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Transport Disadvantage and Extracurricular Activities: the Example of Secondary School Students of the City of Zagreb

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1 ABSTRACT

Nowadays, transport disadvantage is outspread phenomenon. It can influence people's needs and opportunities. Young people are considered transport disadvantaged part of the society. Secondary school students are young people with a great need for mobility but still, their mobility is also limited. Their dependence on other people in the aspect of transportation and public transportation greatly influence their everyday lives. Important segment of young people's lives are extracurricular activities. The aim of this paper is to investigate the impact of transport disadvantage on extracurricular activities of secondary school students of the City of Zagreb. Particular emphasis is on the difficulties in accessibility of extracurricular activities and how transport influences these activities. Research was conducted using quantitative and qualitative methods. The data were obtained through questionnaire survey of 826 secondary school students of secondary schools of the City of Zagreb. In order to deepen the research, interviews were performed through eight focus groups. Data analysis revealed that almost half of secondary school students involved in extracurricular activities expressed the attitude of having difficulties with accessibility of extracurricular activities and that over half of secondary school students involved in extracurricular activities responded that transport had impact on these activities. Significant correlations between the attitude of problem existence with accessibility of extracurricular activities and travel time needed to reach them, as well as between travel time to extracurricular activities and attitudes on the impact of transport on these activities were found. The existence of students not able to participate in extracurricular activities because of transportation was determined. All the results were supported by states collected through focus group research.

Keywords: mobility, city of Zagreb, secondary school students, extracurricular activities, transport disadvantage

2 INTRODUCTION

Today, extracurricular activities are considered as a valuable segment of young people's life by improving personal qualities. Young people who want and have the opportunity (primarily financial, but also time), can spend their time on various extracurricular activities, such as sports training, foreign language school, music school and other cultural, educational, sports and religious sections. Some authors emphasize multiple benefits of extracurricular activities. Students' involvement in those activities has an important role in developing good personal characteristics that could help later in life to avoid delinquent behaviour (Han et al., 2017). Also, participation in extracurricular activities helps students to discover, nurture and foster their talents and to develop personal character and competences. In addition, extracurricular activities could enrich students' experience, help to cope with stress, increase their employability and positively impact students' academic achievement (Siljkovic et al., 2007; Al-Ansari et al., 2016). In many cases, extracurricular activities are not near the place of residence, so attendance creates a need for travelling. For this reason, this segment of their life is also important for broader research, especially in the context of improvements, both transport and social policy.

Mobility and accessibility are the fundamental requirements of today's society (Hoyle and Knowles, 1998). People are transport disadvantaged if their mobility and accessibility are limited or impossible (Yigitcanlar et al., 2010; Rosier and McDonald, 2011; Gasparovic, 2016). Not owning, or not being able to drive a car (due to legal or other restrictions) is often listed as the main factor leading to transport disadvantage (Murray and Davis, 2001; Clifton and Lucas, 2004). There are also other factors involved, such as financial status and physical characteristics (such as gender or disability). Young people are often considered as transport disadvantaged social group (e.g. Murray and Davis, 2001; Stanley and Stanley, 2004; Dodson et al., 2004; Hurni, 2006; Hurni, 2007). Secondary school students (15 to 18 years old) are considered as the most exposed because they almost always have greater need for mobility and require to travel a longer distance to their school and leisure time activities than younger children (Fyhri and Hjorthol, 2009; Hopkins, 2010; Horton et al., 2011), therefore, secondary school students are in focus of this paper.

