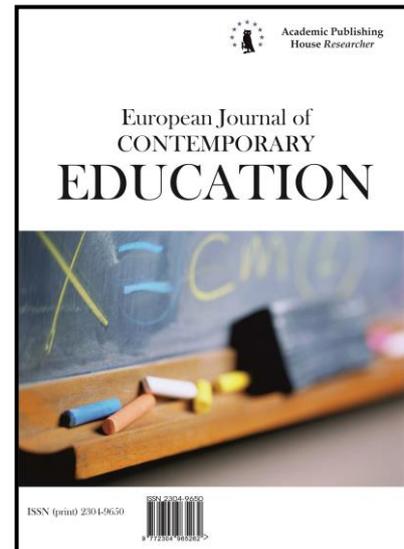




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## Analysis of Sport Motivation Factors amongst Eastern European Higher Education Students

Veronika Fenyves <sup>a</sup>, Krisztina Dajnoki <sup>b,\*</sup>, Dóra Kerezsi <sup>a</sup>, Éva Bácsné Bába <sup>c</sup>

<sup>a</sup> Institute of Accounting and Finance, Faculty of Economics and Business, University of Debrecen, Hungary

<sup>b</sup> Institute of Management and Organization Sciences, Faculty of Economics and Business, University of Debrecen, Hungary

<sup>c</sup> Institute of Rural Development, Tourism and Sports Management, Faculty of Economics and Business, University of Debrecen, Hungary

### Abstract

The annually organized Campus Festival in Debrecen is one of the musical summer festivals in Hungary, which attract masses of people and consider higher education students as their primary target community. Besides musical events, organizers of the Campus Festival put a special emphasis on the promotion of the sports life of the visiting audience. The Campus Sports Festival is organized every year; it aims to popularize sports and sporting activities and to create a social event where students, fans and athletes of Hungarian and foreign (Romanian, Slovakian and Ukrainian) higher education institutions are able to establish relationships with each other. The aim of a questionnaire survey prepared in 2017 was to carry out an assessment of needs, in the scope of which the opinion and demand of higher education students related to sports festivals and leisure sports is surveyed. Present study introduces the sporting habits of higher education students and their motivations related to sports and the sports festival. The analysis was carried out by means of the SPSS software package, while the differences among the countries were studied using Pearson's Chi-square test and the Mann-Whitney test and Categorical Principal Component Analysis. It was established that higher education students belonging to the sample prefer active entertainment and one of their favourite leisure activities is doing sports and that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. It was also found

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\* Corresponding author

E-mail addresses: [dajnoki.krisztina@econ.unideb.hu](mailto:dajnoki.krisztina@econ.unideb.hu) (K. Dajnoki),  
[fenyves.veronika@econ.unideb.hu](mailto:fenyves.veronika@econ.unideb.hu) (V. Fenyves), [kerezsi.dora@econ.unideb.hu](mailto:kerezsi.dora@econ.unideb.hu) (D. Kerezsi),  
[bacsne.baba.eva@econ.unideb.hu](mailto:bacsne.baba.eva@econ.unideb.hu) (É.B. Bácsné)

that for higher education students, health is a more important motivational factor – in relation with sports – than physical appearance.

**Keywords:** sport festivals, leisure sport, sporting, university.

## **1. Introduction**

In Hungary, three to six thousand festivals are organized each year, since in the 21<sup>st</sup> century these cultural events seem to be the most marketable from amongst cultural products. This is confirmed by the fact that annually, these festivals host five to six million visitors (Benedek, Stark, 2007). One of the festival types is represented by summer music festivals that attract great masses of people. Due to their nature, these events primarily seek to meet the needs of younger generations. Higher education students constitute a special segment of this age group. Only two of the Hungarian popular music festivals focus on higher education students as target audiences (Bácsné, 2014a). One of these two festivals is the Campus Festival, which has been organized in Debrecen since 2008 and the significant proportion of its visitor base is represented by the students of higher education institutions. The Campus Sports Festival is arranged as an accompanying event of the Campus Festival, organized by the University of Debrecen. The Campus Sport Festival has been an annual event since 2008 for students of higher education institutions in Hungary and abroad. The aim of the Campus Sport Festival is to promote sports and sporting activities, to create a social event where students, fans and athletes of Hungarian and foreign cross-border higher education institutions are able to establish connections among each other. Participation is allowed for students – representing higher education institutions – who are currently completing a course of at least four semesters or a school system course; and also students who obtained their final degree in a designated higher education institution in the year before the competition. The Sport Festival is an accompanying event of the Campus Festival, which combines sports and entertainment. In the first two years, it was organized with the participation of Hungarian higher education students, then in 2010 with the support of a HURO (Hungary-Romania Cross-Border Cooperation Programme) project 500 cross-border higher education students were able to enter the competition. In 2010, students of higher education institutions located in Satu Mare (Szatmárnémeti), Oradea (Nagyvárad), Timișoara (Temesvár) and Arad visited Debrecen and were able to compete in eightsports (tennis, relay race, women's basketball, football tennis, football, men's basketball, table tennis, beach volleyball) at the event which mobilized nearly 1200 people. Since the 2010 competition, there have been cross-border participants at the event every year. Over the years, institutions from Cluj-Napoca, Timișoara, Oradea, Odorheiu Secuiesc and Sfântu Gheorghe have represented Romania, while Ukraine was represented by Berehovo and Slovakia by institutions from Komárom. The event is also popular amongst Hungarian higher education institutions. Approximately 1000 higher education students attend the Campus Sports Festival each year from nearly twenty Hungarian universities and ten cross-border institutions. In 2017, organizers of the event decided it was time to come up with a needs assessment questionnaire to survey the opinions and demands of higher education students in relation to sports festivals and leisure sports. The present study deals with the questions related to the sporting habits of higher education students participating in the sample, broken down by gender. Analysis based on age is not relevant in the case of the utilized sample, because the respondents who completed the questionnaire were mostly full-time higher education students, at the age of 18-26 years. In the case of each factor (evaluation of the sports festival initiative, reasons for the importance of the sports festival, reason for neglecting sports activities, sport and event motivation), we examined the significant differences between countries and the principal component structure of sport motivation factors by means of Categorical Principal Component Analysis.

