

Original Article

Use of modern technologies as a tool to support measures promoting physical activity – differences according to the gender of respondents

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Abstract

The awareness of the benefits of physical activity has been on the rise in recent years. It can be said that sport and fitness activities are now recognized as a lifestyle and even a strong trend in the methods of spending free time. New sports and fitness clubs and outdoor fitness facilities are being opened, online activities are also becoming increasingly popular. Clients of the sports and fitness offer also go with the times, appreciating the achievements of modern technology. Mobile applications are being increasingly used as a tool to create physically active communities, motivate to engage in physical activity and reward for overcoming successive difficulty levels. The purpose of the study was to indicate gender differences in the context of physical activity and to determine the attitude of activity participants towards modern technologies. It was assumed that there are significant differences between the attitude towards modern technologies (including mobile applications) and actual activity. The survey was conducted among young participants in physical activity and the results showed that in the context of technologies supporting physical activity. Young people are interested in modern technologies in sports and fitness services, which is an argument for including mobile applications in their marketing schemes. Differences were, however, noticed among the other studied trends, which also constitutes important information for sports and fitness businesses. The results obtained can be applied not only for creating new sports and fitness products or communication channels with physical activity participants, but also in employment planning and other aspects of business management. The article also points out the limitations that developers of applications dedicated to sports and fitness services should take into account, such as excessive involvement of participants, inducing obsession, guilt due to a lack of results. One important argument for the use of mobile applications in the promotion of physical activity is the current global situation related to the COVID-19 pandemic.

Keywords: mobile applications, sport, fitness, promotion of physical activity, sport and fitness businesses

Introduction

“Faced with the threats of a sedentary lifestyle, physical activity becomes a key factor conditioning proper physical, social and mental development of a young body. The benefits of physical activity are obvious.” (K. Görner et al., 2020, p.2013) The behaviour of the youth related to active lifestyles undoubtedly has an impact on their health in the future. Young people may not have sufficient motivation and self-control to engage in sports and other active forms of recreation. “Thus, appropriate exercise habits will better support the growth and development, prevent illness and injury, and ensure a healthy life in the future.” (Syuro et al., 2020, p. 690) Therefore, it is important to involve various market participants, sports and fitness businesses, local governments and social organisations in the promotion of healthy behaviours and physical activity, as well as to create tools that can help to engage in and form the self-control of healthy habits. The solution to this situation may turn out to be mobile applications and widely understood modern technologies, the use of which for health promotion can be an important element of an active lifestyle. The period of university studies is “the ideal time to intervene in order to reduce the effects of health problems and the risk of chronic disease at a later age. Since young adults are frequent users of mobile devices, the use of technology can improve their engagement” (in: A. Sarcona et al., 2017, p. 299).

According to a study by CBOS Public Opinion Research Center, “the motivations associated with sport are largely related to age and gender of the respondents. Although in all groups divided by age and gender, respondents most often declare that they play sports for health, it can be observed that men more often than women take up physical activity for pleasure (61% against 50%), and women – to look good, have a nice figure (30% against 19%). The analyses also show that, more than average, younger people take up physical activity for beauty, well-being, stress relief and pleasure, and that for them – more frequently than for older people – sports are a way of spending time together with others” (CBOS, 2018, p. 6). During this period of life, aspects such as preventive health care or taking up activities for health are not a priority for the youth.

Today, new trends and forms of activity are emerging in addition to the previously known categories of leisure time management. In view of the current trend of cocooning¹, a modern human is looking for ways to satisfy the needs of physical activity, to get out of one's micro-world in order to liberate sportsmanship and often the desire to compete, work on one's body and soul. Regular sporting and fitness activities help maintain well-being and prevent many chronic diseases. "Hypokinesia (lack of exercise or its insufficient dose) is even considered to be one of the sources of the obesity epidemic and the accompanying metabolic syndrome, it is also considered to be one of the causes of ischemic heart disease and cancer" (E. Biernat, 2014). Engaging in minimal activity improves the functioning of the cardiovascular and respiratory systems, affects the nervous system, the musculoskeletal system, corrects body posture defects, reduces muscle tension, depressive states, improves the quality of sleep. There are many other positive effects of physical activity, which is why appropriate activity, recovery, regeneration of the body, rest and healthy behaviours are so important. As E. Biernat points out, "the physical activity of the society should be as extensive as possible because it has many social and economic functions. This situation requires constant monitoring and diagnosis. Low levels (insufficient dose or lack of any physical activity) were found in almost 1/3 of the Warsaw adolescents surveyed. In addition, there is a tendency to decrease the level of activity as we move to a higher level of education" (in: E. Biernat, 2014)

