Introduction of data analysis and research implemented on the Mária Valéria bridge between Esztergom and Štúrovo

György FARKAS

Abstract

This chapter introduces the results and the most important general conclusions that can be deduced from the implemented research activity, performed on the Mária Valéria bridge between Esztergom and Štúrovo. It is important to underline that the chapter's principal aim is to present the research process and its results achieved, that is this chapter of the current volume does not contain any theoretical parts and/or academic literature.

The results of the performed traffic count and questionnaire-based survey will be presented in the following parts of the study. To be specific, a substantial part of this study introduces the data obtained from the automobile passengers/drivers, who crossed the Slovak-Hungarian border and the Mária Valéria bridge during the time of the research. The sequence of the chapter is the following: firstly, the 2014 results of the research will be introduced, followed by the presentation of the research activity carried out in 2015. Afterwards the information received from these two series of questioning will be presented with a common approach and criteria. To avoid duplicity, the second part of the study mainly concentrates on presenting the revealed differences and divergences, therefore this part will be less detailed. Finally, the third part of the chapter involves the most important conclusions drawn during the research, processing and analysing of the gathered information.

Keywords: Mária Valéria bridge, Slovakia, Hungary, settlements, questionnaire-based survey

1 Introduction of the results of traffic counting and their analysis

We categorised the data according to the counting days. According to the original plans of the research, data was gathered on the basis of quarter and hourly partitions; and we separately treated the vehicle categories, as well as the two directions of border crossing of the vehicles.

The dual columns of graphs show volume data for the crossing traffic, they were complemented by 6-level polynomial function-based lines. Subsequently, it can be observed that which direction, and its average, exceeds the other one.

1.1 Traffic counting in 2014

1.1.1 The combined data of traffic counting

Table 1.1.1. presents the 2014 combined data on road traffic between Esztergom and Štúrovo across the Mária Valéria bridge and which was recorded during the summer traffic counting. Data is introduced on the basis of days when the counting was performed. Moreover, it presents the direction of the crossing and the vehicle category.

Table 1.1.1. Basic data of the traffic counting in 2014 I.
Combined data of border-crossing vehicles

	Štúrovo → Esztergom						**Esztergom → Štúrovo**						ΣΣ
	A	B	B1	D	E	Σ	A	B	B1	D	E	Σ	
I.	**2,095**	**26**	**21**	**71**	**186**	**2,399**	**2,329**	**11**	**28**	**71**	**211**	**2,650**	*5,049*
II.	1,310	202	25	27	16	1,580	1,009	194	16	17	14	1,250	*2,830*
III.	**2,401**	**245**	**34**	**27**	**21**	**2,728**	**2,221**	**246**	**22**	**22**	**26**	**2,537**	*5,265*
IV.	1,507	198	44	39	15	1,803	1,412	184	25	26	15	1,662	*3,465*
Σ	**7,313**	671	124	164	238	*8,510*	**6,971**	635	91	136	266	*8,099*	*16,609*

I. = 7th of July, 2014 [Monday]; 08:00 – 20:00 A = automobile B = minibus
II. = 8th of July, 2014 [Tuesday]; 08:00 – 14:30 B1 = bus
III. = 9th of July, 2014 [Wednesday]; 08:00 – 20:00 D = motorcycle
IV. = 10th of July, 2014 [Thursday]; 08:00 – 16:00 E = other

source: "PHANTOM-BORDER" project; I. survey: 7th–10th of July, 2014

During the first counting, 16,609 crossings of border were recorded. The percentage structure of these border crossings is the following: 86.00% automobiles, 7.86% minibuses with passengers, 1.29% buses, 1.81% motorcycles

and the remaining 3.03% crossing vehicles were involved within the other category. The table shows that more cars crossed the bridge from Esztergom to Štúrovo on Monday; however, it was the opposite from Tuesday till Thursday.

The traffic counting days were not equal. Initially, we identified that the time frame for counting will be between 8:00 and 20:00; although, counting within this time frame was not achieved every day. Two days (the first and the third one) can be seen as fully informative and which met the identified traffic counting objectives from the four counting days. Subsequently, only these two days can be fully compared. According to the 2014 data, the daily border-crossing across the Mária Valéria bridge (in both directions) counted around 5 thousand vehicles. This volume means 400 vehicles per hour, and 6-7 vehicles per minute.

