

OPERATION OF CYCLE BUS IN URBAN BUS TRANSPORT IN NITRA AND TYPIFICATION OF ITS PASSENGERS

Marek Cíván¹, Alfred Krogmann²

Summary: The paper is focused on the evaluation of characteristics of passengers, who use the special bus line "Cycle bus" for transportation in urban bus transport (UBT) in Nitra. In the introduction is defined the role and mission of transport as a service and its contribution to inhabitants. Subsequently there is presented a characteristic of the selected bus line within the frame of particular vehicle, its routing and traffic features. The main part of the paper lies in the analysis of realized questionnaire survey among passengers, which synthesis consists in the introduction of model types of passengers travelling by the Cycle bus. Finally, the acquired findings are summarized and areas that may be improved in the future are pointed out.

Key words: urban bus transport, Nitra, Cycle bus, questionnaire survey

INTRODUCTION

An urban mass transport (hereinafter referred to as UMT) symbolizes a mass transportation of people and their luggage that is operated in order to satisfy transport needs of the city area and eventually catchment suburban municipalities (4). The main role of UMT is to provide a transport serviceability of the city within the required quality and quantity (10). Currently, the traffic situation in cities is facing many challenges. According to the increase of economic power of population in comparison with two decades ago, an individual automobile transport has come to the foreground, reflecting in the density of traffic and lower permeability of main transport routes and in the decrease of transported persons in UMT. With the intention of using of UMT by population, there is a need to create an attractive service that offers passengers more than a classic transportation in the form of special (additional) lines or services (e.g. diverse supplementary information at bus stops or vehicles).

An UMT in the city of Nitra is provided by the private transport company Arriva Nitra a.s. that provides just bus transport, so we can further speak about urban bus transport (hereinafter referred to as **UBT**). The last comprehensive study related to UBS in Nitra was the Plan for Transport Services for the city of Nitra in 2009 (8). In terms of closer issues, there was presented a study concerning on the evaluation of equipment of bus stops (3). Today (in 2014) is the transport serviceability of the city and its city districts provided by 27 bus lines, whereas 26 of them are operating during the whole year. The only bus line with the time-limited operation usually from spring to autumn is the Cycle bus, which is a special

¹ Mgr. Marek Cíván, Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Geography and Regional Development, Trieda Andreja Hlinku 1, 949 74 Nitra, Slovakia, Tel.: +421376408639, E-mail: marek.civan@ukf.sk

² doc. RNDr. Alfred Krogmann, PhD., Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Geography and Regional Development, Trieda Andreja Hlinku 1, 949 74 Nitra, Slovakia, Tel.: +421376408633, E-mail: akrogmann@ukf.sk

seasonal bus line preferentially for cyclists and it provides transportation into the attractive tourist areas with the possibility of transportation of bicycles. The mentioned bus line symbolizes the above-standard element within the UBT in Nitra, as it surpasses the common and basic features of transport services.

The aim of the paper is to show a comprehensive evaluation of the Cycle bus based on the realized questionnaire survey among travelling public using the given bus line and the consequent formation of model types of passengers.

1. METHODOLOGY

The initial step within the research was the acquisition of input information on the operation of the mentioned bus line from the operator's website (1, 7), informational website focusing on the UBT in Nitra (2) and personal communication between authors and representatives of the transport company.

The main necessary element for the realization of set objectives was the conception of questionnaire that was addressed to passengers. It is a suitable method for acquisition of the larger number of answers (11), which is used not only in Transport Geography (5), but also in other various sub-disciplines (6, 9). The questionnaire was divided into two parts, while the first one was concerned on the basic information about respondent and the second was focused on the particular characteristics associated with travelling by the Cycle bus (Fig. 1).