The belief in the benefits of regular sporting and fitness activities is confirmed by analyses and research. "The mission of sports and fitness organisations is to develop strategic concepts for the construction and modernisation of sporting and fitness infrastructure" (M. Lechicka-Kostuch et al., 2008). "Poles play sports not only using the services of sports and recreation companies offering such services as: fitness, gym, squash, swimming pool, power bike, dance classes, climbing walls, cross training, outdoor training or martial arts. The most frequently chosen forms of recreation and sport activity carried out by Poles in their free time, as shown by the CBOS research, are as it follows: fitness classes, including crossfit, zumba, indoor gym exercises, a sports hall as well as running, jogging. It can also be observed that in sports and recreation centres young people usually train at organized and individual classes." (A. Widawska-Stanis, I. Sowier-Kasprzyk, 2020)

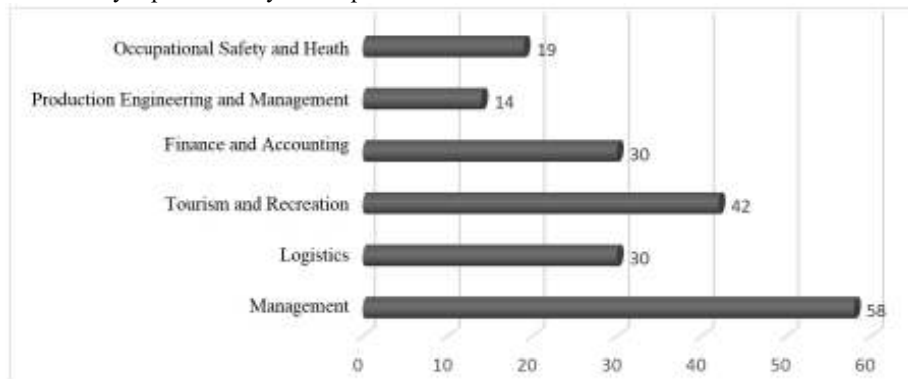
The purpose of the study was to indicate gender differences in the context of physical activity and to determine the attitude of respondents towards modern technologies. And since mobile applications are present in the life of young people, it was assumed that they can help to promote an active lifestyle. It was interesting to see whether there are differences in the approach to activity by gender and whether mobile applications are a noticeable trend in the promotion of physical activity among the youth.

Material & methods

The main goal of the partial study was to research gender differences and opinions regarding modern technologies, trends and products used in sports and fitness services. The study covered 193 respondents (113 female and 80 male) and was conducted among students of the Czestochowa University of Technology in the period from October 2019 to January 2020. The study was conducted using the direct survey method. The questionnaire contained 11 questions, which mainly concerned the physical activity of the young people, noticeable trends and ways of promoting physical activity among the target audience. The selection of the sample was purposeful, students representing the leading fields of study at the Faculty of Management of the Czestochowa University of Technology took part in the survey.

The questionnaires were handed out to 200 students, 193 correctly completed questionnaires were used for further analysis. As mentioned above, 59% of respondents were women and 41% men. Students, 21-24 years of age (146 respondents) dominated, representing various fields of study, most numerously Management as well as Tourism and Recreation, as shown in Chart 1.

