

ENHANCING THE POTENTIAL OF SPORTS FACILITIES AT SCHOOLS

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Abstract

The design and condition of school buildings, as well as the creation of welcoming, suitable and pleasant environments, are significant factors that impact parents' school selection and have an important impact on the learning process and children's well-being. The lack of sports facilities in our schools complicates the teaching process and puts physical education teachers under pressure to come up with non-ideal solutions to complete the course, especially during rainy and snowy seasons.

Academic success and mental development are often prioritized by educational institutions, but physical activity-related matters are frequently disregarded, and as a consequence sports environments in schools do not receive sufficient attention. Many times, the lacking of school sport halls are justified by the lack of funding for their construction and maintenance. However, these areas are very vital not only for school students but also for the community as a whole, as they can serve as central points for a variety of social, athletic and cultural events. In some cases, they can also be financially beneficial; schools can rent them and generate income.

The purpose of this research is to analyze the current state of sports facilities in the schools of Tetovo, how Tetovo citizens perceive the value of these facilities and how that affects the use and design of such services.

Based on the research developed through surveys and field observation will be offered suggestions on the design of new sports spaces and improvement of old ones. This research is not meant to address detailed aspects of the design of these facilities, but it is a review of the main concerns that need to be covered in the schools of Tetovo.

Keywords: Sport facilities, school design, physical education, sport architecture, community.

1. Introduction

As childhood obesity is growing around the world but also in our country, the awareness of the importance of sports activities has increased. Although there has been a lot of research on how physical activities affect the improvement of physical and mental health, there isn't enough literature for the link between school environments and children's wellbeing, so school sports facilities can be seen as a useful, spatially-organized resource for educators and children. School premises in Tetovo have been studied in terms of accessibility and inclusiveness, (Ibraimi & Saliu, 2021) school yards have also been studied as areas for sports activities, (Dehari, Ibraimi, & Murati, 2022) but there has been no concrete work on sports halls in schools. When in fact, efficiency of teachers and the performance of students are significantly impacted by the state of school sport facilities. (Alsuiadi, 2015) Furthermore, the entire school community can have additional academic and recreational possibilities because of these amenities. (Ibrahim, Osman, Bachok, & Mohamed, 2015)

Since children spend about 1/3 of the day at school, it is important that schools have initiatives to increase physical activity. Furthermore, research has demonstrated that physical activity in schools should be included not only during physical education classes but also during breaks to benefit kids' general health, social well-being, and academic achievement.

This is an actual issue throughout Macedonia, but this research takes place mainly in the city of Tetovo, to observe the correlation between the sports facilities of schools and the impact on the lives of children and the community in general.

2. Obesity in North Macedonia and its disadvantages

A very big concern in recent years is obesity, which according to studies has increased tenfold in the last 40 years. (Raufi & Konstantinova, 2022). This comes as a result of:

- The availability of unhealthy food at elementary schools and nearby areas
- Children's financial capacity to buy unhealthy meals outside of the house
- Absence of opportunities for physical activity in schools (Bianchi, 2021)

In a study by UNICEF, a continuous increase in obesity is seen from 1990 to 2017, and according to forecasts, this figure will continue to increase in the following years.