There are not many papers with focus on youth and transport disadvantage. This particularly applies to the relationship between extracurricular activities and transport, or transport disadvantage, as emphasized by some authors (e.g. Fyhri and Hjorthol, 2009; Lin and Yu, 2011). This is also the motive behind this work. Nevertheless, some of the papers study the interrelationship between transport and extracurricular activities, thereby indirectly studying the transport disadvantage. McWhannell and Braunholtz (2002) stressed that availability and the cost of public transport services influence children's choices of the type and timing of the extracurricular activities. Johansson (2006) examined mode choice for organized extracurricular activities among Swedish children. Tal and Handy (2008) examined influences on the mode choice of children attending football extracurricular activity. Winter (1994), Cullinane and Stokes (1998) and SEU (2003) found transport as a key factor that disables the youth in accessing educational opportunities, extracurricular activities, free time and social interactions. Currie (2007) stressed out that the problems of accessibility to educational activities, extracurricular activities and social interactions were most difficult for the youth living at the city periphery and in the rural areas.

3 METHODOLOGY

This research is based on the methods of surveying and interviewing. Before the main survey, a pre-test survey was performed to test the theoretical and empirical validity, reliability and applicability of the questions in the main questionnaire (suggested by Cohen et al., 2007). Main survey was conducted in seven secondary schools in the City of Zagreb. A total of 1053 students were surveyed (3% of the total number of secondary school students of the City of Zagreb). After the questionnaires were processed, 826 students remained (only students having residence in the City of Zagreb and students without a driver's licence were included). The survey lasted about 30 minutes. The questionnaire provided, among other issues, general information on the participants, as well as attitudes and opinions about the extracurricular activities, transport mode and travel time. The questionnaire provided students' opinions about difficulties with accessibility of extracurricular activities, about the impact of transport on their extracurricular activities, as well as about the problems they might experience due to transport when travelling to and from extracurricular activities.

In order to obtain in-depth information, this research also included focus groups interviews. Interviews were conducted in two secondary schools in the City of Zagreb within 8 focus groups. In each school, students were divided into four groups (8 to 10 students in each group) based on their age and gender. Group I consisted of female students in years 1 and 2. Group II consisted of male students in years 1 and 2. Group III consisted of female students in years 3 and 4, and Group IV of male students in years 3 and 4. Within each group, the dichotomy based on students' living location was pronounced (half of students living near the city centre and half living closer the city periphery). Interviews were performed in the presence the voice recorder, and the whole conversation with a particular group was recorded and then transcribed.

Although all students travelled to their extracurricular activities from their homes, it has been found during the research that in certain situations there were students attending their extracurricular activities not only from their homes, but also before or after school or, before or after some other extracurricular activity. In order to simplify data collection and analysis, the questionnaire examined only travelling from home to extracurricular activity since such a situation was present in majority of students. Also, in case of students attending several extracurricular activities, only one and the most distant activity was taken into consideration. In addition, it was decided that only one-way travel time (from their home to extracurricular activity) would be considered and it was assumed that the same time was needed to travel from extracurricular activity to home (preliminary studies showed no major deviations regarding the time that students needed to travel from their home to extracurricular activities and from extracurricular activities to home). Preliminary research showed that students usually used the same transport mode when they travelled to the extracurricular activity and back the home, therefore use of transport modes in one way (from their home to extracurricular activities) was investigated.

The Code of Ethics of Research with Children (2003) was fully abided by (suggested by Cohen et al., 2007). A permission for the research was obtained from the Ministry of Science, Education and Sport of the Republic of Croatia, from the principal of each school and (for interviewing) from students' parents. The survey was anonymous and voluntary.

The software SPSS Statistics 20.0 was used for data processing. Statistical correlation method (Pearson and Spearman correlation coefficient) and simple mathematical operations were used in this research. Spatial

analysis was performed using the GIS software ArcInfo 10. As a basis for spatial analysis, data from the questionnaire was used, most preferably the address of the student. Spatial coordinates of student addresses are taken from the "Digital Orthophoto Layer 2012" (DOF 2012) of the GeoPortal of the "Zagreb Spatial Data Infrastructure" (City of Zagreb, 2012).

4 RESULTS AND DISCUSSION

Since attending extracurricular activities depends on different subjective and objective factors (e.g. motivation of a child, financial status of a family, etc.), survey found that 380 students attended this type of activity.