<i>Section A: Basic information</i>						
Sex:	<input type="checkbox"/> man	<input type="checkbox"/> woman				
Age:	<input type="checkbox"/> to 20 yrs.	<input type="checkbox"/> 21 – 30 yrs.	<input type="checkbox"/> 31 – 40 yrs.	<input type="checkbox"/> 41 – 50 yrs.	<input type="checkbox"/> 51 – 60 yrs.	<input type="checkbox"/> 60+ yrs.
Economic status:	<input type="checkbox"/> Student	<input type="checkbox"/> Pensioner	<input type="checkbox"/> Employee	<input type="checkbox"/> Maternity Leave	<input type="checkbox"/> Entrepreneur	<input type="checkbox"/> Unemployed
<i>Section B: Characteristics of travelling by the Cycle bus</i>						
When do you mostly travel by the Cycle bus?	<input type="checkbox"/> Saturday	<input type="checkbox"/> Sunday	<input type="checkbox"/> holiday	<input type="checkbox"/> irregularly		
Who do you usually travel with?	<input type="checkbox"/> alone	<input type="checkbox"/> friends	<input type="checkbox"/> family			
You use the Cycle bus for transportation:	<input type="checkbox"/> purposefully	<input type="checkbox"/> accidentally				
Purpose due to that you use the Cycle bus:	<input type="checkbox"/> sport, recreation, hiking		<input type="checkbox"/> visit of friends or family			
	<input type="checkbox"/> commuting		<input type="checkbox"/> shopping			
	<input type="checkbox"/> no special purpose		<input type="checkbox"/> other			
What advantage of the Cycle bus do you use?	<input type="checkbox"/> transportation of bicycles		<input type="checkbox"/> lower utilization of vehicle			
	<input type="checkbox"/> timetable		<input type="checkbox"/> route			
	<input type="checkbox"/> I don't use any of them		<input type="checkbox"/> other			
Tick two city districts or places you use the Cycle bus for transportation between:						
<input type="checkbox"/> Klokočina	<input type="checkbox"/> Centre	<input type="checkbox"/> Chrenová	<input type="checkbox"/> City park	<input type="checkbox"/> Predmostie	<input type="checkbox"/> Zobor	
How many years do you travel by the Cycle bus?						
How many years does the Cycle bus operate within UBT in Nitra?						

Source: Authors

Fig. 1 – Questionnaire addressed to passengers

The Cycle bus was operating in 2014 from April 18 to October 26 on Saturdays, Sundays and holidays. During this season, there were together 16 bus connections per a day, 8 in each direction (1). The research was realized right in the vehicle of the Cycle bus during the selected bus connections in the particular days (June 14, 15, 21, 22, 28, July 5, 6, 13, August 2, 3, 9, 10, 29, September 1, 2014), while these days were Saturdays, Sundays and

Civáň, Krogmann: Operation of Cycle Bus in Urban Bus Transport in Nitra and Typification of its passengers

holidays in order to reach the widest possible sample of travelling public. From the quantitative point of view, the questioning was realized three times within the all bus connections on Saturdays as well as on Sundays and one time within the all bus connections during holidays that was not on Saturday or Sunday. Overall, the poll was practised during 112 bus connections, while there was reached the final number of 292 valid questionnaires, what created a basis for formulation of relevant results and findings. In relative terms it seems that one connection covered just less than 3 questionnaires in average, but it reflects a frequent repetition of the sample, or else the fact that some of respondents were not willing to cooperate, what had an impact on the final material, which was further processed.

2. BASIC CHARACTERISTIC OF CYCLE BUS

The beginnings of operation of the Cycle bus in UBT in Nitra are dated in the year 2011. The first day of operation of the mentioned bus line was August 6, 2011 (2) and during next years it was operating usually from spring (ca. April) to autumn (ca. end of October). The Cycle bus has symbolized, since its first day of functioning, a weekend bus line operating just every Saturday, Sunday and holidays. It was a recreational, respectively tourist bus line, which primary aim was not to create an economic profit, but above all to ensure transportation of passengers into the attractive tourism points. The routing of the line has developed according to the traffic flows of passengers and their interest in particular locations, where the line was routed. In terms of fare, there was a positive feature that it was paid only for passenger (in accordance with the valid fare in UBT in Nitra) and transportation of bicycle was free of charge. The Cycle bus provided transportation not only for travellers with bike, but in the case of suitable capacity could be used by common travelling public.

The mentioned bus line was operated from its functioning principally by the only vehicle Karosa B732.1654 (2) (Fig. 2), which was specifically reconstructed in order to allow save transportation of bicycles separated from passengers (Fig. 3, 4). Because of this situation, the capacity for passengers reduced to 16 seats and 10 standing places. In light of bicycles there is possible to transport max. 25 pieces. Due to the special characteristic of the vehicle is not possible to transport wheelchairs, while transportation of perambulators depends on the utilization of capacity of vehicle by bikes.