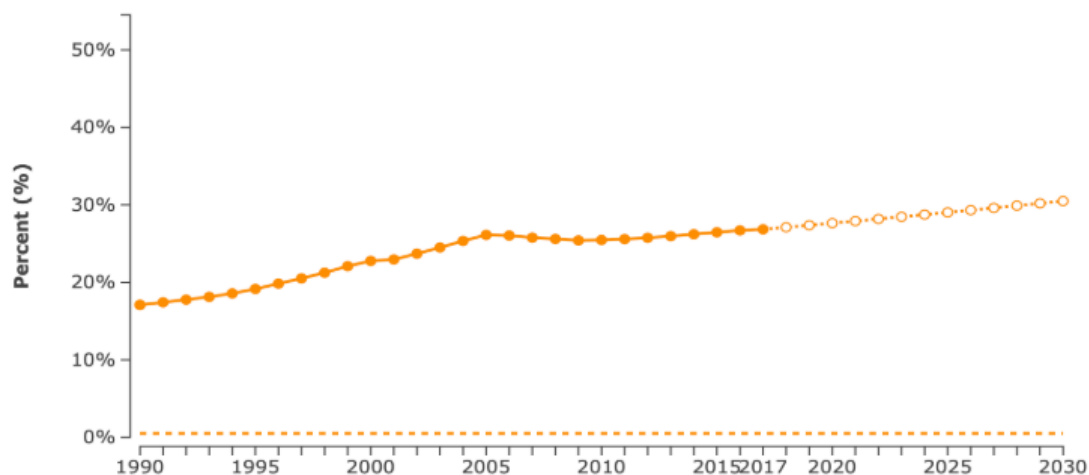


Figure 1. Prevalence of child overweight, North Macedonia, 1990-2017 and projections to 2030 (source: IHME 2020, https://www.unicef.org/northmacedonia/media/10511/file/mkd_report_childhood_obesity_2021.pdf)

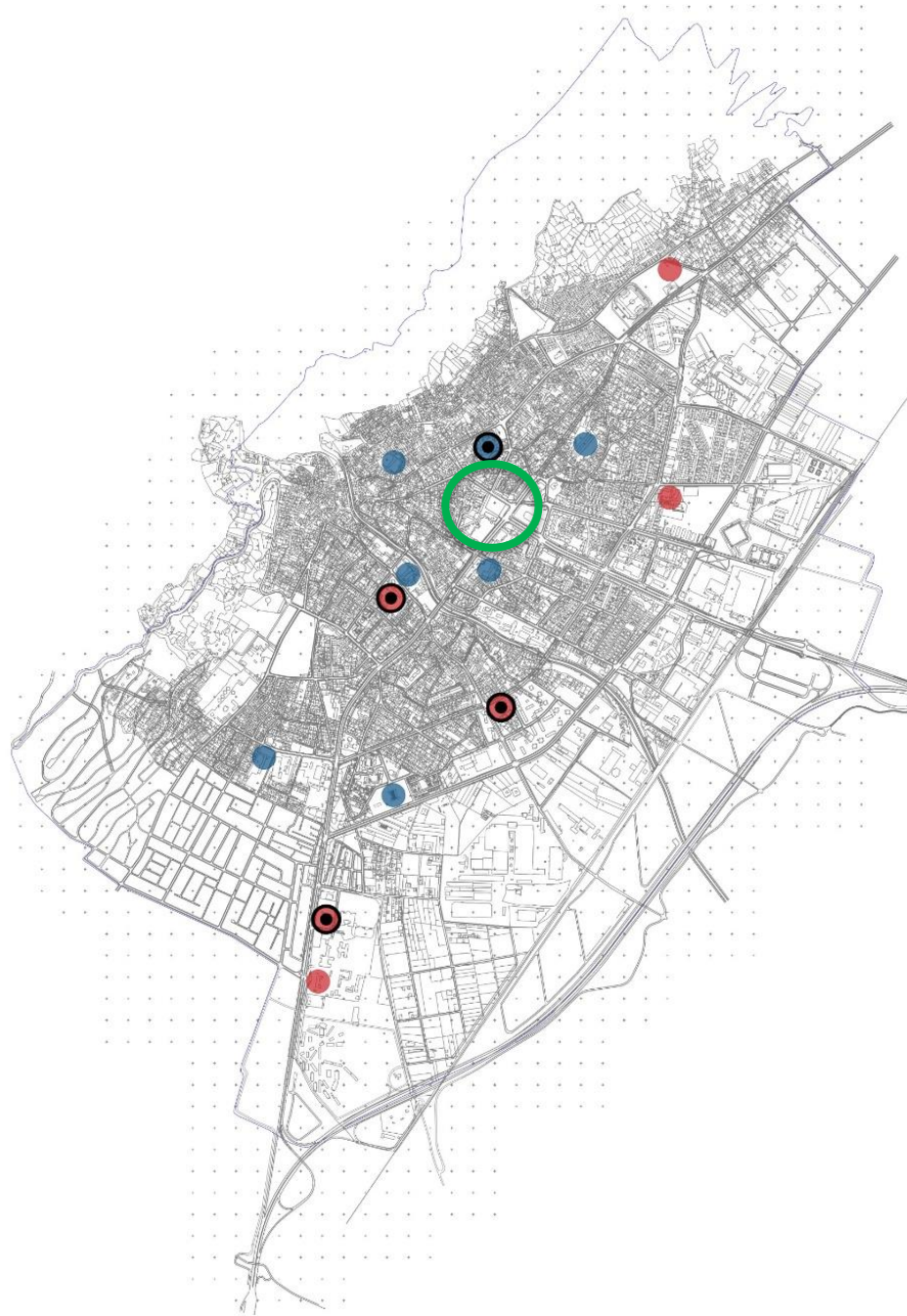
According to (Bianchi, 2021) “Children who are obese can experience many physical health issues such as type 2 diabetes, respiratory, cardiovascular, hepatic, and orthopedic issues. Negative psychosocial consequences, including sleep difficulties, low self-esteem, depression, social isolation, and a lower quality of life, can exacerbate physical health issues.”