## **2. Literature Review**

### **2.1. The role of festivals in the life of young people**

The beginning of a new era for Hungarian youth took place in the 90s; the same period in the developed Western countries began in the late 50s and early 60s and ended in the 1980s. The new era was characterized by educational expansion, a wider group of young people entering secondary and higher education in increasing numbers. During the two decades of educational expansion, youth life span has become considerably longer, young people started becoming independent earlier, at the beginning of their teenage years and they have become consumers. However, they

became real adults (started working and founded a family) later. With the extension of training time, a school-based youth life stage begins, which is relatively relieved of forced money-earning activities, and which opens a wide space for personal time and personal activities (Gábor, 2015).

Together with the extended education of young people, the controlling role of family and school, and adult society in general has decreased, while media and consumer industry gained an increasingly influential position. This change led to the emergence of “festival youth”. The development of “festival youth” was accompanied by a differentiated consumer status and complete change of the communication status. This is connected with the widening age composition and the changing lifestyle of young people (Gábor, 2015).

Festival-like events became popular all over the world to meet the cultural needs of young people. Although, festivals used to be explicitly artistic events in the past, they have become a synonym of an event that particularly reflects the taste of the consumer world and offers an intensive experience and relaxed recreation (Benedek, Stark, 2007). In Hungary – though with some delay – festivals appeared and became the centre of focus for the entertainment-aimed interests of young people, proving that the young consumer base defined as “festival youth” has emerged in Hungary as well, which has a determinant characteristic: longer learning and higher education life stage (Bácsné, 2014a). In his study, (Black, 2016) examined festivals from the aspect of social sustainability and found, that smaller-scale festivals realised outside county capitals might contribute to social sustainability.

In Hungary, there have been attempts to organize festivals since the 1960s, but they were unsuccessful. The best-known Hungarian festival is organized every year in August in Budapest; it is called the “SZIGET Festival”. Among youth festivals, EFOTT definitely deserves to be mentioned. The National Touristic Meeting of University and College Students (Hungarian abbreviation: EFOTT) was organized in 1976 for the first time. Campus Festival and EFOTT consider higher education students their primary target audience, but while EFOTT draws from a national base, the Campus Festival focuses primarily on students within the region, especially the students of Debrecen (Bácsné, 2014b). Besides musical features, the organizers of both festivals put great emphasis on boosting the touristic, cultural and sport life of visitors. According to researchers, sports tourism is the most dynamically developing area of tourism (Dobay et al., 2016; Gibson, 2010).

Sport and Tourism are not just about the management and operations of mega events; they also concern offering the consumer specific Sport and Tourism related services and experiences. The subject is clearly big enough to warrant serious consideration from industry, whilst at the same time, specific enough to sustain academic interest and development (Gammon et al., 2003). According to (Hallmann et al., 2012), sports tourism markets are very diversified and the motivation for sport tourism is multilateral. Campus Sports Festival, which is the basis of this present study, is the best example of sports tourism. Participants from different parts of Hungary and even beyond, from Romania, Ukraine and Slovakia come to the event and besides sports they have fun, build and nurse relationships and last but not least, they also discover new areas and landscapes. Travel – due to the change of environment – has an important physiological effect on the human body; therefore, the consumption of various tourism products (health, activity, sports) may strengthen this effect (Savella 2014). In the course of the design of recreational sports programmes the new needs and requirements and modified taste of younger generations as well as the changed location- and equipment-related requirements of the new demands must be taken into account (Pfau, 2016). According to a survey about three large sports events, conducted in 2010 in the United Kingdom with the involvement of 16-year-old and older participants, approximately two-thirds of respondents stated that their experience at the event encouraged them to increase their engagement in sports or physical activity. The inspirational effect has changed with the age of respondents and their attitude to sports (Ramchandai, Coleman, 2012).

## **2.2. The role of sports in the life of young people**

Numerous researches have demonstrated the positive impact of sports on the physical, spiritual and mental condition of an individual. Sport, in general, has a strong impact on the social and economic life of citizens (Miragaiaa, Coleman, 2017). "Sports has a special role in contemporary society that goes well beyond mere entertainment." (Kurtzman, Soares, 2006). Young people doing sports smoke less, eat healthier, have more confidence, have fewer psychosomatic symptoms. However, reduced physical activity can be connected with drug use and

unsafe sexual behaviour (Mikulán et al., 2010). Regular physical activity is the determining factor of healthy behaviour (Nagy, Tobak, 2015). Since sporting activities carried out for recreational purposes are significant tools for improving the quality of life with preventive and intervening effects, it is important to explore factors that influence the beginning and subsequent pursuance of sports (Gémes, 2006). Young people doing sports are easier to form friendships, they are more satisfied with their appearance, less likely to be depressed, more future-orientated and more inclined to self-regulated manners. People doing regular physical activities have a better sense of well-being, and they proved to have greater emotional stability and better intellectual performance (Gémes, 2006). Physically active leisure time has a positive effect on the body image. Particularly, in the society of our time, studies and age-specific attributes pinpoint the role of media (television and internet), the popularity and growing relevance of which seems to be unstoppable. However, physically active, health-conscious behaviour might be able to compensate for the adverse effects of passive time both on physical and psychological levels (Brassai, Pikó, 2010).

According to (Kovács, 2012), individuals, while doing sports, acquire skills, abilities and values irrespective of their age, gender and societal status that can be used in other areas of life (such as persistence, discipline, co-operation, hard work, team spirit, teamwork, etc.). Since it is never too late to start any sport, it can be considered as an area of lifelong learning. If we consider the conventional health and conservation effect of sports, it is not only important but also necessary to have regular physical exercise. If this need arises already at a young age, it teaches (socializes) the individual to let regular physical exercise become an important part of his/her life; this is of great importance not only for the individual, but also for society, economy and the entire population (Kovács, 2013). In the course of his research, (Kovács, 2015) he sought to find out how sporting habits (competition, leisure and occasional sports) influence the efficiency of students.