Chart 1 Fields of study represented by the respondents

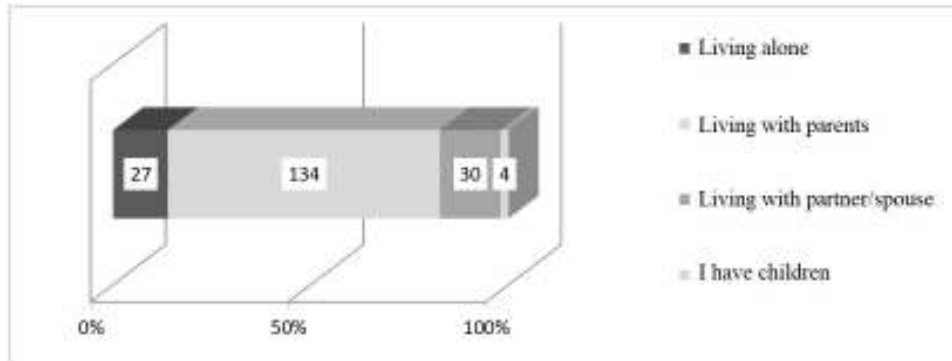


Source: Own study based on the research conducted

¹Cocooning (staying at home) – a trend in consumer behaviour which is dominated by a desire to distance oneself from the outside world to protect one's privacy.

The students surveyed were mainly residents of villages (35%) and cities with over 200 thousand inhabitants (29%). The vast majority of respondents live with their parents (134 respondents), which may have a significant impact on the type of leisure activities undertaken. The other results concerning the living/housing situation are presented in the chart below.

Chart 2 Housing situation of the respondents



Source: Own study based on the research conducted

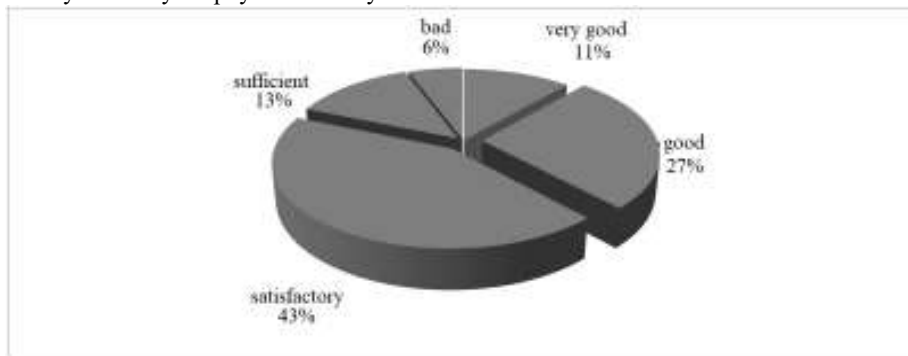
In the further part of the survey, the respondents answered questions regarding physical activity, noticeable trends, barriers to engaging in sports and fitness, possibilities of supporting this activity by modern technologies and tried to answer the question who, in their opinion, is responsible for the promotion of a healthy lifestyle. A portion of respondents indicated figures who, in their opinion, are role models in terms of physical activity.

Modern trends in sports and fitness activities – results

The most important issue, from the point of view of the adopted thesis, was to determine which current trends in sports and fitness services are most noticeable by the respondents, whether there are differences in the approach to activity according to gender, and what significance mobile applications have for the activity.

At first, the respondents declared their commitment to physical activity and indicated their preferred forms of spending free time. 93% of the students think they are physically active, but only 11% think they are very active. The most frequent answers were: I view my activity as satisfactory (43%) and good (27%). The remaining results are presented in Chart 3.

Chart 3 How do you view your physical activity?

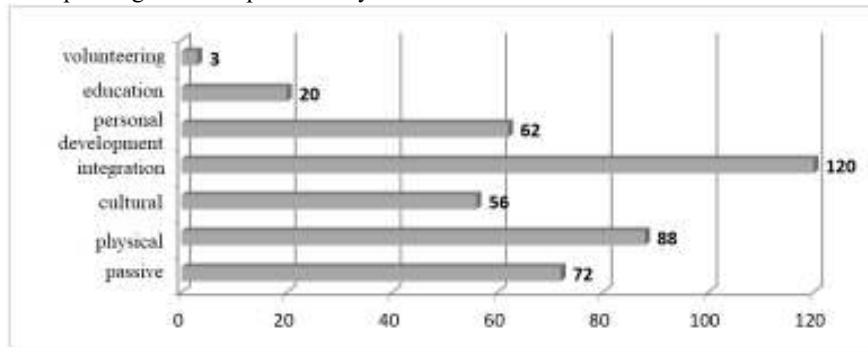


Source: Own study based on the research conducted

One should note the forms of spending free time and the place that physical activity takes among them. The youth are not satisfied with their level of fitness, but at the same time, it was not physical activity that was the most frequently indicated way of spending free time (as shown in Chart 4 – several forms of spending free time could be chosen as answers to this question).