Several studies demonstrate the advantages of physical activity; some mention that “it lowers the chance of having a cerebrovascular accident, lowers the risk of hypertension, lowers rates of anxiety, stress, and depression, boosts confidence and self-esteem.” Moreover, some studies have shown that efforts to lessen juvenile aggression and risky behavior, such drug use, must start with persistent practice. It's also crucial to remember that people who exercise regularly typically have happier and more fulfilled lives than people who don't. (Bianchi, 2021)

For all these reasons, it is justified that training and, therefore, the creation and use of sports facilities is a good resource that helps children to maintain a good state of health and reduce risk factors. But above all, these spaces should be accessible and welcoming for all. (Ibraimi & Merxhani, 2023)

3. School sports facilities in Tetovo

Tetovo is a city with 84,770 inhabitants located in the northwestern part of North Macedonia. In the city of Tetovo there are 13 schools, 7 primary schools and 6 secondary. The number of students in these schools varies from 300 to 2000 students. The schools are distributed in different areas of the city, as can be seen in the picture below.



- PRIMARY SCHOOL
- SECONDARY SCHOOL
- SPORT FACILITIES

Figure 2. Schools and schools sport facilities in Tetovo

Sports spaces in schools are extremely important, as in the past and today. (Pawlikowska-Piechotka, 2021) However at the time when schools were built, appropriate sport facilities were often not constructed, for economic or other reasons. As can be seen from the graph, only four schools have sports halls, out of which only one Primary school:

- Goce Delcev,
- and 3 Secondary schools:
- Gjoce Stojcevski
 - Gymnasium Kiril Pejcinovic
 - Medical Highschool Nikola Stein.

To be able to use each other's sports halls seems to be impractical, since the schools are separated by significant distances. Only in the scenario highlighted in green, between primary school Istikbal and Gymnasium Kiril Pejcinovic, but even in this case, due to the difference in the age groups of the students, the cooperation might not be very suitable.

According to these results, it is assumed that the lack of sports spaces in schools negatively affects not only the well-being of students, but also the local community in general. School is a core of the community, its facilities should meet community expectations, because these facilities can provide extra learning and leisure opportunities by:

- Arranging sports tournaments and competitions for community.
- Offering sports program for children and young people.
- Offering venues for community gatherings and festivities.
- Encouraging social connections and cultural exchange. (McIlveen, 2014)

For this reason, bearing in mind that sports spaces in schools are not only important for students but also for the community in general, in the remaining part of our research, survey questionnaires were distributed to three focus groups, which are explained in the following chapter.