1.1.2 Results of traffic counting in 2014, based on days and categories

On the first day (7th of July) of traffic counting in 2014, 4,424 passenger vehicles crossed the Mária Valéria bridge between 08:00 and 20:00. This means 369 passenger vehicles per hour, 92 passenger vehicles per quarter hour, and 6 passenger vehicles per minute.

4,622 passenger vehicles crossed the Mária Valéria bridge between 8:00 and 20:00 on the third counting day (9th of July) of the first traffic counting research in July 2014. It means 385 crossing vehicles per hour, 96 vehicles per quarter hour, and 6 vehicles per minute.

If we compare the border crossing traffic on a daily basis, we can divide two distinguishing periods. The highest number of crossing vehicles was present in the early morning and in the afternoon. The maximum number of vehicles crossing the bridge appeared in the second big wave and the duration of it was different from the first one. The second wave shows higher number and longer run than the first one. Štúrovo-Esztergom direction experienced higher traffic in the first half of the day, but it was altered in the afternoon, hence the opposite direction, Esztergom-Štúrovo, became more dominant. Nevertheless, further strong contrast is visualized in the traffic movements and tendencies (compare Figures 1.1.2.1. & 1.1.2.2.). In the comparison of the two days of the first research and their quarter hour partitions show numerous turnarounds, when the dominance of the border crossing direction was changed. Time frames of these turnarounds of the two days are different from each other.

Figure 1.1.2.1. Basic data of the traffic counting in 2014 I.
7th of July 2014, 8:00-20:00, automobile traffic

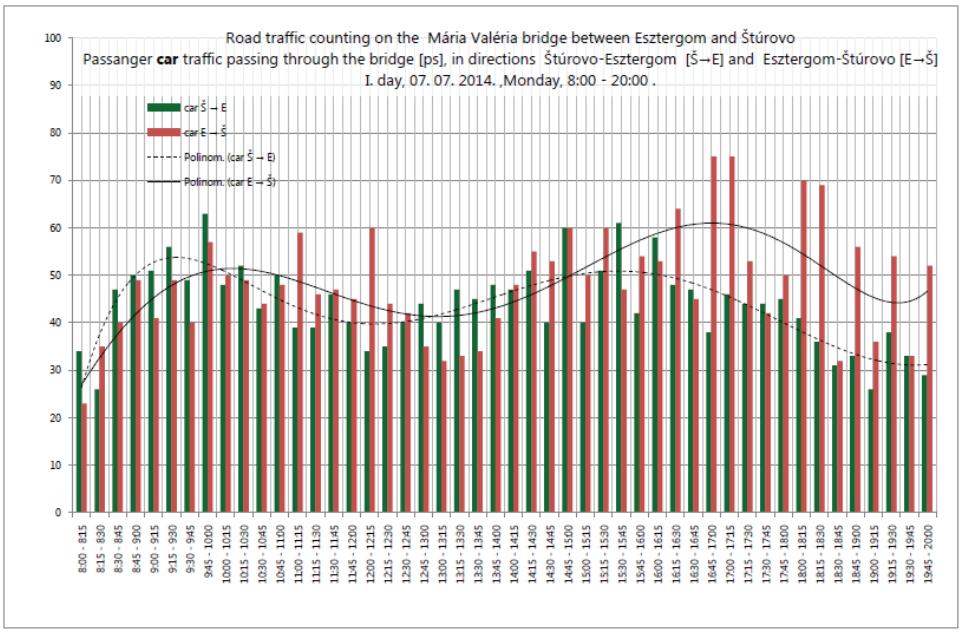
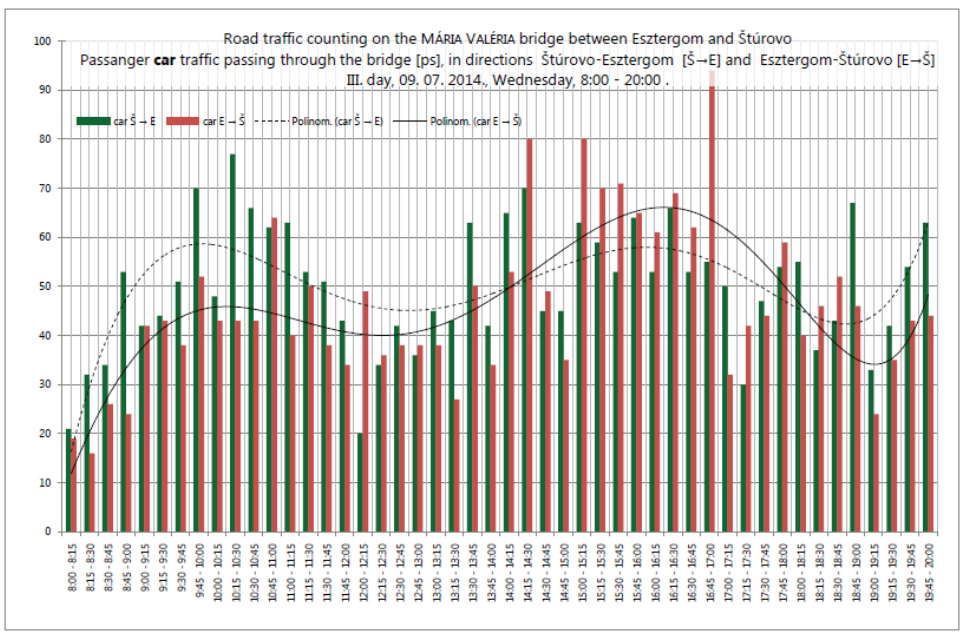