With the exception of two efficiency components, competition and leisure athletes have achieved the highest scores, which proves that the regular form of sport contributes to the academic achievements of students, thus supporting the theory of the development model. Of the social factors influencing the complex efficiency index, resilience has the greatest impact; it is very important for our subject that leisure sports have the next highest influencing force, and competitive sports also have a positive effect, besides the control traditional social background variables. A surprising finding is that subjective well-being has a negative impact on academic achievement. According to (Kirk, 2005), higher education institutions are the last opportunity for young people still in education to be able to participate in sport under organized circumstances and to incorporate sports into their scale of values as part of their lifelong physical activity. Sporting habits of the next generation are in the hands of physical education teachers, coaches and sports organizers who are currently involved in the sport life of colleges and universities (Perényi, 2005). Personality characteristics of athletes exercising regularly are different from those of passive people. People doing sports are typically more sociable, open, more modern, willing to take more risks, they are more fashion-conscious and confident (Szabó, 2006). Sport in higher education has a dual role: on the one hand, facilitation of social integration by means of communication and promotion of health and leisure activities on the other hand (Tomova, 2012). Bilos, Galic (2016) also confirmed that the importance of student sports activities within the structure of scientific development is indisputably important.

Tourism, as one of the essential forms of utilising individual leisure time, (Fritz, 2011) provides opportunities for exercising various sports activities and the importance of sport is becoming more and more significant for both society and economy. This includes leisure sports, which refers to a physical activity that contributes to the creation of quality life and which is carried out by the individual (consumer) in his/her available leisure time. The aim of the activity includes play, entertainment, achievement of success and the improvement of condition and shape (Savella, 2014).

### **2.3. Sporting and sports motivation**

In 2014, EUROBAROMETER examined the physical activity of various groups of society involving 28000 people from 28 countries. According to the survey, 41 % of the total population of the EU does sports at least once a week, while in Hungary this rate is 38 %. People do more sports in the northern countries of Europe than in southern or eastern areas. When compared the new results to those of a 2009 survey, it can be concluded that the proportion of people in Hungary who do sports at least once a week or regularly (at least five times a week) has increased. Comparing the

percentile results of countries, Hungary is the 15<sup>th</sup> in terms of willingness to do sports. In EU Member States, men exercise more (45 %), while only 37 % of women incorporate daily exercise into their lives. When analysed by gender, percentage proportions of younger age groups (15 to 24 years) are particularly variable, as almost three quarters of men (74 %) and only the half of women (55 %) do sport at least once a week. With the increase of age, willingness to do sports decreases (Eurobarometer, 2014).

EUROBAROMETER examined the motivational factors affecting the sporting habits of Europeans. According to the EU average, the most common reasons behind physical activity are health improvement (62 %), fitness improvement (40 %), relaxation/recreation (36 %) and well-being (30 %). Unfortunately, according to the data concerning Hungary, 39 % of the population do sports to become healthier. With this result, Bulgaria is the only one behind Hungary. Among the reasons why Hungarians do not engage themselves in sports on more occasions, there is an observable ranking identical with the EU average. These are the following: lack of time, no motivation, no interest and illness (Eurobarometer, 2014).

In Hungary, the high-profile research called "Youth" (Bauer et al., 2009) which is carried out every four years, examines the 15 to 29-year-old age group, focusing on the attitude towards sports. According to the 2008 study, 38 % of young people claimed to do sports regularly, outside compulsory physical education classes at school, while in 2012 this declined to 35 %. During the interval between 2008 and 2012, physical activity became less important. Young people of our time give up physical exercise even earlier, compared to previous generations. They already start renouncing of their regular exercise during their secondary school/high school studies. 34 % of 20-24-year-olds and 29 % of 25-29-year-olds were physically active in 2012. According to the gender-based breakdown, 43 % of men and 27 % of women incorporate sports into their leisure time. Similarly to the tendencies characterizing the entire population, the most popular sports for men are football, bodybuilding and cycling, while young women prefer aerobics, cycling and home gymnastics. Level of qualification has a decisive role in the development process of a physically active lifestyle, since according to the results of the most recent survey – which is similar to the results of previous surveys – university graduates are "the sportiest" (42 %), while primary school graduates (33 %) are the less likely to do sports on a regular basis. This shows that doing sports does not only depend on available time, but appropriate attitude, which recognizes the importance of sport and which contributes to the conscious choice of an active lifestyle are also significant factors.

The correlations between sporting activities and financial situation have also been studied. It is already apparent from data collected in the year 2000 that people living in better financial conditions are twice as likely to do sports as those who are struggling with financial problems. By 2012, the perceptible differences at the endpoints of social hierarchy have shown and almost threefold increase. The very low participation rates observed in competitive and leisure sports indicate the societal level depreciation of the reputation and importance of sports, the consequences of which raise questions that are current issues in public discussions (Perényi, 2012).

The study examined the motivational factors of regular sport as a separate issue. According to young people, the most important reasons for doing sports are "to be fit" (61 %) and "to be healthy" (48 %). Among the listed factors, the reasons "to lose weight" (9 %) and "suggested by parents" (3 %) appeared as the less important elements (Perényi, 2012).

The particularly important and positive effects of social influences, family and friends on physical activity-related behaviour are confirmed in multiple international studies (Baker et al., 2000; Buckwort, 2000; Buckwort, Dishman, 1999; Humpel et al., 2002; Sallis, Owen, 1999). Hungarian researchers studying young age groups achieved identical results. According to the research conducted by (Szabó, 2006) amongst university students in Budapest, the proximity of sporting activities, the possibility of doing at alone and the company of friends are the primary activating factors of sports at this stage of life. Company of friends and fellow students is a more important motivational factor for men than for women, together with the aspect of what they are talented in. Essays and in-depth interviews of (Neulinger, 2007) conducted with university students confirm the statements of Szabó whereas the physical activity of friends is a major influence on the individual attitudes towards sports.