4. Survey questionnaire results

For the purpose of this research, about 100 people were surveyed, who were divided into three target groups:

School administration and PE teachers (11%), Parents of students and students (37%) and Local community (52%).

4.1 School administration and PE teachers survey: The questionnaire for this target group is divided into two subgroups: a questionnaire for schools with sports halls and a questionnaire for schools without sports halls. The questionnaire for schools with sports halls contains 10 questions, of which 8 are multi-choice questions, while two are open-ended questions. The questionnaire for schools that do not have sports halls contains 12 questions, of which 8 are multi-choice questions, while 4 are multiple-choice questions.

These surveys were constructed to learn more about the value of sports facilities in the teaching process, how teachers manage the classes in schools where there are no sport halls, how are the conditions in the existing sports facilities.

All respondents evaluate the presence of sports halls in schools as very important for the process of teaching, the teachers in schools where there are sport halls report this facilitates their work, while teachers in schools where there are no sports halls complain that it makes their work extremely difficult; on sunny days the sports activities take place outside in nature, but when it rains, they are forced to continue with lessons in the classroom. Due to the lack of changing rooms, students are forced to dress up in class, or to stay for hours in sweaty clothes after physical activities.

However, even in the schools where there are sport halls, the quality of the facility is perceived as average, in some of the schools, even though there are changing rooms, there are no showers and adequate sanitary facilities, as well as stands for spectators that hinder the participation of the spectators.

According to the administration of the schools that have halls the interest in using the sports hall is great both from the residents who live nearby and from the sports clubs, however, some conditions must be improved in order for the facility to meet the needs of the community.

According to the administration of the schools that don't have halls, at the moment there is no agreement where students can use the sports halls of nearby schools, if there was one, they would be obligated to pay for such services. The teachers and management staff believe that

the presence of sports halls would help not only for the completion of classes but also for the organization of sports tournaments and many other activities.

The respondents also had the opportunity to leave comments about this topic and they expressed as follows:

“Sports spaces in schools are essential for the development of children's physical and mental health. The improvement of these spaces, such as the construction of modern fields, the provision of quality sports equipment and the creation of safe environments, will encourage greater participation of students in physical activities and will contribute to a healthier lifestyle.”

– *Teacher 1*

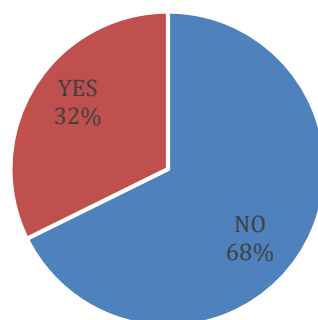
“Investment in modern infrastructure is important, training and qualification of physical education teachers, safety and maintenance, diversification of types of sports...” – *Teacher 2*

In general, school administration and PE teachers support the idea that the community should be more involved in the activities that take place in these facilities.

4.2 Parents of students and students survey

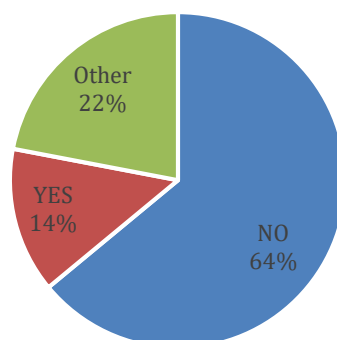
The questionnaire for this target group consists of 9 questions, of which 7 are multi-choice questions and 2 open ended questions. As for the parents surveyed, about 68 % answered that their children's schools do not have sports facilities.

Are there sports halls in the schools that your children attend?



Graph 1. Answers to question number 2 from Parents of students and students survey

Are children satisfied with the quantity and quality of sports activities at school?