The youth definitely spend time on integration, i.e. meetings with family, friends, making new acquaintances. Only in the second place do they undertake physical activity – they engage in sports and fitness. The third, most frequently indicated form of spending free time included all passive forms of spending free time – sleep, rest, watching television.

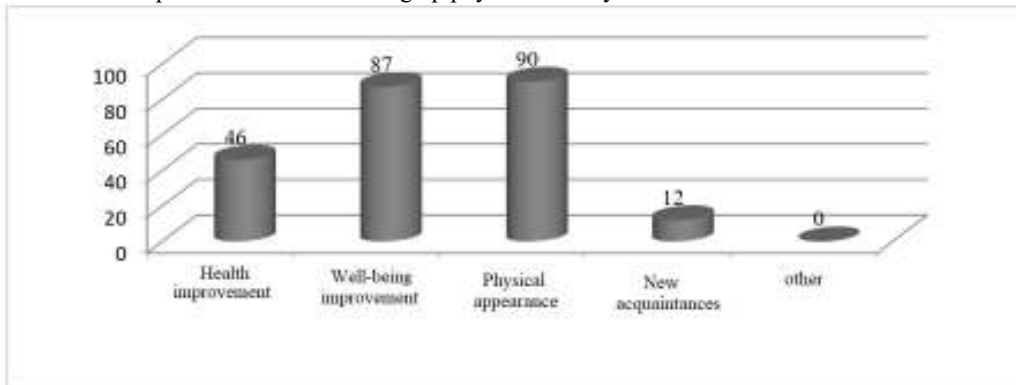
Chart 4 Forms of spending free time preferred by students



Source: Own study based on the research conducted

Among the most important motivations for undertaking physical activity, the respondents indicated physical appearance (90 indications), well-being improvement (87 indications) and only then, the health aspect (46 indications). The respondents, due to their young age, perhaps do not yet see the health aspects of physical activity and do not treat such activity as a method of preventive health care.

Chart 5 The most important reasons for taking up physical activity

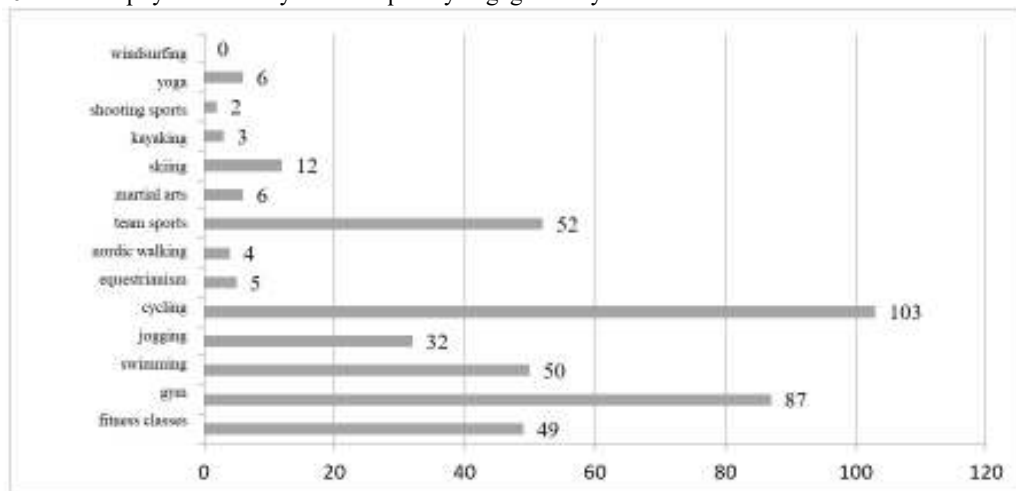


Source: Own study based on the research conducted

Among the barriers to engaging in any physical activity, students most often pointed out two factors: lack of time and laziness. Other obstacles included health problems, involvement in many projects, lack of financial means and being overloaded by responsibilities.