According to the results of studies of (Tóth et al., 2009) conducted with the involvement of students from Pécs, doing sports is more popular among male university students than in the case

of women. In terms of physical activity, men are ahead of women, but in many cases in terms other factors within the physical dimension of wellness (nutrition, sleep) the situation is reversed.

The harmonizing result of the presented three Hungarian studies is that the most important motivational factors for the students are health preservation, recreation and entertainment.

It is also apparent according to the research of (Neulinger, 2007), that high school students transitioning to higher education are the less active. During this period, they are mostly interested in the programmes offered by the university and the student halls of residence, while physical activity is relegated to the background.

This is supported by the research of (Kovács, 2011) carried out in Debrecen, where it is clear that from amongst leisure activities, internet, listening to music, and watching television reached the highest means values, while only 19 % of the students do sports more than once a week.

In the scope of his research, (Pfau, 2016) compared the sporting habits of students of five Hungarian universities (BME, DE, PE, SE, SZE) and their preferences in terms of choice of location (institutional impact). Based on the results of the research, sporting habits exist along two major trends: the first is that competitive sports activities of students during their university years significantly decline, while the other is that their leisure sports activities are prominent. What is even more interesting is that students tend to prefer sporting activities outside the campus to the ones situated inside. As far as the main reasons for giving up sports are concerned, students have indicated the lack of time as the most important factor.

Kovács et al. (2018) examined the institutional impact affecting the sports habits of students of the North Great Plain Region of Hungary and other cross-border – Slovakian, Ukrainian, Romanian and Serbian – higher education institutions with minority and majority numbers of Hungarian students. They concluded that the sporting frequency of students of the examined institutions is clearly influenced by institutional environment, since the lack of infrastructure in the involved institutions proved to be a hindering effect while the availability of proper infrastructure had a positive impact. In this area, the strategic plan of the University of Debrecen is to be highlighted as an institutional factor that has a positive impact on the growth of sporting frequency. Sports club memberships as tuition obligation and a wide range of community sports programmes emerged as institutional solutions to facilitate leisure time spent in a more "sporty" manner. It is clear that health preservation and health consciousness was behind the sports motivation of students. This result is of special significance, because in many cases already existing poor health conditions keep people from regular exercise. As a reason for not doing sports at all or doing only insufficient amounts, excessive engagement to other activities was indicated by students as the most important cause. Locally situated sports infrastructure or – if it is already available – a wider range of available sports and better organization could be helpful.

Based on the research results presented in the scientific literature review, the following hypotheses were formulated:

Hypothesis 1: The target group of the study consists of higher education students who are interested in sports and music festivals. Therefore, we assume that they prefer active entertainment and that one of their favourite leisure activities is doing sports (Brassai, Pikó, 2010; Bauer et al., 2009).

Hypothesis 2. The scales of values of surveyed higher education students are mostly influenced by fellow students and friends (Baker et al., 2000; Buckwort, 2000; Buckwort, Dishman, 1999; Humpel et al., 2002; Sallis, Owen, 1999).

Hypothesis 3: Physical appearance is a more important sports motivation for this age group than health (Perényi, 2013).

### **3. Materials and methods**

This section introduces the sampling procedure and analytical methods applied for the evaluation of the analysed sample.

#### **3.1. The Sample**

Our survey was based on a questionnaire survey; the subject of the survey, as mentioned in the introduction, is a sports event, a sports festival for higher education students, which has been held every year since 2010. The fundamental purpose of the questionnaire was to assess the opinions and demands of higher education students related to sports festivals and leisure sports in order to adapt the agenda of the Campus Sports Festival in Debrecen to actual student needs.

The sample was comprised of students of higher education who had already participated at the event on one or more occasions and whose e-mail contact information was included in our database or who were interested in the Campus Sports Festival event on our Facebook page. Completion of the questionnaire took place on an online surface, the link for accessing the questionnaire was sent in July and August 2017 via e-mail and Facebook message. A total of 1103 completed questionnaires were returned and the number of questionnaires that we were able to evaluate was 1036. The reason of the final number of questionnaires was that we removed questionnaires that were not filled or only very incompletely filled. As a result of that, a total of 1036 valid questionnaires remained. Respondents were higher education students between 18-26 years of age, 43.3 % (449 persons) women and 56.7 % (587 persons) men.

The target audience of the Campus Sports Festival are higher education students from Hungary and from neighbouring countries. Participants have been arriving to the sports event from Romania for eight years, from Ukraine for seven years and from Slovakia for three years. There have been multiple examples when former participants, who were unable to enter the competition after obtaining their degrees, visited the event and participated as fans of their alma mater institutions.

28 % of the respondents have never participated at the Campus Sports Festival. This is important to us, because 72 % of the sample is made up of young people who already have experience with the programmes and standards of our event, and the questionnaire contains general questions related to the Campus Sports Festival and ones concerning sports motivation. The present study deals with the sports motivations of higher education students broken down and compared by gender.

### **3.2. Statistical methods applied for the analysis**

Descriptive statistical methods have been applied; the structure of the sample was demonstrated by means of distribution rates, through gender and the past participation at the sports festival. Then, in the course of the analysis, questions have been examined pursuant to gender as a criterion of classification. For analysing genders and past participation at the sports festival, Pearson's Chi-square test was applied. We sought the answer to the question whether the proportion of people who have or have not already attended our sports events is different depending on their gender. Carrying out the test does not require the normal distribution of the measured variables. In the course of the analysis of questions offering multiple options of answers the observed values are the item numbers of replies to the given question, while the expected values are the numbers corrected with distributions characteristic to the statistical population ([Eurobarometer, 2014](#)).