Figure 1.1.2.2. Basic data of the traffic counting in 2014 II.
9th of July, 2014, 8:00-20:00, automobile traffic



1.2 Traffic counting in 2015

1.2.1 The combined data of the traffic counting

The second traffic counting, which was implemented in 2015, recorded 12 294 crossing vehicles. The structure of the crossing vehicles was the following: 86.28% passenger vehicles, 9.31% buses, 2.29% minibuses, 1.45% vans, 0.45% motorcycles, 3.03% vehicles in category other. Vehicles from Esztergom dominated over the vehicles from Štúrovo in every category during the second counting of border crossing traffic. According to our counting during the spring in 2015, the daily traffic over the Mária Valéria bridge was over 4 000 vehicles which means 340 vehicles per hour, and 6 vehicles per minute.

Table 1.2.1. Basic data of the traffic counting in 2015 I.
Combined data of border-crossing vehicles.

	Štúrovo → Esztergom							Esztergom → Štúrovo							ΣΣ
	A	B	B1	C	D	E	Σ	A	B	B1	C	D	E	Σ	
V.	**1,931**	**29**	**215**	**24**	**11**	**2**	**2,212**	**2,146**	**21**	**232**	**23**	**11**	**2**	**2,435**	*4,647*
VI.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VII.	*1,967*	*72*	*214*	*33*	*12*	*7*	*2,305*	*2,151*	*67*	*228*	*38*	*10*	*7*	*2,501*	*4,806*
VIII.	846	21	107	6	0	3	**983**	1,566	72	149	54	11	6	**1,858**	*2,841*
Σ	**4,744**	122	536	63	23	12	*5,500*	**5,863**	160	609	115	32	15	*6,794*	*12,294*

V. = 24th of March, 2015 [Tuesday]; 08:00 – 20:00 A = automobile B = minibus
VI. = 25th of March, 2015 [Wednesday]; 06:00 – 20:00 C = van B1= bus
VII. = 26th of March, 2015 [Thursday]; 06:00 – 18:00 D = motorcycle
VIII. = 27th of March, 2015 [Friday]; 06:00 – 11:00 E= other

source: "PHANTOM-BORDER" project; II. survey: 24th–27th of March, 2015

Unfortunately, the results from the counting days cannot be seen as fully equivalent. The original plan was that the time frame of the counting will be between 08:00 and 20:00, but this was fully implemented only one day during the research and it was the first day of the counting. Because of external circumstances during the second counting, only one measurement day, the first one, can be considered as fully comparable.