According to the respondents, the most frequently chosen forms of physical activity include cycling (103 indications), gym (87 indications), team sports and swimming (52 and 50 indications) and fitness classes (49 indications). The "other" category included such activities as walks, mountain hiking, dancing, trampolines, volleyball, tennis, table tennis. However, these were only individual responses. The remaining results are presented in Chart 6.

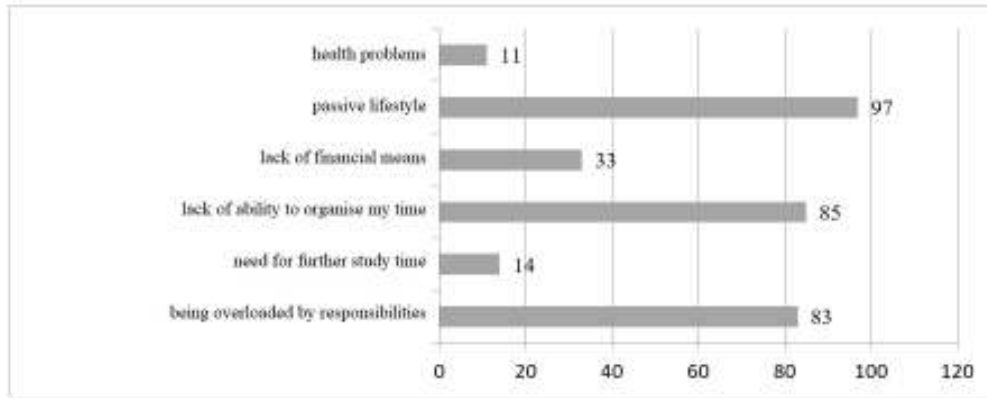
Chart 6 Forms of physical activity most frequently engaged in by students



Source: Own study based on the research conducted

The next question concerned the reasons for the lack of interest in physical activity of young adults in the opinion of the respondents. According to the respondents, young people are most often not interested in physical activity for three reasons: preference for a passive lifestyle, lack of ability to organize one's time and being overloaded with responsibilities. Other issues, such as lack of financial means, need for further study time and health problems received far fewer responses, as shown in Chart 7. The students also pointed out that the dominance of social media over social life is also the reason for the lack of interest in physical activity among the youth.

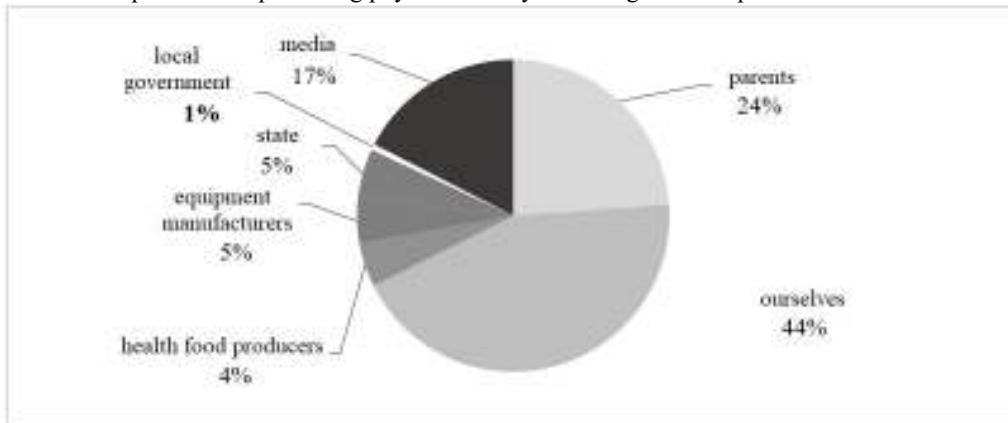
Chart 7 Reasons for lack of interest of the youth in various forms of sporting and fitness activities in the opinion of the respondents