Students mostly used public transport to reach extracurricular activities (Table 1). They also travelled on foot or by bicycle (32.4%), which indicated that one third of students participated in extracurricular activities in the relative vicinity of their home. Also, less than 10% of students were taken by car by their parents or friends even though they had the possibility of using public transport. Use of other forms of transportation was negligible. The problems that students encountered while travelling were generally conditioned by the way of travelling (i.e. transport mode) to extracurricular activities.

Transport mode	Extracurricular activities	
	Number	Share (in %)
On foot, by bicycle	123	32.3
Taxi due to comfort and simplicity	1	0.3
Car, though they had the possibility of using public transport	33	8.7
Public transport	222	58.4
Car or taxi because they had no possibility of using public transport	1	0.3
Some other way	0	0
Total	380	100

Table 1: Travel needs of secondary school population in the City of Zagreb regarding the extracurricular activities (Source: survey).

Transport mode	Number of students participating in extracurricular activities	Number of students encountered difficulties with accessibility	Share (in %)
On foot, by bicycle	123	15	12.2
Taxi due to comfort and simplicity	1	0	0
Car, though they had the possibility of using public transport	33	15	45.5
Public transport	222	158	71.2
Car or taxi because they had no possibility of using public transport	1	1	100
Some other way	0	0	0
Total	380	189	49.7

Table 2: Relation between number of students participating in extracurricular activities and number of students encountered difficulties with accessibility of extracurricular activities (Source: survey).

Out of a total of 695 students who had opinion that they had transport-based difficulties with the accessibility of everyday activities due to transport, slightly more than 1/4 (27.2% or 189) of students thought that they had transport-based difficulties with the accessibility of extracurricular activities. Given that 380 students participated in extracurricular activities, it was a share of almost 50% (49.7%). Most of the problems students experienced travelling to extracurricular activities by public transport. Thus, more than 70% (71.2%) of students using public transport to reach their extracurricular activities stated that they had difficulties accessing extracurricular activities due to transport. Surprisingly, students who travelled to extracurricular activities by car claimed to have a big problem (they were driven by someone else, although they had the possibility to use public transport). Almost 50% (45.5%) of such students stated to have

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problems with the accessibility of extracurricular activities. This indicated that traffic jams affected accessibility, and thus was likely to increase the travel time to extracurricular activities. A little more than a ten percent of students (12.2%) attending extracurricular activities on foot or by bicycle expressed their attitude that transport affected accessibility of extracurricular activities.

Problems of access to life activities can also occur due to the time distance between residence location and the location of extracurricular activities. In regard to this issue, it was necessary to investigate how travel time to extracurricular activities had influenced the opinion of secondary school students about the existence of transport-based difficulties in accessing extracurricular activities. For this purpose, analysis of students who expressed attitude of the existence of problems with the accessibility of extracurricular activities was conducted. The obtained result indicated a slight, but statistically significant correlation between the opinion of having problems with the accessibility of extracurricular activities and the travel time (= -0.169; $p < 0.05$).[1] This is a slight, but statistically significant correlation, nevertheless it is obvious that it appeared systematically and as such, it may suggest that students travelling longer to their extracurricular activities encountered more often transport-based problems related to accessibility of extracurricular activities. This opened the possibility about a problem of extracurricular activities accessibility due to the distance.

The aforementioned analysis referred to the attitude of (non)existence of transport-based problems with the accessibility of extracurricular activities. However, it should be noted that transport, as a complex link between the origin and the destination, can have an impact (positive or negative) on a particular activity, so it was of interest to investigate how transport affected extracurricular activities. In order to investigate this issue, students' opinion about the transport problems encountered with regard to extracurricular activities were examined (Table 3). Although one might expected a higher share, slightly over half of the students (52.1%) who attended some form of extracurricular activity believed that transport affected the realization of extracurricular activities. The reason for this was the fact that students chose extracurricular activities that were located closer to their home. Two thirds of the students (67.2%) thought that transport rare (poor) or occasionally (moderate) affected extracurricular activities, while 32.8% of students thought that transport often (high) or almost always (very high) affected extracurricular activities.