Source: Authors

Fig. 2 – The Cycle bus vehicle



Source: Authors

Fig. 3, 4 – Way of transportation of bicycles

The above mentioned routing of the bus line has been slightly modified from its launch (Tab. 1). Klokočina remained the starting point, because it is the largest housing estate in the city of Nitra and there was a hypothesis of the collection point of passengers. In the initial year of operation were some bus connections directed to the city district Nitra-Dražovce, but because of the low utilization of vehicle was the serviceability of this city district stopped from 2012. The bus line continued to be directed through the city district Nitra-Čermán (bus stop named Dolnočermánska), what was valid just to the end of 2012 season. As the mentioned location was not a significant source of passengers, the bus line was redirected from 2013 to the city center on the main traffic route, what shortened a time of the one bus connection. Another modification lied in the increase of number of bus connections into the City park, while just some connections were routed to the Hospital in the city district Nitra-Zobor. Declared situation was valid by launch of the line in 2014, but since June 29 has been stopped the serviceability of railway station owing to the low interest of passengers that was reflected in shortened time of the one bus connection for 5 minutes, what passengers accepted in the positive way.

Tab. 1 – Routing of the Cycle bus from 2011 to 2014

Year	Route (main bus stops)
2011	Klokočina, Kmet'ova – Mikovíniho – Dolnočermánska – Railway station – Centrum – City park – Amfiteáter – Hospital Zobor / Nitra-Dražovce
2012	Klokočina, Kmet'ova – Mikovíniho – Dolnočermánska – Railway station – Centrum – City park – Amfiteáter – Hospital Zobor
2013	Klokočina, Kmet'ova – Mikovíniho – Railway station – Centrum – City park / Amfiteáter – Hospital Zobor
2014	Klokočina, Kmet'ova – Mikovíniho – Railway station* – Centrum – City park / Amfiteáter – Hospital Zobor

* – service of the bus stop has been stopped since June 29, 2014

Source: Authors, (1), (2), (7)

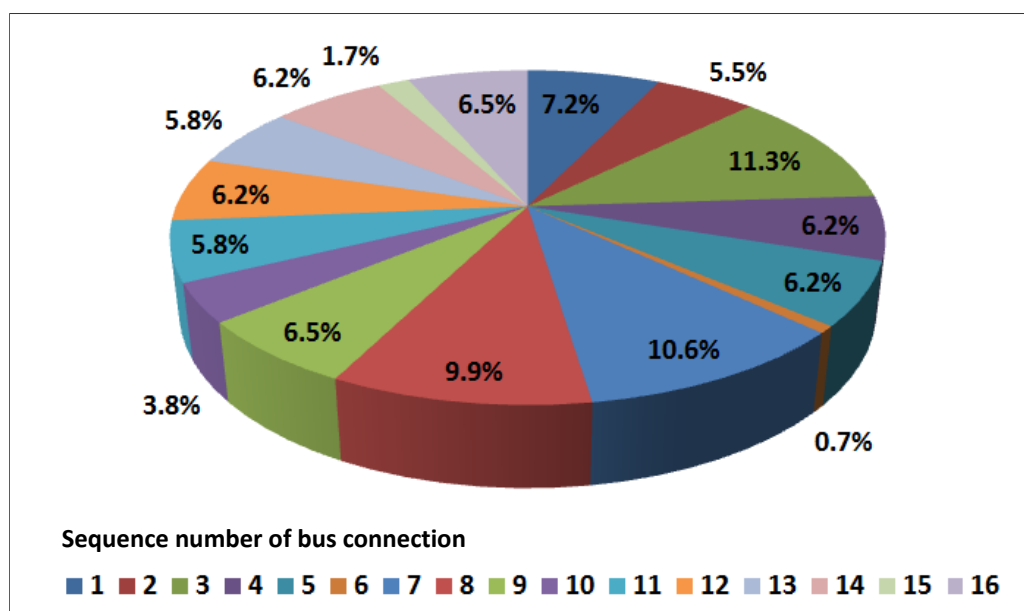
3. RESULTS

The results of survey can be primarily divided into two parts based on the stated sections of the questionnaire. Consequently can be found, within the particular answers, various causal interconnections and links, what makes a possibility for final formulation of model types of passengers.