1.2.2 Data of the counting based on days and categories

The first day of the second counting, which was implemented in March 2015, was Tuesday (24th of March). During this day, 4,074 vehicles crossed the Mária Valéria bridge across the Danube between 08:00 and 20:00. The biggest difference in the domain of crossing vehicles was in the late afternoon. There were 40 crossing

Figure 1.2.2.1. Basic data of the traffic counting in 2015 I.
24th of March 2015, 8:00-20:00, automobile traffic

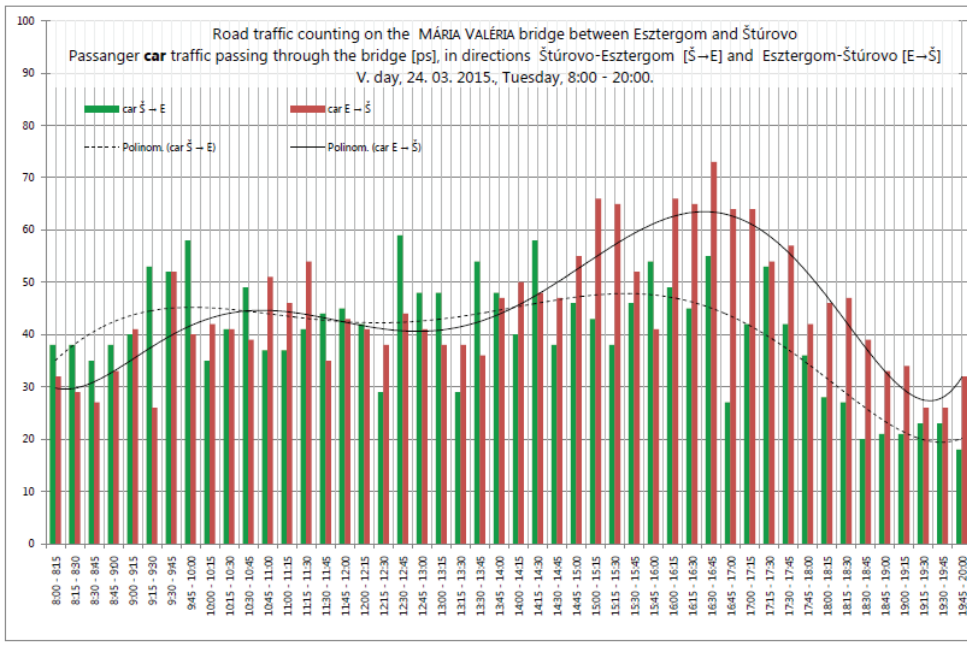
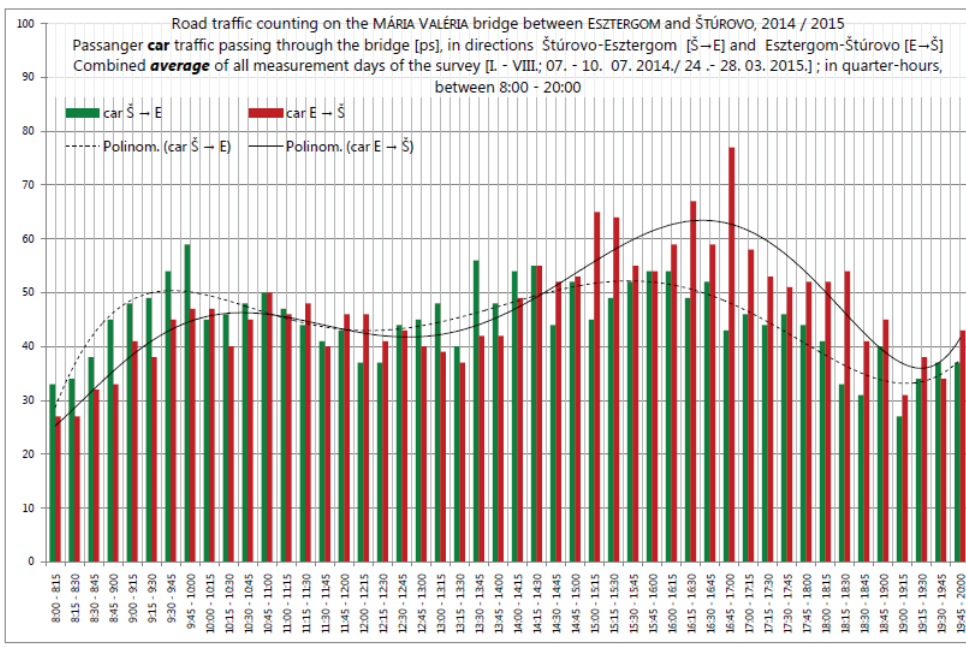