Frequency/strength of the influence	Number of students	Share (in %)
Influence	198	52.1
Rare / poor	58	29.3
Occasionally / moderate	75	37.9
Often / high	47	23.7
Almost always / very high	18	9.1
No influence	182	47.9
Total	380	100

Table 3: Frequency and strength of the influence of transport on the extracurricular activities of secondary school students (Source: survey).

Distance to some activity may impact on the realization of the activity. Within this context, the relationship between the travel time to the location of the students' extracurricular activities and their opinion about the impact of transport on these activities was analysed. The obtained results showed correlation between these variables. Accordingly, it can be seen how opinion of students regarding the frequency/strength of impact of transport on extracurricular activities increased with the travel time needed to reach the activity (= 0.228, $p < 0.01$).[2] Students who spent more time travelling to the venue of the extracurricular activity claimed that transport more often and stronger influenced extracurricular activities when compared to students who spent less time travelling to these activities. This was slight, but statistically significant correlation indicating the possibility that the distance influenced the everyday life in a negative context. The result can be interpreted

[1] Variables related to the attitude on the existence of transport-based problems with the accessibility of specific activities are coded as follows: 1 – Yes, almost always (couple of times per week); 2 – Yes, often (once to twice per week); 3 – Sometimes (couple of times per month); 4 – Rarely (couple of times per year); 5 – Never.

[2] Variables related to the assessment of the frequency of influence of transport on specific activities are coded as follows: 1 – No influence; 2 – Poor influence / rarely influences; 3 – Moderate influence / occasionally influences; 4 – High influence / often influences; 5 – Very high influence / almost always influences.

as an assumption that students travelling longer to extracurricular activities had more problems with these activities in relation to students living closer to extracurricular activities.

Either I arrive too early or I late. The trams run great, but the buses could be more frequent. When I have a training at 4 (16 h), I have to leave home at 2:15 (14:15) because of the bus.

[How much time do you need to reach extracurricular activities?]

About an hour. (female student, 16 years, Sestine)

I'm training tennis and by the tram I would need 45 minutes to reach Velesajam. Then my coach who lives close drives me and I need 15-20 minutes to get there. (mal student, 18 years, Maksimir)

Transport did not affect attendance of extracurricular activities for students who had extracurricular activities close to their homes, especially if they were within walking distance radius.

Training venue is close to my home, so it (transport) doesn't affect it.

[How far is it?]

15 minutes on foot. (female student, 15 years, Kvaternik Square)

It (transport) doesn't affect it, because my extracurricular activity is 5 minutes far away. (female student, 15 years, Savica)

In case of students who had opinion that transport affected their extracurricular activities, the reasons for its impact were different, with some factors standing out (Table 4).

Way of influence	Number of students	Share
Late to extracurricular activities	73	36.9
Loss of time	53	26.8
Frequency of public transport	44	22.2
Traffic jams	18	9.1
Weather conditions	4	2.0
Bicycle paths	2	1.0
Organization of public transport system	2	1.0
Price of the public transport system	1	0.5
Help with studying	1	0.5
Total	198	100

Table 4: Ways in which transport influenced the extracurricular activities of students (Source: survey).

The most significant impact of transport on students' extracurricular activities was reflected through being late (36.9%). Frequent traffic jams and inadequate frequencies of public transport were the most common reasons for this problem.

If we are late for a tram, then we are late for English. (female student, 17 years, Sveti Duh)

Time loss due to travel (26.8%) was another major problem. The reason was often traffic jams or public transport frequencies.