According to the fact that the poll was realized during Saturdays, Sundays and holidays, there can be assessed the proportion of respondents within the each day. The most (45.9%) of the total number of 292 participants was engaged in the poll on Sundays (134 travellers) during Saturdays took part 127 (43.5%) respondents and on holidays were interviewed 31 (10.6%) persons.

The monitored indicator, which was not included in the questionnaire, was the weather that is a determinant for practising of outdoor activities. A rainy weather was registered just in 33 (11.0%) cases, partly cloudy was recorded during the process of questioning of the one-fourth of passengers, whereas the highest share (63.7%) was registered in case of sunny weather, which maintained during interviews with 186 travellers.

Another explored input factor was the sequence number of bus connection during that were participants interviewed. Given that the Cycle bus realized together 16 connections a day, there was a possibility to assess the interest of travelling public in the utilization of various bus connections (Fig. 5). The connections routed from Klokočina to the City park are labelled by odd numbers, some of them were routed just to the hospital in the city district Nitra-Zobor (connection 1, 3, 7). On the other hand, the connections in direction from the City park to Klokočina housing estate are typical for even numbers, while 3 of them (connection 2, 4, 8) were routed just from the Zobor hospital.



Source: Authors

Fig. 5 – Proportional structure of respondents according to the sequence number of bus connection

The highest representation (11.3%) was registered in the 3rd bus connection, which started at 11:00am from Klokočina and was routed to the Zobor hospital. Its favourite feature was the morning time that could attract passengers. The second highest share (10.6%) reached the 7th bus connection starting at 2:00pm from Klokočina and routing also to the Zobor hospital, whereas 31 travellers were surveyed within this connection during the days of realization of survey. It was the last connection routed to the Zobor hospital and its early afternoon timing was attractive for travellers because of suitable air temperature and a possibility of return even in daylight. The third most significant proportion (9.9%) was recorded in the 8th bus connection leaving the Zobor hospital at 2:55pm in which totally 29 respondents were interviewed. This connection symbolized an appropriate way of transport of those travellers, who decided to go outside just in the morning and were returning home. On the other hand, the lowest representation (0.7%) was reached in the case of the 6th bus connection starting at 1:05pm from the City park directed to Klokočina. The reason of this status may be deduced from its midday timing and potential passengers were probably at home and had lunch or just somewhere outside. The insufficient level of utilization (1.7%) was recorded also in the penultimate bus connection, which started at 6:40pm from Klokočina and was routed to the City park and owing to the late afternoon hour was not very enticing for transportation to the city center, but on the contrary, the bus connections in the backward direction (e.g. 14, 16) showed higher proportion among interviewed passengers.

3.1 Basic information about respondents

In terms of the structure of respondents based on sex can be summarized that women were participating on the survey at the major level (54.5%), involving 159 persons, while there were accounted just 133 (45.5%) men.

In the view of age structure were set 6 various categories and there is a positive finding that all of the selected groups participated on the survey approximately by almost equal proportion (Tab. 2), what reflects that the Cycle bus is interesting for passengers of different age. Within the frame of survey was created a basis for obtaining a relevant sample of responses, which covers various age groups of travelling public.

Tab. 2 – Age structure of respondents

Age group	Number	Percentage (%)
Up to 20 years (yrs.)	42	14.4
21 – 30 yrs.	52	17.8
31 – 40 yrs.	49	16.8
41 – 50 yrs.	51	17.5
51 – 60 yrs.	44	15.1
Above 60 yrs.	54	18.5

Source: Authors

Among the interviewed passengers was monitored their economic activity in order to find out which socio-economic groups use the line the most frequent. Exactly the half of respondents (146 people) was represented by employees, who are generally the main part of

travelling public. The second largest group (66 persons) was formed by pensioners, followed by 61 students. While the first mentioned category used the Cycle bus probably because of transportation to the places of quiet recreation, respectively a visit of social events, the group of students chose transportation to the places typical for more difficult sport activities or active forms of summer enjoyment (such as outdoor swimming pool). Other three categories participated on the survey only marginally, as there were registered just 7 entrepreneurs, 6 unemployed people as well as 6 parents on maternity leave.