Source: Own study based on the research conducted

According to the respondents, the main responsibility for promoting active attitudes and engaging in physical activity lies with themselves (44%), parents (24%) and the media (17%), as shown in Chart 8. Among people worthy of imitation in terms of physical activity, they most frequently pointed out: Cristiano Ronaldo, Robert and Anna Lewandowski² and Ewa Chodakowska. Other names were also mentioned, such as: Katerina Usmanova³, Greg Plitt⁴, Conor McGregor⁵.

Chart 8 Who is responsible for promoting physical activity according to the respondents



Source: Own study based on the research conducted

Young respondents drew attention to the current trends in the sport and fitness offer which they have recently observed. Most people paid attention to such trends as mobile applications/mobile technology and personal trainer services. Indeed, both these trends have recently become very noticeable. In addition, the youth have observed the popularity of low-cost workouts (e.g. outdoor gyms) and individualised workouts. Other activities included short class activities, which take place in the gym/fitness clubs and last from 15 to 30 minutes, an offer for seniors, classes for pregnant women and EMS training, which involves the elicitation of muscle contraction using electric impulses. The "other" category included in the gamification of activities, classes in luxurious conditions, health-focused workouts and sports coaching – a person engaging in a fitness activity,

² Anna and Robert Lewandowski – a married couple of athletes, Robert Lewandowski – a footballer, Anna Lewandowska – a representative of Poland in traditional karate, personal trainer

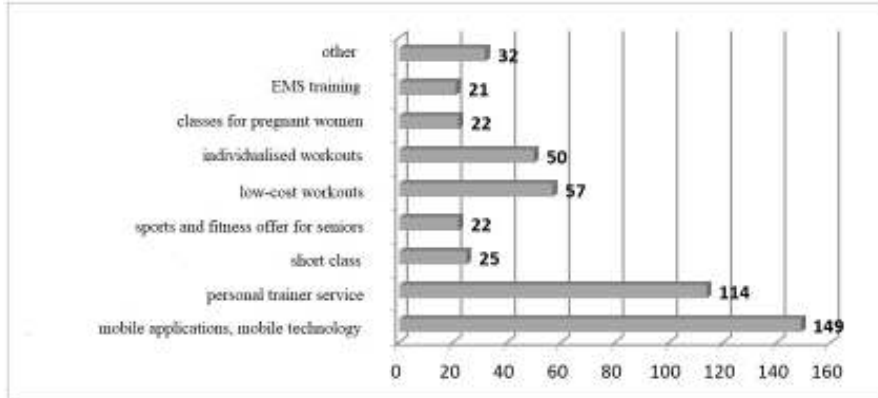
³ Katerina Usmanova – Russian fitness figure

⁴ Greg Plitt – American fitness instructor

⁵ Conor McGregor – Irish mixed martial artist

during the run hears the voice of the trainer in their headphones, instead of music, which is supposed to motivate to the activity and give instructions on how to exercise (Chart 9 presents the results).

Chart 9 Trends in sports and fitness activity in the opinion of respondents



Source: Own study based on the research conducted

In further research, the thesis was formulated that awareness of new trends in sports and leisure activities depends on gender. Due to the fact that the study involved a much larger group of women (113 respondents) compared to men (80 respondents), a table of percentages of specific trends was used in the study.

Table 1 Percentage of trend indications by gender

	mobile application s, mobile technology	Personal trainer service	Short class	Fitness offer for seniors	Low-cost workouts	Individuali sation of workouts	Classes for pregnant women	EMS training	Other	
Women	88	74	9	13	35	24	16	18	14	291
Men	61	40	16	9	22	26	6	3	18	201
	149	114	25	22	57	50	22	21	32	492

Source: Own study based on the research conducted

The null hypothesis was that the data sets are independent, i.e. the indication of the activity trend does not depend on gender. The calculation of the chi-squared empirical coefficient (statistics) was carried out according to the formula⁶:

$$\chi^2 = \sum \frac{(n_{ij} - \hat{n}_{ij})^2}{\hat{n}_{ij}}$$

The empirical statistics calculated in this manner indicated that χ^2 equals 20.76. With almost all levels of confidence (with eight degrees of freedom) it was higher than the theoretical values. If the empirical statistics are higher than the theoretical statistics for χ^2 , the hypotheses regarding the independence of traits should be rejected, which means that the choice of activity trends is depends on gender. This can also be seen in the activity trend choices chart, which shows the average choices for all the respondents of a given gender participating in the survey.