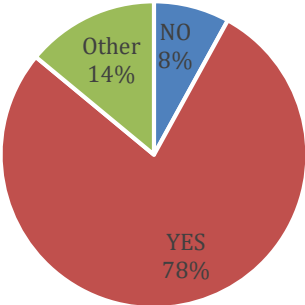
Graph 2. Answers to question number 3 from Parents of students and students survey

When asked if they were happy with the sports programme at school, only 14% of the students said they were, 64% said they weren't, and some of the kids expressed that because of their overweight they stopped participating in physical education activities because they thought they would be teased by their classmates, felt incapable of doing certain exercises, or thought they would look foolish attempting out certain exercises.

Students believed that if the recess wasn't too short, they might arrange games involving physical activity, but they currently use the break to get snacks from the nearby stores.

When asked whether they engage children in private sports activities, about 78% of parents claim that they do, 8% do not, while the rest said that they want to, but are sometimes limited due to economic conditions.

Do children participate in private training if schools lack sports halls?



Graph 3. Answers to question number 4 from Parents of students and students survey

One of the open-ended questions was how important they consider physical activity for their children's well-being and do they see an impact on the children's physical and mental health when they engage in sports activities. Some of the parents answered:

“Yes, the integration of physical activity in schools is essential for the healthy development and well-being of children, preparing them for an active and balanced life.” – *Parent 1*

“Yes, physical activities in schools have a very positive effect on the physical and mental health of children. Movement and exercise help develop the muscle and bone system, improve blood circulation and help control weight. In addition to the physical benefits, physical activities also have a positive effect on children's mental health. They can reduce stress and anxiety, improve mood and boost self-confidence.” – *Parent 2*

“Yes, physical activities in schools significantly affect the physical and mental health of children. Improving physical condition, Prevention of chronic diseases, reducing stress and anxiety, Improving focus and academic performance. In conclusion, physical activities in schools are essential for the full development of children.” – *Parent 3*

It is evident from these responses, that parents are aware of the importance of sports activities and the impact they have on the physical and mental health of children, so the next question was if they took into account the school's sports facilities when choosing schools for their children. 58% answered “yes”, 26% answered “no”, while the rest said that they usually choose the closest schools, moreover, taking into account that most schools do not have sports halls, it does not mean that you have a lot of choices left for selection.

Parents also offered some comments on the improvement and importance of sports halls in schools:

“If we want to have a youth and a bright future, we, as citizens of RMV, must definitely try to get more of our children involved in physical activities and the sports halls in every school must have large spaces and all the adequate equipment.” – *Parent 4*

“Schools should offer opportunities for a wide range of sports, including not only traditional sports such as football and basketball, but also other sports such as volleyball, tennis, swimming, and individual sports such as gymnastics and athletics.” – *Parent 5*

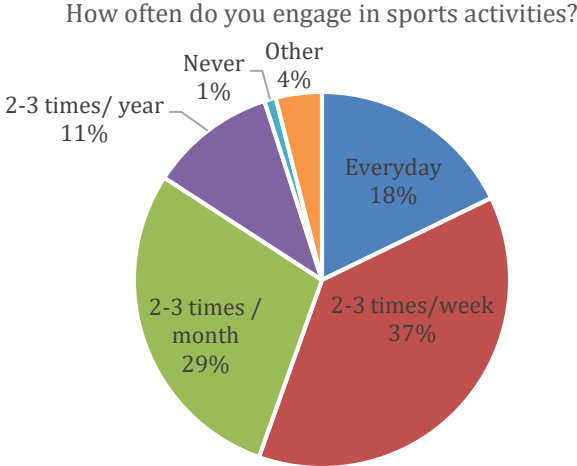
“Parents should insist on their demands for sports halls in all schools where their children study, because sport is more important for the psycho-physical and social development of children. Sports facilities in schools are often inadequate and with inadequate equipment, which limits participation and endangers the safety of students. Invest in quality sports equipment and make sure the spaces are well maintained and safe.” – *Parent 6*

All parents agreed that more should be invested in sports spaces for students. And all of them agreed to participate in physical activities for parents if the schools offered such opportunities.