3.2 Characteristics of travelling by Cycle bus

The first question within the second section of the questionnaire was concentrated on the preferred day of travelling of respondents by the Cycle bus. The vast majority, 266 of the total 292 (91.1%) surveyed passengers claimed that they used the bus line irregularly and therefore they did not reserve one day for travelling by this line. On Sunday used the Cycle bus for transportation 14 (4.8%) participants and Saturday was preferred among 12 (4.1%) interviewed passengers. Nobody of the sample ticked the possibility of transportation during holiday, because within the operation in the last season there were just 5 holidays (except Easter) from Monday to Friday (May 1, 8, August 29, September 1, 15), when the line is commonly out of service.

Another explored feature was the society with that passenger usually travelled by the selected bus line. A narrow majority, 147 (50.4%) respondents, travelled to the target point alone. Family members travelled with 90 passengers, representing almost the one-third of the interviewed sample, while 55 (18.8%) participating respondents liked travelling with friends.

The important finding for the transport company as well as the ordering party (the city of Nitra), is information if passengers travel by the Cycle bus intentionally. A slight majority, 150 of total 292 (51.4%) respondents claimed that they used this bus line accidentally and were not waiting at the bus stop on arrival of the Cycle bus. The remaining 140 passengers declared a purposeful transportation, what is a positive result, but there should be a challenge to the future to increase not only the total number of passengers, but the proportion of those, who travel by this seasonal line purposefully, too.

The next question was focused on the reason why passengers travelled by the Cycle bus, respectively the purpose that influenced them to use the Cycle bus. The positive finding is that the largest part, 134 (45.9%) respondents travelled by the Cycle bus because of sport, recreation and hiking, what declared the aim of the bus line to ensure transportation to the attractive places for tourism. The presented number correlated positively with the number of passengers, who used the selected line purposefully in the previous question and according to this may be presumed an interconnection between these two questions and passengers' responses. **Less than the one-fifth (18.2%)** of the asked sample presented that they did not have any special reason to travel by the Cycle bus and they used it just due to transportation from the starting point to the target point. Shopping was the reason for 35 participants, because the bus line was routed also to the bus stops in the proximity of three shopping centres (Mlyny, Centro Nitra and Family Center) and two department stores (Tesco, Kaufland). The group of 33 passengers used the Cycle bus in order to commute from/to work and 25 respondents travelled because of the visit of family or friends. Only 12 members of the

sample ticked other reason, among them were the most frequent religious and cultural purposes (visit of theatre or church) or gardening.

The main advantage of the Cycle bus used by passengers was the aim of the further question. The largest group, 120 (41.4%) travellers ticked the route, what was a confirmation of the meaningfulness of line routing and serviceability to the various attractive places. It is the only bus line directed to the area of the City park (proximity of football stadium, castle, outdoor swimming pool), which connects with the city district Nitra-Zobor that is a popular destination for tourists because of favourable natural conditions. Even 98 (33.6%) of passengers claimed that they decided to use the Cycle bus because of its suitable timetable, what can be interconnected with the group of accidental travellers. Transportation of bicycles was used only by 55 (18.8%) participants of the survey, what was not a pleasing fact, because the bus line as well as the vehicle is designated especially for them. Ten respondents answered that they did not use any of the mentioned advantages, and just 9 passengers ticked the lower utilization of vehicle compared to the other bus lines, since the Cycle bus is the bus line typical for relative low utilization of vehicle due to the features of its capacity.

In order to optimize the researched bus line to the future is important to know the main traffic flows of passengers, respectively places, where they travel the most often. Each of the respondents ticked two city districts or places between those used the Cycle bus for transportation. Every fourth passenger ticked Klokočina housing estate (the largest housing estate in the city) and in terms of the bus line had a function of the collection point of passengers. The city centre (bus stop named Centrum) was identified in 21.7% of cases and the third highest representation (17.1%) reached the City park. The respondents ticked the city district Nitra-Zobor 59 times (10.1%), housing estate Chrenová; where the route of the Cycle bus extends only marginally; was marked 51 times (8.7%) and Predmostie (part of the city district Nitra-Staré Mesto) was ticked just in 13 (2.2%) cases. The more precisely expression of the traffic flows of passengers may be evaluated according to the two city districts (or places) and their frequency occurrence within the obtained answers (Tab. 3).

