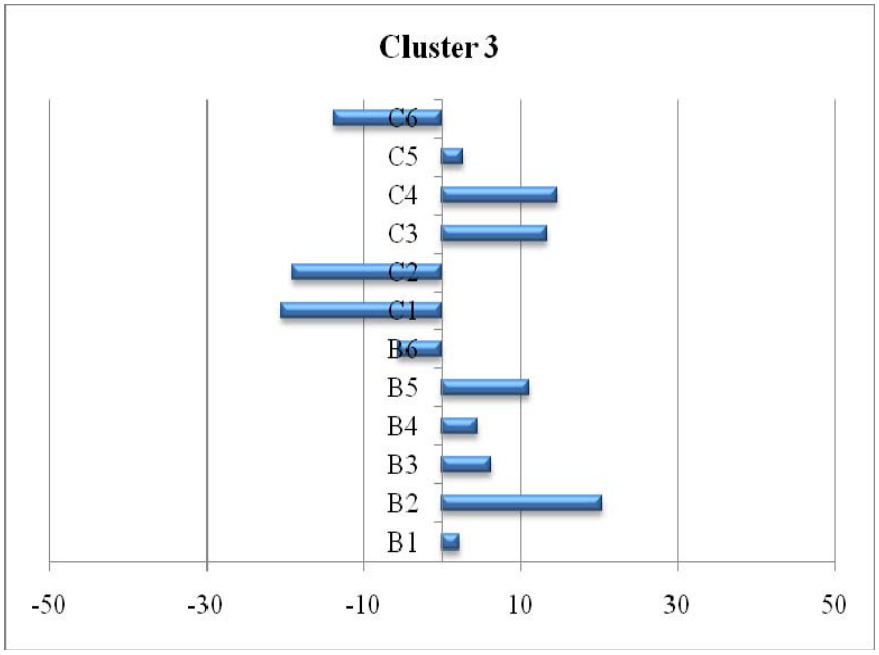



*Figure 3*. **Deviation in percent from the average values of the population in cluster 3**

*Table 8*

**The benefits and costs importance scores for cluster 4**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 2.80 | 3 | 1.02 |
| Importance of Development of knowledge from high school | 2.70 | 3 | 0.96 |
| Importance of Getting a bachelor's degree | 3.65 | 4 | 1.12 |
| Importance of Acquiring skills required for employment | 3.19 | 3 | 0.82 |
| Importance of Development of general culture | 3.02 | 3 | 0.95 |
| Importance of Student life | 2.90 | 2 | 1.14 |
| Importance of Submission fee | 2.37 | 2 | 1.00 |
| Importance of Tuition fee | 2.49 | 2 | 1.03 |
| Importance of Time to study | 2.61 | 3 | 0.87 |
| Importance of Mental effort to learn | 2.77 | 3 | 0.90 |
| Importance of Long term before graduation | 2.90 | 3 | 1.07 |
| Importance of Reducing time for hobbies | 3.04 | 3 | 1.23 |

These pupils are the only ones that have lower scores than the sample for all categories of benefits and costs considered. For them to continue same training as in high school is the least important probably because of negative former educational experiences or because they didn't liked the subjects studied. Acquiring skills and knowledge required for employment are just medium important (3.19). They are

interested just to get a bachelor's degree although the score in case of this benefit is just 3.65. Probably, this category of pupils are the most difficult to enroll and keep attending the courses of a faculty as they are interested to get a diploma and they are sensible to costs like reducing time for hobbies and long term before graduation.

Just in the case of this cluster the score of the benefit acquiring skills and knowledge required for employment is lower than the sample score (Figure 4).