4.3 Local community survey

In many countries in the world, programs or guidelines have been prepared on how to make sports halls more accessible to the community and not hinder the educational process. (McIlveen, 2014) Especially in modern schools, the community is given a lot of importance, but we tried to analyze the importance of the community in the schools in Tetovo according to the following questions. The questionnaires for the community consist of 9 questions, of which 7 are multi-choice questions and 2 questions with answers.

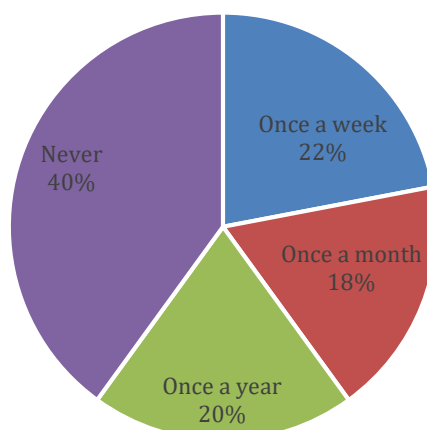
84.4% of respondents rate physical activity as very important when asked how much participating in sports activity affects their physical and mental health. Citizens were also asked about the level of physical activity they engage in and according to the results, 37% stated that they engage in 2-3 times a week, 18% every day, and only 1% did not play sports at all.



Graph 4. Answers to question number 2 from Local community survey

Regarding the impact of sports halls proximity on their desire to engage in activities, about 79.5 % voted yes, 16% no, while the rest stated that it depends on the person's personality and personal desire to engage in physical activities. There were similar answers regarding the conditions of the halls.

How often do you visit sports halls for different activities?



Graph 5. Answers to question number 6 from Local community survey

Citizens were asked what activities they would like to see more often in such spaces, they mainly answered with sports competitions and tournaments, but some wanted concerts or other cultural events, and some even expressed themselves in favor of educational activities.

When asked how their access to sports halls was possible, 69% answered they had to pay, 4% said they can enter for free as member of the clubs, 9% stated that they have no access at all.

In the question of how sports halls can be improved to meet the needs of the community, the respondents answered that as many halls as possible should be built and they should be designed according to standards, in order to meet their needs. The citizens are aware that the maintenance of the halls is a costly process and they express that they are ready to be more careful when using the spaces, but even to help the administration in this process. They also mentioned that it would be good if the price for attending the gyms was as low as possible, possibly even free of charge, in order to encourage more people to participate in sports activities. Most emphasized the need for all sports equipment and spaces to be flexible and accessible to all age groups.

5. Designing sport facilities for schools in Tetovo as flexible shared space

In continuation of this research, school building plots and their potential to build sports halls were also analyzed. According to the analysis, in almost all schools where there are no sports halls, there is enough space to build such facilities.

TABLE 1. SCHOOLS WITH NO SPORT HALLS IN TETOVO AND THEIR PLOT AREA

School	Kiril and Metodij	Naim Frasherij	Istikbal	Lirija	Bratstvo – Migjeni	Andrea Savevski – Kikish	Gymnasium 7 March	Mosha Pijade	Economic Highschool 8 September
Plot area	19117 m ²	6922 m ²	4277 m ²	5227 m ²	12524 m ²	6340 m ²	16886 m ²	31217 m ²	4761 m ²



Figure 3. Schools that have potential for sport facilities in Tetovo

However, when designing school sports halls that will be open to the community, it is essential to consider the various activities that can be organized and that the educational process is not hindered, for that it is important to build flexible spaces that have a clear flow of movements for students and the community.