Tab. 3 – Traffic flows of passengers travelling by the Cycle bus

City district / place	Centrum		Chrenová		Klokočina		City park		Predmostie		Zobor	
	n	%	n	%	n	%	n	%	n	%	n	%
Centrum	10	1.7	23	3.9	67	11.5	10	1.7	4	0.7	13	2.2
Chrenová	23	3.9	0	0.0	17	2.9	7	1.2	1	0.2	3	0.5
Klokočina	67	11.5	17	2.9	44	7.5	79	13.5	1	0.2	26	4.5
City park	10	1.7	7	1.2	79	13.5	0	0.0	1	0.2	3	0.5
Predmostie	4	0.7	1	0.2	1	0.2	1	0.2	0	0.0	6	1.0
Zobor	13	2.2	3	0.5	26	4.5	3	0.5	6	1.0	8	1.4

n – number % – percentage

Source: Authors

The most significant traffic flow of passengers (13.5%) was registered between the city-district Nitra-Klokočina and the City park, what was ticked by 79 passengers. It can be

assessed as a positive result, because of the confirmation of hypothesis that the mentioned housing estate is the significant source of passengers, while the area of the City park includes attractive places for relax, recreation or sport. The second most important traffic flow of passengers (11.5%) was recorded between Klokočina and the bus stop Centrum, which is located in the city centre next to the Mlyny shopping centre and Tesco department store. The Cycle bus copies between these two points the route of the bus line No. 32, which connects the two biggest housing estates in Nitra (Klokočina, Chrenová). There is a prediction that the sample of respondents using the Cycle bus for transportation between Klokočina and city centre considered this bus line just as a way of classic form of transportation and these passengers did not used its punchline. The third most significant traffic flow of passengers (7.5%) was noticed within the Klokočina housing estate, what reflected transportation usually between the place of residence and Kaufland department store, Family Centre shopping centre or church. Other traffic interconnections reached proportion lower than 5%, what is concerned also with the flow between Klokočina and Zobor (4.5%), what was influenced by the fact that just 3 bus connections in each direction were operating on this longer route. Generally, the area of Predmostie acquired very negative results, and did not exceed the level of 1% with any of the other locations.

The penultimate question of the second part of the survey had a qualitative character, because respondents stated the number of years (seasons) of travelling by the Cycle bus. The negative result is that even 182 of total 292 (62.3%) passengers used the Cycle bus for the first time just in 2014. Almost the one-fourth (24.0%) of the sample travelled by this bus line for the period of two years and 22 (7.5%) of the interviewed people used the Cycle bus three years. During the whole term of its operation, only 15 (5.1%) of the all respondents travelled by the selected bus line, what confirmed that the Cycle bus is still a relatively new concept among travelling public and still has conditions to acquire new passengers. Three participants answered the length of 5 years, what was not really possible, while the average length of travelling by the Cycle bus reached the level of 1.6 years.

The final question of the questionnaire was also opened and its goal was to find out the number of years of operation of the Cycle bus according to the passengers' point of view. Its importance lied in reflection and registration of this specific bus line in the mind of travelling public. More than the one-third (36.6%) of the asked sample proclaimed that the Cycle bus operates for the period of 3 years. On the other hand, 91 participants answered 2 years and only 45 (15.4%) of the interviewed travellers guessed the correct answer (4 years). Just the first year of operation was presented by 24 respondents, whereas the group of 20 passengers thought that Cycle bus operated within UBT in Nitra for 5 years (impossible). Other responses did not exceed the number of 2 respondents and therefore they had only a negligible character in terms of general results. Overall, the average period of operation according to the passengers reached the length of 2.9 years.

3.3 Model types of passengers

Based on the partial results registered among travelling public participating on the survey is possible to create a synthesis and consequent types of passengers, who travelled by the Cycle bus in the highest frequency and who should be this seasonal bus line attractive for.

The first type of passengers are students, who were participating on the survey by 61 persons usually up to 20 years (67.2%), so they were mostly attending primary or secondary school. More than a half of them (31) travelled by the Cycle bus alone, confirming an individual attitude of this group of passengers. Nearly two-thirds (63.9%) of this category used the Cycle bus purposefully, declaring that they belong to the types of passengers for whom is the bus line designed. A narrow majority (50.8%) travelled by the Cycle bus because of sport, recreation or hiking, what underlines the interest of young population in sport activities realized in the natural environment. The advantage of transportation of bicycle was used just by 11 (18.0%) of them and the most influential factor of their transportation was the route (45.9%). These results correlated with the general results of the survey. In terms of traffic flows of passengers was the most favourite connection between Klokočina and the City park (36.1%), showing the interest of students in practising physical activities in this area or just visit of outdoor swimming pool. The second most favourable traffic flow was between Klokočina and the city centre (23.0%). Students used to travel by the Cycle bus for 1.7 years in average, whereas even 39 (63.9%) of them used this bus line for the first time in 2014. The positive finding is that the highest representation (32.8%) of students registered the operation of the Cycle bus for the period of 4 years, thus during its whole operation.