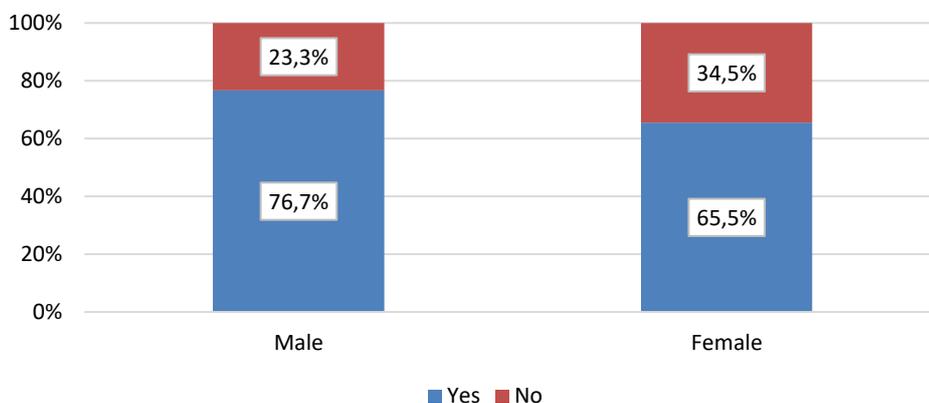
Then, for revealing the differences by gender in the case of certain questions of the questionnaire, Mann-Whitney test was applied. The Mann-Whitney-test (otherwise the Mann-Whitney-Wilcoxon- or Wilcoxon rank sum test) is a non-parametric version of the two-sample t-test, which not used in the case of non-normal distribution and ordinal variables. Respondents had to give a number between 1 and 7 as an answer to the analysed questions and a number between 1 and 6 to the question "How often do you do sports?" The Mann-Whitney test is a suitable method for the analysis of 2 samples. Requirements of the analysis were random sampling, independent nature of samples and the existence of at least ordinal variables ([Tóthné, 2011](#)).

Out of these, separate latent variables, principal components have been created by means of Categorical Principal Component Analysis /CATPCA/, in which the originally analysed factors are thematically classified, therefore we had the opportunity to work with a lower number of factors in the case of the examined variables. The elaborated principal components can be handled as normal distribution variables, therefore parametric procedures have been applied for them.

The purpose of the CATPCA method is to reveal background variables controlling primary variables by combining correlating variables into joint principal components, which are independent from each other. One of the major advantages of its application is that we are able to analyse the mass of data with a lower number of variables instead of a given number of explanatory variables. As a matter of fact, in the course of principal component analysis, the joint variance of variables is explained, thus the goal is reduction of information ([Perényi, 2013](#)).

#### 4. Results and discussion

Attendance of respondents completing the questionnaire at sports festivals has been analysed and broken down by gender (Figure 1). It can be concluded, that 65.5 % of female respondents and 76.7 % of male respondents have already attended our sports event. The higher proportion of male respondents in this case is due to the fact that the sports appearing at our event are basketball, beach volleyball and football and in the case of football – which has the highest participation rate – mostly male teams apply to the event.



**Fig. 1.** Distribution of participant rate at the sports festival by gender

On the basis of the Chi2 test, there was a difference between the responding men and women in terms of the participation at sports festivals ( $\text{Chi}^2(\text{df}:1) = 15.7; p < 0.001$ ). However, this is only due to the fact that – as presented above – sports which are done characteristically by men are represented at a larger proportion at the festival.

The question regarding how they evaluate the sports festival initiative was answered by 749 respondents; these respondents have already participated at our event earlier. They had to give a score on a scale of 1 to 7 (1 – I do not think it is a good idea, 7 – I think it is a very good idea). In terms of genders, evaluation of women and men is very similar. Women evaluated the question with a higher mean score (5.89), while the mean score given by men was 5.87. It can be established that the respondents consider our initiative favourable (Table 1).

**Table 1.** Evaluation of the sports festival initiative and the frequency of sporting activities by gender

	Men	Women	Total	Mann-Whitney test	
				Z	p
Popularity of the sports festival	378.82 (N = 430)	369.85 (N = 319)	-	-0.608	0.543
Frequency of sporting activities	551.50 (N = 587)	471.59 (N = 446)	-	-4.508	$p < 0.001$
Std. Deviation	1.64	1.46	1.57	-	-
Grouped Median	6.34	6.26	6.31	-	-
Skewness	-1.666	-1.496	-1.615	-	-

Following the above, Mann-Whitney test was applied for revealing the differences. We analysed the popularity of the sports festival initiative and the frequency of sporting activities of the respondent students (Table 1).

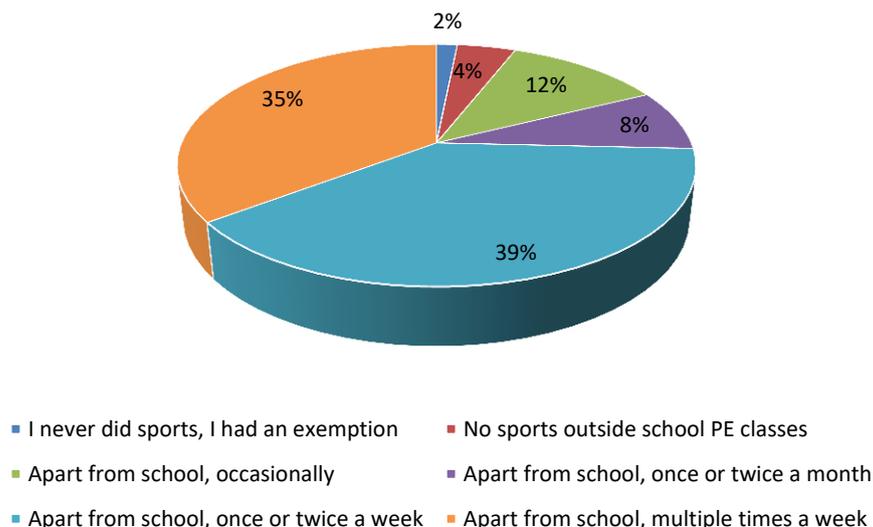
Performance of the test did not result in a significant difference in the popularity of the sports festival initiative amongst the higher education students included in the survey in terms of their gender. However, there was a difference in terms of the frequency of sporting activities, the results of the analysis show that men do sports more frequently than women ( $Z = 4,508$ ;  $p < 0.001$ ) (Table 1). This statement is in agreement with the findings of relevant scientific literature (Tóth et al., 2009), whereas doing sports is more popular amongst male university students than female ones. The event is more popular amongst female students; both questions received higher Mean Rank values from them (Table 1).