Yes, transport affects my trainings. I have them in Martinovka and it takes about an hour or so to get there, and by car I would reach it for 15 minutes. When I go from school I always miss the bus to Kvatric, and until I reach Kvatric, I wait for the ''five'' (tram no. 5) that goes every 10-15 minutes and until I get to Martinovka it takes almost an hour. That's frustrating. (male student, 18 years, Kozjak)

Students using public transport sometimes had problems with its frequency (22.2%). This was due to the lack of harmonization of public transport in relation to extracurricular activities that take place through the whole day. This problem certainly had an impact on the organization of travelling to extracurricular activities, as well as the delay in their performance.

I go to drawing course at Zrinjevac Square. The problem is that the buses are rare, e.g. lines that go to Kvatric or Kaptol. They should be more frequent. (female student, 16 years, Kozjak)

It affects my extracurricular activities because of bus schedules. I live in Malesnica and go to Crnomerec and wait for another bus for 20 minutes. And if there's some jam, and usually it is, then I'm late almost every time. (male student, 18 years, Malesnica)

Traffic jams caused many other problems, and students sometimes distinguished it as a separate problem (9.1%). This resulted in delays in extracurricular activities and additional travel time loss.

I'm late sometimes if I get into some traffic jam. The tram stops often at Vlaska Street, especially in the afternoon when people come back from work.(male student, 18 years, Maksimir)

Weather conditions also caused traffic problems thereby affecting extracurricular activities (2%). They were most prominent in winter or during rainy weather.

This affects my extracurricular activities. I have trained majorettes until recently and sometimes I was late when it was bad weather because of traffic jams and crowds. (female student, 18 years, Trnava)

Problems that affected to a lesser extent were lack of bicycle paths, organization of public transport (lack of direct connection between certain parts of the city, e.g. Stenjevac and Jarun) and the price of transport tickets if student had to use additional public transport carrier (e.g. Croatian Railways or some carriers driving outside the City of Zagreb, such as Samoborcek).

It is interesting that some students spent time travelling for studying or repeating school or extracurricular learning materials.

I use travelling to learn. I travel to my extracurricular activity for an hour or so, so I like to use it for beneficial. (female student, 18 years, Dubrava)

It has already been pointed out that 380 students participated in extracurricular activities, while 446 did not participate. The reasons for their non-participation were different, but there were also students who did not participate in extracurricular activities due to transport. Such students were in a particularly vulnerable position and were significantly transport disadvantaged.

I attended German courses until last year. Now, I can't attend 'cause I need half an hour to reach the course and I lose my learning time. And I lose quite a lot of time for it. (female student, 15 years, Retkovec)

I don't go to extracurricular activities because our bus goes every 45 minutes and if I'm late at 11 o'clock (23:00) I have to wait for the bus at 15 to 12 (23:45) and I'm scared to go so late to home, mom and dad are already sleeping. (female student, 15 years, Sesvete)

The total number of such students was 33, being 7.4% of the total number of students who did not attend any extracurricular activities, and 4.0% of the total number of all surveyed students. The main reasons for this situation were the time and/or spatial component (Table 5). Students thought that they would lose too much time for travelling and therefore, they would have to ignore other obligations. The common reason was great distance to extracurricular activities. Dependence on public transport and the inability to rely on others for transportation was reflected in the frequency of its occurrence. For those students, public transport operated too rarely, or they did not have the possibility of return home in the evening due to early termination of public transport. The poorer connectivity of certain parts of the city and the spatial distribution of public transport lines and stations within the organization of public transport also affected the ability to attend extracurricular activities.

Reasons	Number of students	Share (in %)
Loss of time	14	42.4
Great distance	10	30.3
Frequency of public transport	5	15.2
Organization of public transport system	4	12.1
Total	33	100

Table 5: Reasons for the inability to participate in the extracurricular activities due to transport (Source: survey).