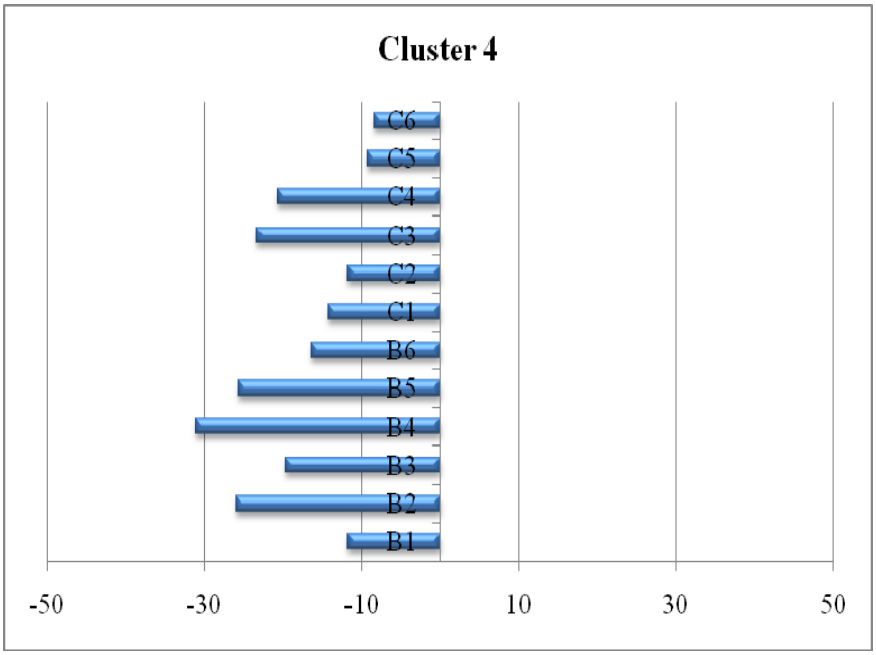



*Figure 4*. **Deviation in Percent from the average values of the population in cluster 4**

*Cluster 5* - This cluster consist of 204 people for whom the costs considered are medium important. The most important costs are the ones related to mental effort to learn (3.66) and time to study (3.67). The financial costs are considered the least important. Related to benefits, the most important category is the acquisition of knowledge and skills necessary for employment. The least important benefit is the possibility of meeting new people (2.27). Also the student life is unimportant (2.46). In case of these benefits, the cluster recorded the lowest importance scores (Table 9).

Compared to the average values for the sample, it appears that these students are more sensitive to financial costs and to the costs requiring their efforts but the values are not much higher than the sample. In contrast, the importance of reducing time for hobbies and long term before graduation is lower than the sample scores.

*Table 9*

**The benefits and costs importance scores for cluster 5**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 2.27 | 2 | 0.75 |
| Importance of Development of knowledge from high school | 2.93 | 3 | 1.03 |
| Importance of Getting a bachelor's degree | 4.21 | 5 | 0.86 |
| Importance of Acquiring skills required for employment | 4.76 | 5 | 0.45 |
| Importance of Development of general culture | 3.63 | 4 | 0.85 |
| Importance of Student life | 2.46 | 3 | 0.90 |
| Importance of Submission fee | 2.97 | 3 | 0.94 |
| Importance of Tuition fee | 3.02 | 3 | 0.96 |
| Importance of Time to study | 3.67 | 4 | 0.83 |
| Importance of Mental effort to learn | 3.66 | 4 | 0.89 |
| Importance of Long term before graduation | 3.12 | 3 | 1.06 |
| Importance of Reducing time for hobbies | 3.14 | 3 | 1.11 |

The only benefit which have the average value of importance higher than the sample is the preoccupation to obtain knowledge and skills needed for employment. Compared to the sample other benefits are less important: the importance mean of student life is 28.29% lower, the importance mean of meeting of new people is 28.30% lower, and the importance mean of development of knowledge from high school is 19.55% lower (Figure 5).

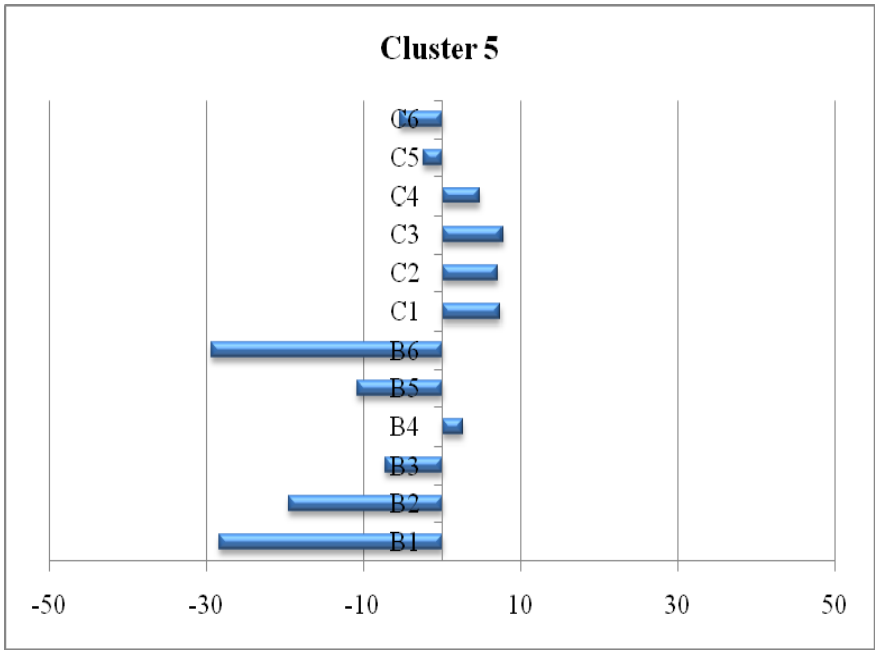



*Figure 5*. **Deviation in Percent from the average values of the population in cluster 5**

*Cluster 6* – This cluster consist of 247 people. For pupils in this segment the most important costs are the financial ones: mean for submission fee is 4.06 and for tuition fee is 4.07. Also, all the other four categories of costs are seen as important. The most important benefits are the ones related to employment (getting a bachelor's degree and acquiring skills and knowledge required for employment). They are followed by development of general culture and opportunity to develop knowledge acquired in high school (Table 10).