There has been some research (Wen, Chen, Lai, & Wang, 2023) (Jeri Brittin, Trowbridge, Lee, Breithecker, & Huang, 2015) that suggests how such objects can be designed, where among the most prominent suggestions are:

- Movable panels and moderate lighting so that sport hall can be divided into several units and there can take place different activities at the same time.
- Sufficient storage, necessary for a broad range of fixtures and equipment in flexible spaces.
- School sports facilities when used for school exhibitions or other community activities, must ensure that sports flooring is protected.
- Zoning. We must be very careful with movement and zoning in buildings, so that school and community users are separated for safety reasons, but it is also good to create areas where joint use is allowed.
- If the size of the building allows, providing spectator seating for school competitions and community events.

Conclusions

From field studies and surveys, it was noticed that most schools in Tetovo lack sports halls, this affects the teaching process extremely, forcing teachers to use classrooms in times of difficult weather. Dissatisfaction with this was numerous on the part of parents and students, who say that this reduces the level of physical activity of students, which in turn damages their health. Most parents, aware of the importance of sports activities, have engaged their children in private training, but a significant number of parents could not afford this financially. Even the local community expresses the desire to visit more sports halls, whether for sports activities but also for cultural or educational activities. The community even states that they are ready to help in the maintenance of these spaces, if free access would be possible for them.

Regarding the architecture of the buildings, even in schools where there are sports halls, the employees state that the quality is average. Although there are changing rooms for students, there are no showers and many other necessary spaces for both students and the community. Along with the necessity to build new halls, there was also a need to improve the current ones. Analyzing the plots of school facilities, it was concluded that most of these schools have room to build sports facilities, which designed according to standards would be useful for the school and the local community. To ensure that school sport facilities can accommodate a variety of events, flexibility in the design is essential. Suggestions for improving the design include flexible layout with panels that can be moved, sufficient storage space, designated areas for school and community activities and sports flooring that is protected.

Ultimately, it is crucial to invest in well-planned and adaptable sports facilities within the schools of Tetovo in order to enhance the physical well-being of students and promote involvement within the community.

References

- [1]. Alsuiadi, F. A. (2015). Effect of the School Facilities Factor and Sport Activities Factor on Parents in terms of Private and Public School Choice at Riyadh City Saudi Arabia. *Universal Journal of Educational Research*, 1054-1069.
- [2]. Bianchi, F. (2021). Applying behavioural insights to tackle childhood obesity in North Macedonia. Skopje: UNICEF.
- [3]. Dehari, F., Ibraimi, F., & Murati, H. (2022). CHALLENGES OF DESIGNING PRIMARY SCHOOL GROUNDS IN NORTH MACEDONIA. *JAS SUT*, 78-94.
- [4]. England, S. (2007). *Designing for Sport on schools sites*. London: Sport England.
- [5]. Ibrahim, N. M., Osman, M. M., Bachok, S., & Mohamed, M. Z. (2015). Assessment on the Condition of School Facilities: Case study of the selected public schools in Gombak district. *Procedia - Social and Behavioral Sciences*, 228-234.
- [6]. Ibraimi, F., & Merxhani, H. (2023). STRIVING FOR INCLUSION: ANALYSIS AND EVALUATION OF URBAN PUBLIC SPACES IN TETOVO. 95-110: *JAS SUT*.
- [7]. Ibraimi, F., & Saliu, N. (2021). Understanding inclusive education and its impact on architecture. *JAS-SUT*, 34-45.
- [8]. Jeri Brittin, S. D., Trowbridge, M., Lee, K. K., Breithecker, D. F., & Huang, T. (2015). *Physical Activity Design Guidelines for School Architecture*. Pubmed central .
- [9]. McIlveen, S. (2014). *Your School, Your Club- A Practical Guide to Achieving Community Use of School Sports Facilities*. Belfast: Sport Northern Ireland.
- [10]. Pawlikowska-Piechotka, A. (2021). Sport facilities and their social meaning – in the past and present . *Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe*, 125-136.
- [11]. Wen, H., Chen, S., Lai, J., & Wang, J. (2023). Study on the Optimization of Spatial Layout of Public Sports Facilities in Urban Communities—A Case Study of Xiangshan Street Community in Shenzhen. *Frontiers in Sport Research*, 39-46.