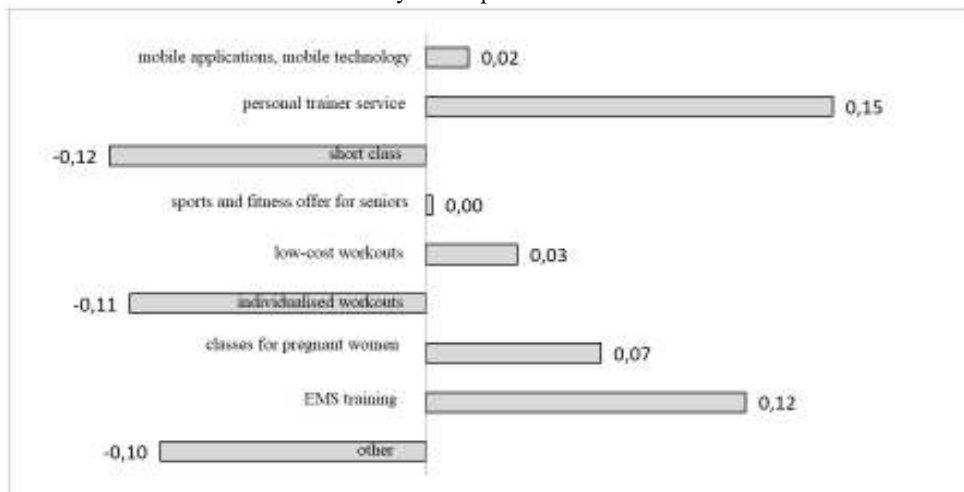
Chart 10 Average choices for all respondents of a given gender participating in the survey



Source: Own study based on the research conducted

⁶ Chi-squared – definition and application, online access: <http://obliczeniastatystyczne.pl/chi-kwadrat/>

As the chart shows, there are differences between the individual choices.
 Chart 11 Differences between trends selected by the respondents



Source: Own study based on the research conducted

As shown in Chart 11, in the case of personal trainer service, EMS training, classes for pregnant women, the prevalence of women's choices are observable, while in the case of short classes, individualisation of workouts and other answers (here sports coaching, gamification, workouts in luxurious conditions and health-focused workouts were mentioned) – the prevalence of men's choices.

Discussion

The most important conclusions of the study:

- Most young people want to be or are physically active. This is related to a positive view of own level of fitness.
- The basic motivations are the desire to improve one's well-being and care for an attractive appearance.
- Most frequently, physical activity takes place 2-3 times per week
- Mobile applications as support of physical activity are the most noticeable trend among the respondents
- The most popular activities are gym and cycling
- According to the respondents, the responsibility for healthy habits is borne by themselves, parents and the media.
- Respondents are interested in new trends.
- Trends are gender-specific, women choose personal trainer services and EMS training, while men choose short classes, individualised workouts and other forms of physical activity.
- Sports and fitness businesses can use this knowledge and differentiate their marketing messages and design marketing schemes according to the gender of the target audience.

By comparison, according to the survey conducted by Benefit System in 2019, 21 million Poles undertake physical activity at least once a month. Compared to 2017 and 2018, there was an increase in active people by 2 pp. Cycling and walking are among the most popular activities. The most important motivations for taking up activity before the age of 30 are pleasure and sculpting a good body figure, after the age of 30 – the most important motivator is health (Benefit System, 2019).