*Table 10*

**The benefits and costs importance scores for cluster 6**

| | Mean | Modal | Std. dev |
|---|---|---|---|
| Importance of Possibility of meeting new people | 3.72 | 4 | 0.85 |
| Importance of Development of knowledge from high school | 4.13 | 4 | 0.84 |
| Importance of Getting a bachelor's degree | 4.80 | 5 | 0.45 |
| Importance of Acquiring skills required for employment | 4.77 | 5 | 0.53 |
| Importance of Development of general culture | 4.42 | 5 | 0.69 |
| Importance of Student life | 3.98 | 4 | 0.91 |
| Importance of Submission fee | 4.06 | 4 | 0.73 |
| Importance of Tuition fee | 4.07 | 4 | 0.71 |
| Importance of Time to study | 3.99 | 4 | 0.85 |
| Importance of Mental effort to learn | 4.04 | 4 | 0.79 |
| Importance of Long term before graduation | 3.89 | 4 | 0.87 |
| Importance of Reducing time for hobbies | 3.90 | 4 | 0.95 |

For all costs the average values of importance is higher than the values recorded by the whole sample.

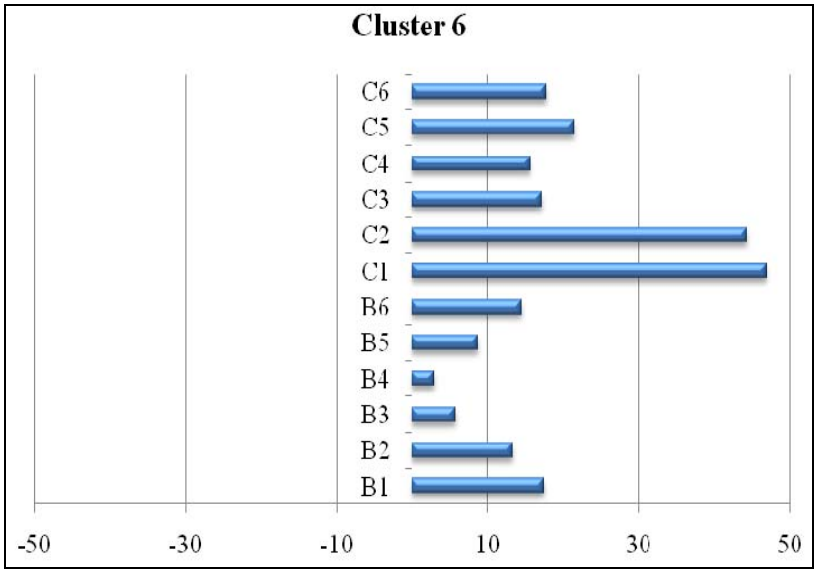



*Figure 6*. **Deviation in percent from the average values of the population in cluster 6**

Compared with all other clusters, these students are the most sensitive to financial costs, the average value of the importance is 46.96% higher for the submission fee and 44.28% higher for tuition fee. For all categories of benefits considered, the importance mean is higher than the average value for the sample (Figure 6).

## Conclusions

Segmentation of potential students is extremely important because their needs, desires and characteristics are different. Higher education institutions can efficiently address pupils with appropriate marketing programs only if their managers know which are the important costs and benefits of the educational programs.

The study revealed the following segments:

- *Insensible pupils* are pupils from cluster 1. Compared to the average values of the sample they are not so sensible to costs.
- *Party people* are pupils from cluster 2. Compared to the average values of the sample for them are important the costs related to their free time and the benefits related to the meeting new people and the student life.
- *Curious pupils* are pupils from cluster 3. Compared to the average values of the sample they are sensible to costs related to study. For them are important benefits related to the development of knowledge acquired in high school and of general culture.
- *Disinterested pupils* are pupils from cluster 4. Compared to the average values of the sample for them both costs and benefits are less important.
- *Rational pupils* are pupils from cluster 5. Compared to the average values of the sample they are sensible to financial, time and mental costs. They are interested to acquire skills required for employment.
- *Sensible pupils* are pupils from cluster 6. Compared to the average values of the sample for them both costs and benefits are important or very important. For them the financial costs of study are the most important.

Although in case of all clusters obtaining a diploma and acquiring the skills required for employment are significant, designing communication programs must take into account the large differences existing in importance in case of other costs and benefits of the educational programs.

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