Pensioners symbolize the second typical group of passengers that travelled by the selected bus line, as 66 of them participated on the survey. The majority (56.1%) of them was travelling alone, too, but their reasons may be different, such as marital status, physical character or health. Usually six of ten members of this group travelled by the Cycle bus accidentally, what reflects a low level of awareness about the mentioned bus line, for example in the form of low contact with the Internet as a modern information and communication technology. The highest share (42.4%) of pensioners used the Cycle bus for the purpose of sport, recreation or hiking, but compared to the students, they practised probably physically undemanding activities like walks or visits of social events at the City park. The main advantage remained the route (39.4%), whereas every third participant ticked a suitability of timetable as the advantage, what had an impact on the accidentally travelling sample. A pleasing finding was that 14 (21.2%) of passengers used transportation of bicycle showing the interest in active lifestyle of older population. The main traffic flows of passengers were again between Klokočina and the city center (24.2%) and between Klokočina and the City park (22.7%) claiming the meaningfulness of routing of the bus line. As in the case of the previous group, the highest proportion (62.1%) of pensioners travelled by the Cycle bus for the first time in 2014 season, whereas the average length reached the level of 1.6 yrs. that correlates with the general results of the survey. Despite this fact, the pensioners registered the Cycle bus for 3.1 yrs. in average, what is a bit higher number compared to the overall results.

The last category of passengers with the condition of attractiveness of the Cycle bus were people from 21 to 40 years, who included on the one hand a young part of population with the assumption of sport activities and on the other hand young families that like light form of hiking or activities at the City park and its neighbourhood, where are commonly organised various events for children. The mentioned category consisted of 101 respondents and symbolized the largest group of the selected prototypes. In terms of economic status was

reached the highest representation (68.3%) by employees, what formed favourable economic conditions of the group for travelling by this bus line. In spite of these hypotheses were registered just 29.7% of the sample travelling with family, whereas the highest share (51.5%) used to travel alone, what confirmed general results of the survey. Purposefully way of transportation was typical for 52 of interviewed and 50 participants travelled accidentally. A positive finding is that the most preferred reason for transportation was sport, recreation and hiking (46.5%) showing that this category used the Cycle bus because of its main punchline. The most advantageous factor of the bus line was again its route (48.1%), and 21 of this group consisting of 49 passengers ticked route together with the purpose of sport, recreation and hiking. There is an evident confirmation of the meaningfulness of routing of this bus line. Transportation of bicycle was used just by 20 passengers, who represent approximately the one-fifth (19.8%) of the members of this group. The main traffic flows remained the same as in the previous two model types, and passengers from 21 to 40 yrs. usually travelled between Klokočina and the City park or the city center, because each of these two connections was ticked by 24 respondents. Also in this group was true that the most of participants (60.4%) used the Cycle bus for transportation for the first time just in 2014, while in terms of average length of travelling was reached the level of 1.6 yrs., what confirmed general results of the survey. According to the proportion of the largest group (43.6%), the Cycle bus was operating within UBT in Nitra for the period of 3 years, and the real term (4 years) ticked just 16 (15.8%) people included in this category. The average length of operation reached the level of 2.9 yrs., what approved the overall results.

CONCLUSION

The Cycle bus symbolizes a seasonal bus line within the UBT in Nitra functioning since 2011 usually from April to October and it provides transportation of passengers (together with bicycles) into the attractive places of recreation, social life, hiking, sport and tourism. The route of bus line was during its existence modified according to its utilization and traffic flows of passengers into its current route connecting the largest housing estate with the city center, the City park and some bus connections continues to the Zobor hospital. The realized questionnaire survey right among the passengers travelling by the selected bus line brought the closer findings about their characteristics of travelling and pointed out their favourable directions, bus connections, etc. Among the positive results can be included the fact that the bus line is attractive for all age groups, whereas travellers use it commonly for the purpose of sport, recreation and hiking, because of appropriate route, too. To the areas with the possibility for improvement belong the better propagation and publicity of the bus line (e. g. at specialized shops offering products for cyclists, kindergartens, primary and secondary schools) in order to increase a group form of transportation of passengers with family members, friends and together with bicycles. The enhanced awareness can stimulate the interest of travelling public and contribute to its wider utilization, because of that the most participants of the survey travelled by the Cycle bus just for the first time in 2014 season. In terms of routing was confirmed the correctness of connection among Klokočina housing estate, the city center and the City park, where were registered the main traffic flows of