We intended to find out, what the sports festival means for higher education students. They could indicate on a scale of 1 to 7 how much a certain factor is characteristic to them. There were significant differences along five factors (social meeting, entertainment opportunity, experience, recreation and learning) (Table 2). Evaluation of self-fulfilment, prize and sports did not differ significantly between the two genders. Assessing the data, we found that in the case of the higher education students of both genders the highest mean score was given to the opportunity to do sports. Besides sporting opportunities, entertainment and experience received high scores as well. Based on the above, Hypothesis 1 is accepted, since it was found that higher education students involved in the sample prefer active recreation and one of their most popular activities is doing sports. In total, except for the factor 'prize' higher scores were given by men, while women students evaluated the factors with lower scores. It can be stated in the case of both genders, that learning, self-fulfilment and prize received the lowest mean values.

**Table 2.** Reasons behind the significance of the sports festival by gender

Factors	Women	Men	Z	p
Social meeting	5.21	5.55	-3.733	.000
Entertainment opportunity	5.81	6.02	-2.125	.034
Experience	5.77	6.15	-5.011	.000
Recreation	5.45	5.71	-3.011	.003
Learning	3.47	3.85	-3.581	.000
Self-fulfilment	4.11	4.21	-.753	.452
Prize	4.04	3.95	-.829	.407
Sports	6.11	6.16	-.168	.867

We analysed how often the students did sports during several months prior to the completion of the questionnaire; 39 % exercises outside school once or twice a week, 35 % multiple times a week. It can be said that 74 % of the respondents do sports on a regular basis (Figure 2).



**Fig. 2.** Distribution of the sporting frequency of higher education students

Of the students completing the questionnaire 26 % did not have regular physical activities during the analysed period. We asked them about their reasons of not doing sports regularly if that happens to be the case. They had to evaluate on a scale of 1 between 7 the following factors: lack of time, lack of motivation, lack of money, lack of sports equipment, state of health and proper location. There was a significant difference amongst the lack of time, motivation, sporting equipment, proper location and money between the two genders, these factors are more characteristic to women than to men. However, there was no significant difference in terms of the evaluation of the lack of health. The lack of time was given a high mean score by both genders (women: 4.71, men: 5.18). Female higher education students evaluated the rest of the factors with scores below 3. Men gave 3.29 to lack of motivation, while health received a mean score of 3.05 from them. In the case of both genders, the lack of money received the lowest score (Table 3). According to the scientific literature (EUROBAROMETER, 2014), reasons in the EU include lack of time, motivation, interest and health. In the case of our study, higher education students indicated the lack of time as the most important factor, followed by the lack of motivation. Lack of money was evaluated with relatively low scores.

**Table 3.** Reason for the negligence of sporting activities by gender

Factor	Women	Men	Z	p
Lack of time	4.71	5.18	-3.474	.001
Lack of motivation	2.82	3.29	-4.015	.000
Lack of money	2.42	2.82	-3.321	.001
Health status	2.77	3.05	-2.392	.017
Sporting equipment and location	2.39	2.64	-1.549	.121

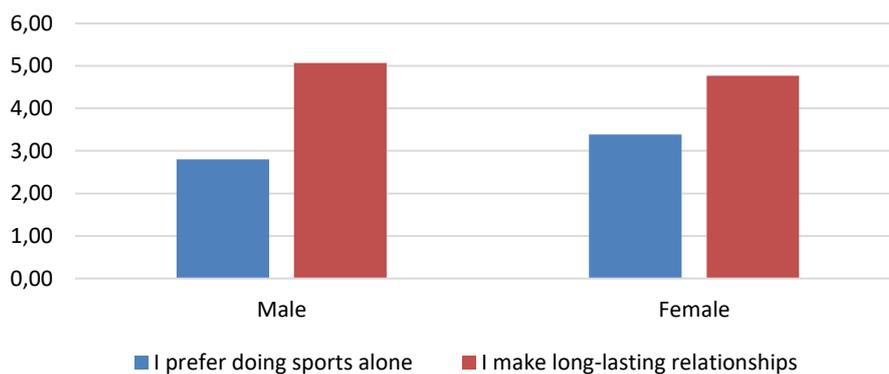
We sought the answer to the question where sports as a motivational factor is positioned within the lives of higher education students (Table 4). According to the Mann-Whitney test, significant difference was found in the case of the following motivational factors: family, sports, money, love and friends. Family and friends have a relatively more important role in the lives of women, while sports and money are relatively more important to men. This does not confirm the findings of the scientific literature (Szabó, 2016), whereas the company of friends and fellow students is a more important motivation for men than for women. The largest difference was found in the case of love, women considered this factor more important as well. Family and friends

achieved the highest mean score in the case of both genders, it can be stated that, following family, friends are the most important motivational factors. On the basis of the analysis, we accept our Hypothesis 2, since it was confirmed that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. The lowest score was given to entertainment and money as a motivational factor. Sports as a motivational factor received the highest mean score from women.