For the named reasons it was also necessary to determine the spatial aspect of highly disadvantaged students, namely those, who could not attend extracurricular activities because of transport. Figure 1 shows that the vast majority of these students lived in neighbourhoods away from the city centre. It has to be noticed that most of these students lived in the southern part of the City of Zagreb, which is highly disadvantaged part of

the City. These are the parts of the city where public transport operates less frequently than in wider city centre. There were students from the sub mountainous area of Zagreb, as well as from the far west and far east of the City, the parts usually characterized with lower number of public transport lines.

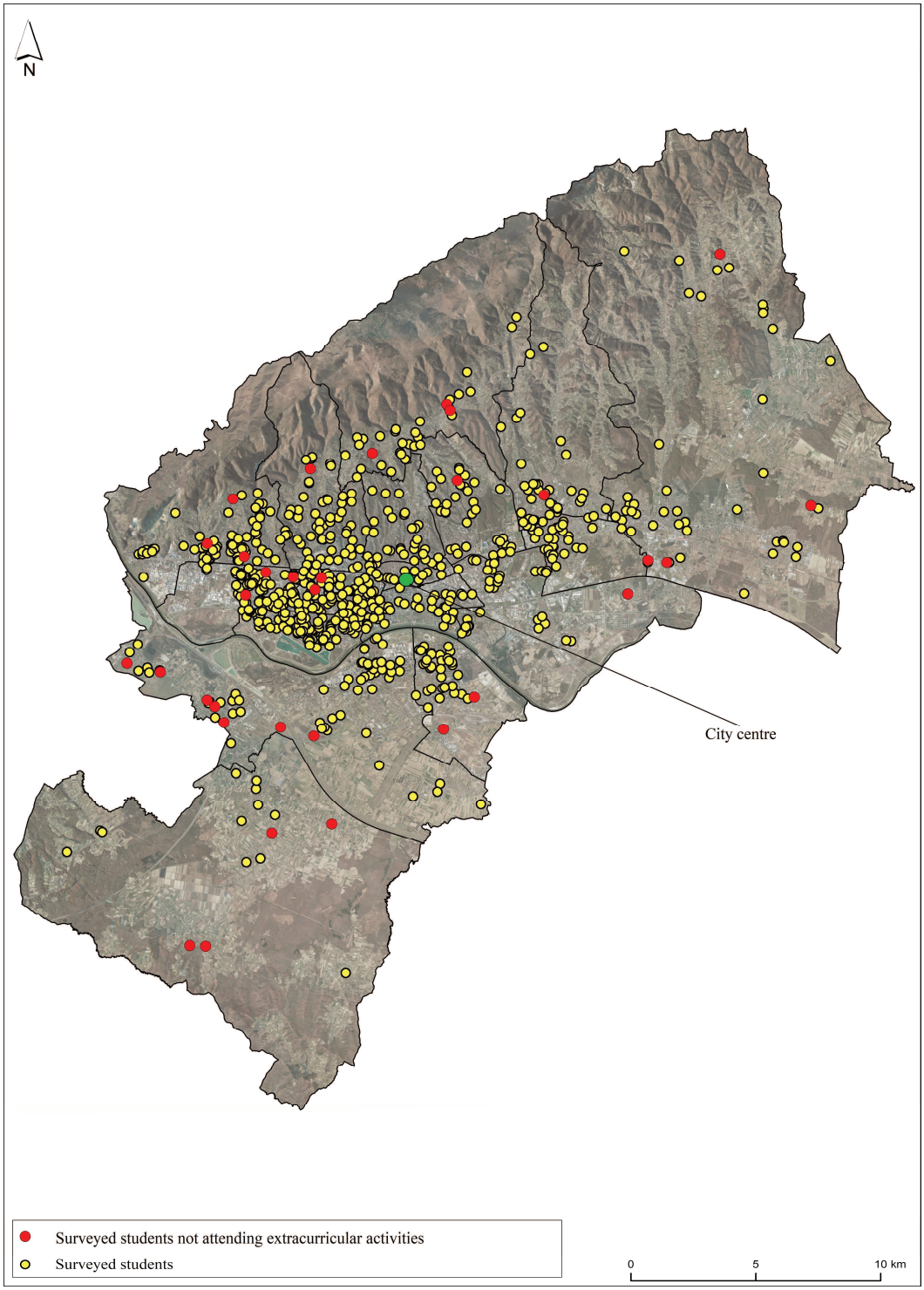

Fig. 1: Spatial distribution of secondary school students in the City of Zagreb unable to attend extracurricular activities because of transportation (Source: survey; DOF, 2012).