travelling public. Finally were introduced three prototypes of passengers (students, pensioners, young people from 21 to 40 yrs.), who have the biggest potential for utilization of the bus line because of the particular reasons of each group.

The research in the field of perception of transport services by passengers cannot be generally considered as finished. Knowing the interests of passengers as consumers of service is very important element for ordering party (the city of Nitra) as well as provider (transport company), in order to improve the services and their better adaptation to the needs of final consumers. In case of maintaining of operation of the Cycle bus to the future will be a challenge to repeat such survey in medium time period (approx. 3 years) and the consequent comparison of the results can bring answers on reactions and requirements of passengers and thus bring them closer to UBT and stimulate their interest in utilization of this service.

ACKNOWLEDGEMENT

We would like to give the words of thanks for cooperation and help during the realization of the survey, especially to Bc. Vladimír Šimko, Arriva Nitra a.s. sales representative in the field of UMT and bus drivers of the Cycle bus for their willingness and troublefree attitude, namely Július Peťko, Ľuboš Štibrányi, Pavol Reguli, Martin Adámik and Jozef Palkovič.

REFERENCES

- (1) 35 *Cyklobus*. [online]. c2014 [cit. 2014-12-02]. Available at: <<http://www.arrivanitra.sk/res/data/015/001899.pdf>>
- (2) *Aktuálne zmeny, výluky a informácie*. [online]. c2014 [cit. 2014-11-05]. Available at: <<http://imhd.zoznam.sk/nr/mhd.html>>
- (3) CIVÁŇ, M., KROGMANN, A. Evaluation of equipment of stops of urban bus transport in Nitra. *Perner's Contacts*, 2013, Vol. 8, No. 4, p. 12 – 23, ISSN 1801-674X.
- (4) GNAP, J. a kol. *Odborná spôsobilosť vodiča autobusovej dopravy*. Žilina: Žilinská univerzita v Žiline, 2008. 337 p. ISBN 978-80-8070-832-0.
- (5) KRIŽAN, F., GURŇÁK, D. Vybrané problémy MHD v Bratislave. *Doprava a spoje*, 2008, Vol. 4, No. 1, p. 31 – 42, ISSN 1336-7676.
- (6) MITRÍKOVÁ, J. *Geografické aspekty transformácie maloobchodu a nákupného správania sa na Slovensku (prípadové štúdie z miest Prešov a Košice)*. Prešov: Prešovská univerzita v Prešove, 2008. 213 p. ISBN 978-80-8068-922-3
- (7) *Nitriansky cyklobus začína premávku 6.4.2012* [online]. c2012 [cit. 2014-11-05]. Available at: <<http://www.arrivanitra.sk/oznamy/zmeny-v-doprave/nitriansky-cyklobus-zacina-premavku-6-4-2012/>>
- (8) *Plán dopravnej obsluhy pre mesto Nitra* [online]. c2009 [cit. 2014-11-05]. Available at: <http://www.nitra.sk/e107_files/files/N%C3%A1vrh%20P%C3%A1nu%20doprajnej%20obsluhy%20pre%20mesto%20Nitra.pdf>
- (9) VESELOVSKÝ, J. *Chudoba na príkade Nitrianskeho kraja*. Nitra: Univerzita Konštantína Filozofa v Nitre, 2012. 206 p. ISBN 978-80.558-0056-1

- (10) VILÍM, M., HORYNOVÁ, V., KAMPF, R. Faktory kvality městské hromadné dopravy. *Perner's Contacts*, 2012, Vol. 7, No. 1, p. 155 – 162, ISSN 1801-674X.
- (11) ZEĽOVÁ, A. Rozhovor a dotazník. In *Manažérstvo kvality na vysokých školách*. Košice: Technická univerzita v Košiciach, 2003. p. 71 – 86