Figure 1.3.1. Summary of basic traffic counting data from 2014 and 2015 I.
Quarter hour averages of the automobile traffic. [every traffic counting days]; 8:00 – 20:00



vehicles in average from Štúrovo to Esztergom, and 45 vehicles in the opposite direction during a quarter hour time frame.

Two outstanding periods can be observed during the vehicle counting in 2014, but also in 2015. This time, high volume of border crossings was not as explicit during the early morning as in the afternoon. Moreover, an interesting moment was the "sluggishness" of the vehicle border crossing during the early afternoon.[1]

1.3 Conclusions from the comparison of the two traffic counting data

The Figure 1.3.1. compares the basic average data of traffic counting in quarter hour structures between 08:00-20:00 in 2014 and 2015; although, it has some counting and comparability difficulties. The given figure supports and confirms all those observations that were already articulated and expressed.

Crossings over the bridge can be characterized by two main phases, one was during the early forenoon which presents a mild growth of vehicles, and there is the early afternoon phase with very strong and longer volume of vehicle crossings. Before the first high volume of crossing, direction from Štúrovo to Esztergom dominated, while during the second high volume the direction to Štúrovo was predominant. Nevertheless, it can be concluded that the Esztergom-Štúrovo was the main determining direction of the vehicle crossings.

2 Analysis of Questionnaire-based survey results

2.1 Questionnaire-based survey of the passenger vehicles in 2014 and 2015

The results of the two questionnaires are presented together. The personal data and the general characteristics of the generated sample are summarized in a table. In the case of those data where the residence may be important are presented

1 The explicit fall-back after 18:00 might have been influenced by the season: "tourism" is not typical for the early spring period. During the first half of the day, the direction Štúrovo – Esztergom was more dominant, but the second half of the day could be characterized by the dominance of the opposite direction, from Esztergom to Štúrovo. According to the quarter hour partitions of the border crossing traffic, the changes of the traffic trends – changes within the direction of the dominant traffic route – can be defined with less certainty. Two time frames are clearly visible (10:30 & 14:00), but the data around 11:30 is too volatile.

in separate tables and graphs. The general conclusions, drawn from the basic analysis of the data from the two surveys, are supported by tables which are based on the aggregate sample.

When we present the results of the questionnaire survey, it is particularly important to emphasize that the surveys were conducted in different periods.

The first survey was implemented in the middle of summer of 2014, during the tourist season, while the second survey was done in the early spring of 2015, long before the touristic period. Subsequently, it is highly important to be aware of the differences between the two surveys. The variations between the surveys are very small, but they are not insignificant. These differences had to be taken into account in the case of a research that aimed to explore the reasons, nature of border crossings and the existing relationships "beyond" the border. The differences between the two samples can be also used in order to check the deductible conclusions.

2.1.1 Number of questionnaires and the proportion of the interviewees

More than 800 questionnaires were filled by the participating students during the four day research in 2014, while more than 500 questionnaires were filled by the responses of the drivers in 2015. 1,331 questionnaires were processed.

Accurate estimation of the polling ratio of vehicle traffic across the bridge is possible on the basis of comparing the recorded data and the traffic counting periods. On average, the estimated survey rate reached 10%. However, the standard deviation of this estimate is quite significant. However, the standard deviation of the estimated data is quite significant. Survey rates fluctuate between a minimum of 3.40% and a maximum of 26.15%. On average, the estimated survey rate could reach 10%. However, deviation of this estimated data is quite significant. Survey rates differ between a minimum of 3.40% and a maximum of 26.15%.