Conclusions

The application of modern technologies to diversify the offer of sports and fitness businesses will certainly help in promoting healthy habits. Trends such as personal trainer service, individualisation of the offer, sports coaching, activities for specific groups of recipients, mobile technologies, short classes, EMS training and health-focused workouts were noticed by younger audience. Perhaps in the near future, these services can be included in the permanent offer of most sports and fitness facilities and will, in a way, enhance it. One cannot fail to notice that young people commonly use mobile phones, smartphones, tablets or other mobile devices, they also use numerous lifestyle applications. Sports and fitness businesses can use such applications to create communities focused on the issues of health and fitness. As the study showed, mobile applications are of interest to the youth, regardless of gender.

However, using mobile applications in promoting healthy lifestyle and physical activity and as support tools for sports and fitness businesses raise some questions. Among them are the negative feelings and behaviours that can occur as a result of using this type of applications. Getting obsessed, feeling guilty about not completing a particular set of exercises, failure to see results, stress or interference with everyday duties are just some

examples. Therefore, it is important for developers of such tools to individualise and customise their applications as much as possible to fit the user's capabilities, level of fitness, gender and needs.

Thanks to innovative technology, mobile applications that monitor healthy behaviours and physical activity can expand the marketing schemes of sports and fitness businesses and activate the participants of sports activities. They are undoubtedly a very promising trend that can be used to improve the health of modern humans, especially in view of the current global situation related to the COVID-19 pandemic. The economic crisis, which is a consequence of this situation, will force businesses to reorganise their activities and offer structures. A change of the economy, consumer behaviours and shopping patterns may initially hamper the development of certain forms of physical activity. Therefore, the businesses operating on the sports and fitness services market should use the potential of mobile applications and prepare a customer offer of fitness activities seen in a slightly different way.

References:

- Physical Activity of Poles, Report from CBOS Public Opinion Research Center study, 125/2018 on-line access: https://www.cbos.pl/SPISKOM.POL/2018/K_125_18.PDF
- Biernat E., *Aktywność fizyczna w życiu współczesnego człowieka (Physical Activity in the Life of Contemporary Humans)*, e-Wydawnictwo Narodowego Centrum Badania Kondycji Fizycznej, 2014: 1-4
- Chi-squared – definition and application, online access: <http://obliczeniastatystyczne.pl/chi-kwadrat/>
- Görner K., Reineke A., 2020, *Journal of Physical Education and Sport (JPES)*, Vol 20 (Supplement issue 3), Art 272 pp 2013 – 2020, The influence of endurance and strength training on body composition and physical fitness in female students, (It appeared in English)
- Lechicka-Kostuch M., Łuczak M., Wierzbicka B., *Sport i rekreacja jako współczesne trendy zagospodarowania czasu wolnego (Sport and Fitness as Modern Trends in Leisure Time Management)*, [in:] *Turystyka i sport dla wszystkich w promocji zdrowego stylu życia (Tourism and Sports for Everyone in the Promotion of a Healthy Lifestyle)*, Academy of Tourism and Hotel Management in Gdańsk, Gdańsk 2008, p. 135
- MultiSport Index 2019 – survey of the physical activity of Poles <https://www.benefitsystems.pl/o-nas/centrum-prasowe/komunikat/multisport-index-2019-badanie-aktywnosci-fizycznej-polakow/>
- Sarcona A., Kovacs L., Wright J. & Williams Ch., Differences in Eating Behavior, Physical Activity, and Health-related Lifestyle Choices between Users and Nonusers of Mobile Health Apps, *American Journal of Health Education*, dostęp on-line: <https://www.tandfonline.com/doi/full/10.1080/19325037.2017.1335630>
- Syuro Ito, Takahiko Fukumoto, Hidetaka Imagita, 2020, *Journal of Physical Education and Sport (JPES)*, Vol.20 (2), Art 101, pp. 690 - 706, 2020, Relation between the Height–Weight ratio and physical fitness among Japanese elementary school students, (It appeared in English)
- Widawska-Stanisza A., Sowier-Kasprzyk I., 2020, *Journal of Physical Education and Sport*, Vol 20 (Supplement issue 2), p. 1210, Sports interests of Polish academic youth: analysis of selected trends in the marketing aspect of business operations, (It appeared in English)