It has already been mentioned that transport could affect people's social interaction. It can be assumed that participation in some activities could increase the intensity of social interactions, and thus increase the number of friends. Therefore, it was of interest to investigate whether the participation in extracurricular activities affected students' social interactions and whether there was a difference between students who participated in extracurricular activities and the ones who did not participate due of transport. As a variable defining the intensity of social interaction, a number of good (close) friends was taken. Firstly, the relationship between engagement in extracurricular activities and the number of good friends was explored.

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All the surveyed students were included in the analysis, meaning that the students that did not participate in extracurricular activities were also analysed. Correlation analysis showed that there was no statistically significant correlation between (non)attending extracurricular activities and the number of close friends ($r = 0.018$; $p > 0.05$).[3] On the other hand, if the analysis of the relationship between the weekly attendance of extracurricular activities and the number of good friends included only students engaged in the extracurricular activities, there was a slight but statistically significant correlation between these two variables ($r = 0.150$; $p < 0.01$). It can be assumed that students who attended extracurricular activities several times a week also had a greater number of good friends as friendships could be strengthen by more frequent attendance. Taken this fact into consideration, it was assumed that students who did not attend extracurricular activities because of transport had fewer good friends than those who attended these activities. For this purpose, data on the number of good friends between these two groups of students were compared, but there was no statistically significant correlation ($r = -0.060$; $p > 0.05$). The average number of good friends of students attending extracurricular activities was 7.2. The number of good friends of students who were not attending extracurricular activities due to transport was slightly higher and is 8.5, which may be the result of the student sample being examined. However, it is indicative that 23 out of 33 students (70%) who did not attend extracurricular activities had number of good friends below the average in comparison to students who attended extracurricular activities. Therefore, there were indications that there was a correlation between social interactions, i.e. the number of good friends and attending activities (in this case extracurricular activities). Still, the obtained sample of students not participating in the extracurricular activities because of transport was too small, thereby limiting the use of correlation analysis. They lived in the periphery of the City of Zagreb, so the aforementioned facts were a pledge for a potential future study of the impact of transport on extracurricular activities in specific city neighbourhoods with special emphasis on the peripheral areas of the city.

5 CONCLUSION

This paper discusses issues of interrelationship between transport disadvantage and one segment of everyday life of secondary school students, on extracurricular activities. Taken that secondary school students are often considered transport disadvantaged social group, research has shown that transport had a certain impact on their extracurricular activities. This was most evident in the problems that students experienced travelling to these activities. In addition, some students expressed their opinion that transport affected the accessibility of extracurricular activities. Students living in the peripheral parts of the City of Zagreb had most problems. It is particularly important to emphasize the existence of students who were not able to participate in any extracurricular activity due to transport.

Not so many studies deal with the interrelationship of transport disadvantage and everyday life of young people. In order to reduce the level of transport disadvantage and prevent social exclusion, more researches with multidisciplinary approaches are needed. In addition, issues of transport disadvantage and social exclusion should become part of social and transport policies. In the end, awareness about these problems should be raised in order to improve the quality of life and achieve the transport and social justice of all social groups.

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[3] Variables related to (non)attending extracurricular activities are coded as follows: 0 – I do not attend extracurricular activities, 1 – I attend one extracurricular activity; 2 – I attend two extracurricular activities; 3 – I attend three or more extracurricular activities.

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