**Table 4.** The role of different motivational factors in the lives of higher education students by gender

Factor	Women	Men	Z	p
Family	6.53	6.66	-3.524	.000
Sports	5.27	5.06	-2.559	.010
Money	5.09	4.90	-2.132	.033
Love	5.52	5.93	-4.535	.000
Friends	6.07	6.22	-2.316	.021
Societal status	5.49	5.65	-1.842	.066
Career	5.20	5.17	-.577	.564
Entertainment	4.39	4.39	-.107	.915

Respondents had to evaluate the following statements on a scale of 1 to 7: “Sport is primarily important to me, because I pursue a healthy lifestyle”, “I prefer doing sports alone, not in a community”, “Such relationships might be formed during sports, which might prove to be long-lasting”, “Sports is an international forum in which it is easy to communicate despite lingual difficulties”. Considering the above statements, the Mann-Whitney test resulted in a significant difference amongst genders in two cases (“I prefer doing sports alone, not in a community”, “Such relationships might be formed during sports, which might prove to be long-lasting”) (Figure 3). Women are more likely to do sports alone ( $Z = -4.885$ ;  $p < 0.001$ ) and they use sports to a relatively larger extent to build long-lasting relationships than men ( $Z = -2.224$ ;  $p = 0.026$ ). Both genders gave the lowest score the “I prefer doing sports alone” factor, while the factor “healthy lifestyle” received the highest score in both cases.



**Fig. 3.** Other sporting habits by gender

We also analysed the event-related motivational factors of respondents, we intended to find out how much the listed factors influence them when they make a decision to participate at a sports festival/event (Table 5).

**Table 5.** Importance of the factors of event-related motivation by gender

Factor	Women	Men	Z	p
Optional sports	5.83	6.45	-3.927	.000
Proximity of residence	4.65	5.16	-4.618	.000
Accompanying programmes	4.52	5.04	-5.164	.000
Natural sights	4.11	4.40	-2.937	.003
Quality of accommodation	4.09	4.41	-2.763	.006
Environmental protection	3.37	3.84	-4.224	.000
Registration fee	4.55	5.15	-5.541	.000
Interest of friends	5.44	5.71	-3.610	.000
Prizes	3.65	2.99	-.085	.932
Drug prevention	3.66	3.18	-1.582	.114

Prizes and drug prevention received low scores and there was no significant difference amongst genders in their case, while we found significant difference in the case of the other factors. Optional sports were chosen as the most effective motivational factor in the case of both genders. Male students gave the highest score for this factor. In the case of both women and men, this factor was followed by the interest of friends and the proximity of residence. Except for prizes and drug prevention, men gave higher scores to the rest of the factors. In the case of women, environmental protection while in the case of men, prizes received the lowest scores.

Besides the aspects of event-related motivation, we also sought the answer to what factors motivate students when they decide to do sports (Table 6). We found significant difference amongst genders in terms of eight of the motivational factors. All of the students agreed that they forget about their problems during sporting activities and they are able to relax, which confirms the findings of scientific literature (Gémes, 2006), whereas people who engage in regular physical exercise, are in better general condition, they have better emotional stability and intellectual performance. Also, according to the EU average, 36 % of the survey participants choose sports for recreation and 30 % do so to feel better. Women gave the highest mean score to this factor. In the case of women and men, the factors "It is important to me to improve during exercising" and "My own attitude is the most important during doing sports" became the second and third. There was a very spectacular difference in opinion in terms of competition, which is relatively more important to men and in terms of the factor effectiveness of body transformation, which in turn was more important to women than to men. Developing new friendships and additional programmes outside trainings are relatively important to men, while the other factors are more important to women.

According to scientific literature (Perényi, 2012), young people indicated the factors "to be fit" (61 %) and "to be healthy" (48 %) as the most important reasons of doing sports. Our findings confirm the results of relevant scientific literature (Szabó, 2006; Neulinger, 2007; Tóth, 2009) respondents gave higher scores to health preservation than to the factors fat burning and body transformation. Therefore, Hypothesis 3 is rejected and we found that health is a more important sports-related motivational factor for higher education students than external appearance.

**Table 6.** Importance of the factors of event-related motivation by gender

Name of the factor	Women	Men	Z	p
When doing sports, I forget about my problems and become completely relaxed.	6.06	5.94	-2.555	0.011
When choosing a sport, I decide based on potential fat burning and body transformation.	4.25	3.16	-8.767	0.000
I find new friends during sports and it is important to me	4.27	4.52	-1.973	0.049

I am only willing to pay the smallest amount of money for doing sports	3.60	3.42	-1.600	0.110
I only pursue a certain sport for a considerable period if there are additional programmes outside the trainings.	2.65	2.89	-2.219	0.026
I only pursue a sport where I am able to compete.	2.45	3.12	-5.592	0.000
I am not interested whether I am successful at a given sports.	3.63	3.44	-1.484	0.138
It is important to me that a sport contributes to the preservation of my health.	5.53	5.21	-3.135	0.002
It is important to me to improve during exercising.	5.95	5.88	-0.625	0.532
It is important to me to be committed towards the given sport.	5.48	5.39	-1.393	0.164
It is important to me to be able to train without a considerable extra time and energy input (e.g. reaching the gym).	4.48	4.29	-2.244	0.025
It is important to have a proper atmosphere and good company during training.	5.72	5.54	-2.759	0.006
It is important for my intellectual capacity to improve through physical training.	5.26	5.10	-1.643	0.100
My own performance is important during training.	5.81	5.74	-0.714	0.475
My own attitude is the most important during doing sports.	5.77	5.59	-1.926	0.054
I like to try new kinds of sports.	4.66	4.52	-1.157	0.247

We carried out principal component analysis based on sport motivation factors (Table 7). In the course of the analysis, respondents had to evaluate 16 factors on a 7-grade Likert-scale, in terms of how important, how motivating these factors are for them in relation with doing sports. Out of the 16 factors, 5 principal components formed. Principal component analysis requires the number of observations to be 3-10 times higher than the number of variables. The sample included 1036 valid observations, which is more than enough in this respect, as there were nearly 65 observations for every variable. Principal components are variables in the case of which analysis of variance can be performed, as the resulting principal components will have normal distribution. In the course of the principal component analysis, we managed to spare a considerable amount of information. One of the significant steps of the analysis was based on the observed values of the original variables and the principal component estimates weights. Principal component weights show how much the same variable is influenced by each principal component. Principal components weights are indicated in matrix distribution. It is a usual practice that variables having weight with an absolute value of 0.70 or higher are considered to belong to the same principal component, while variables having a weight with an absolute value below 0.70 are not identified with the analysed principal component. However, in multiple studies the variable is allocated to the principal component even if its weight has a value above 0.5 (Matkó et al., 2014).

Principal components have been titled as the components of performance, atmosphere, competition, health and minimum input. The performance component includes one's own performance, development, commitment, attitude, successfulness and intellectual capacity. The atmosphere component unites good atmosphere, new friends, trying new sports and relaxation. The competition component includes the importance to compete and programmes outside of training. The health component involves effective body transformation and the significance of preserving health, while the minimum input component contains the support of time and energy consumption and minimal payment obligations.

**Table 7.** Principal component structure elaborated for sport motivation

Factor	Principal component				
	Performance	Atmosphere	Competition	Health	Minimum input
My own performance is important during training	.759				
It is important to me to improve during exercising	.755				
It is important to me to be committed towards the given sport	.673				
My own attitude is the most important during doing sports	.565				
I am not interested whether I am successful at a given sport	-.553				
It is important for my intellectual capacity to improve through physical training	.460				
It is important to have a proper atmosphere and good company during training.		.666			
I find new friends during sports and it is important to me		.654			
I like trying new kinds of sports		.516			
When doing sports, I forget about my problems and become completely relaxed		.495			
I only pursue a sport where I am able to compete			.809		
I only pursue a certain sport for a considerable period if there are additional programmes outside the trainings			.740		
When choosing a sport, I decide based on potential fat burning and body transformation				.718	

It is important to me that a sport contributes to the preservation of my health	.648
It is important to me to be able to train without a considerable extra time and energy input	.810
I am only willing to pay the smallest amount of money for doing sports	.669

Differences in sport motivation were analysed by gender; according to the findings, there were no significant differences amongst genders in the case of the ‘performance’ and ‘atmosphere’ principal components, while we found significant difference in the case of the following principal components: health, competition and minimum input (Table 8).

**Table 8.** Sport motivation differences by gender

Principal component	Women	Men	F	p
Atmosphere	0.006	-0.008	0.048	0.826
Competition	0.116	-0.152	18.518	0.000
Minimum input	-0.063	0.083	5.436	0.020
Performance	-0.038	0.049	1.926	0.166
Health	-0.173	0.227	42.409	0.000

Competition and atmosphere as motivational factors are more important to women, while performance and health are more important to men.

**5. Conclusion**

Scientific literature found that higher education institutions are the last opportunity for young people still in education to be able to do sport under organized circumstances and to incorporate sports into their scale of values as part of their lifelong physical activity. Sports programmes hosted by higher education institutions – like the Campus Sports Festival, which is held annually in Debrecen – are able to contribute to this process. The present study deals with questions related to the sporting habits of students included by the sample (1036 persons), focusing on the differences and among the opinions of students by gender. Following the performance of the test, there was no significant difference in terms of the popularity of the sports festival initiative in terms of the gender the higher education students involved in the survey. However, there was a difference in terms of the frequency of doing sports; the results show that men do sports more often than women do. There was a significant difference between the genders in terms of the reasons to neglect of sporting activities (lack of time, lack of motivation, lack of sports facilities and lack of money); these factors are more characteristic to women than to men. Evaluation of health status was not significantly different. However, there was a significant difference in terms of the following motivational factors: family, sport, money, love and friends. Family and friends have a relatively more important role in the lives of women, while sports and money are relatively more important to men. This does not confirm the findings of the scientific literature, whereas the company of friends and fellow students is a more important motivation for men than for women. Women are more likely to do sports alone and they use sports to a relatively larger extent to build long-lasting relationships than men. There was a very spectacular difference in opinion in terms of competition, which is relatively more important to men and in terms of the factor effectiveness of body transformation, which in turn was more important to women than to

men. On the basis of the analyses, it was established that higher education students belonging to the sample prefer active entertainment and one of their favourite leisure activities is doing sports and that the scale of values of the surveyed higher education students is mostly influenced by fellow students and friends. It was also found that for higher education students, health is a more important motivational factor – in relation with sports – than physical appearance.

By means of Categorical Principal Component Analysis we analysed the principal component structure of sports motivation factors. In the course of the analysis, respondents had to evaluate 16 factors on a 7-grade Likert-scale, in terms of how important, how motivating these factors are for them in relation with doing sports. Out of the 16 factors, a total of 5 principal components have been formed. Principal components have been named the components of performance, atmosphere, competition, health and minimum input. The performance component includes one's own performance, development, commitment, attitude, successfulness and intellectual capacity. The atmosphere component unites good atmosphere, new friends, trying new sports and relaxation. The competition component includes the importance to compete and programmes outside of training. The health component involves effective body transformation and the significance of preserving health, while the minimum input component contains the support of time and energy consumption and minimal payment obligations. Sport motivation differences have been analysed by gender and we found that there was no significant difference amongst the countries in the case of the performance and atmosphere capital components, while there was significant difference in the case of health, competition and minimum input. Findings of the study will be taken into consideration in the case of our upcoming events during the next years and we will suggest the utilisation of these results to the relevant department responsible for the elaboration of the sports strategy of the University of Debrecen.

## **6. Limitations**

The present study has been limited to the sample of higher education students who have already participated in or are interested in the Campus Sport Festival in Debrecen. The research process was made difficult by the fact that the survey was conducted during the summer period, and numerous people who were in our database because they already participated in our event before did not complete the questionnaire. It is possible that more people would have completed the questionnaire in a different period, however we were still able to evaluate a large number of samples. In the future, to improve the quality of the event, we intend to perform the analysis on a larger number of samples that include a higher number of higher education students who have never been to the event. That way it is possible to become familiar with their opinions and hopefully we can meet more new attendees besides returning participants as well.

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