Table 2.1.1.1. Basic data of the questionnaire-based survey in 2014 and 2015 I.
The number of registered and processed questionnaires

Research day	2014					2015					ΣΣ
	I.	II.	III.	IV.	Σ1	V.	VI.	VII.	VIII.	Σ2	
All registered questionnaires	217	195	235	220	867	120	131	262	25	538	**1,405**
Incorrect	*10*	*9*	*8*	*4*	*31*	*4*	*0*	*0*	*0*	*4*	*35*
Needed correction	*5*	*10*	*2*	*4*	*21*	*2*	*6*	*7*	*3*	*15*	*39*
Left out	*15*	*19*	*10*	*8*	*52*	*6*	*6*	*7*	*3*	*22*	*74*
Usable	**202**	**176**	**225**	**212**	**815**	**114**	**125**	**255**	**22**	**516**	**1,331**

source: "PHANTOM-BORDER" project; I. survey, 7th-10th of July, 2014; II. survey 24th-27th of March, 2015

2.1.2 Characteristics of the surveyed sample – basic personal data

2.1.2.1 Residence

We begin the introduction and analysis of the survey data by personal information. Hence, the first is the compound data on the basis of residence.

Table 2.1.2.1. Personal basic data of the 2014 and 2015 questionnaire-based survey I. Residence of the interviewed passengers

		2014		2015		Σ	
		815 prs.	%	*516 prs.*	%	*1331 prs.*	%
residence	SK	**437**	53.62	**266**	52.16	**703**	52.82
	HU	**377**	46.26	**244**	47.86	**621**	46.66
	other	1	0.12	**6**	1.16	**7**	0.53
	IGE SK	**389**	61.16	**241**	61.64	**630**	61.34
	IGE HU	**247**	37.89	**150**	38.36	**397**	38.66
	IGE	*636*	**78.04**	*391*	**75.78**	*1,027*	**77.16**
	other	179	21.96	125	24.22	304	**22.84**

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

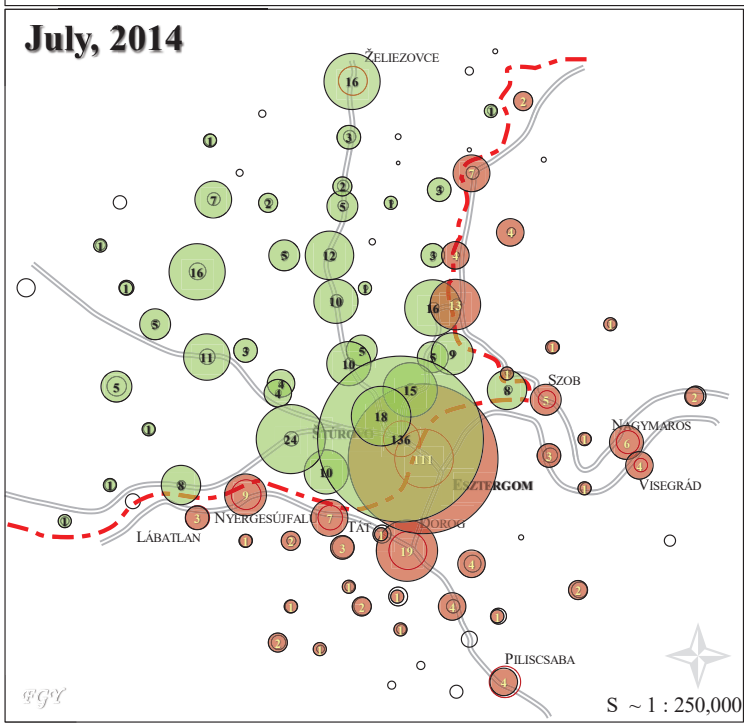
As it is visible from the Table 2.1.2.1., a slight majority of the car traffic respondents expressed a Slovakian residence in 2014 and 2015. 77.16% of the respondents had residence within the territory of the Euroregion. The remaining 28.84% of the respondents arrived outside from the Euroregion and this share can be understood as ("inner") control group of the sample.

It can be said that the given residency by the survey respondents and their distribution were strongly dependant on population number and geographical distribution of given municipalities within the euroregion. Slight majority from the Slovakian municipalities may be profoundly influenced by their geographical and infrastructural conditions that allow better and faster access to the crossing point and the bridge. Subsequently, several important routes and their impact appeared, like the route in the valley of Hron and Ipeľ/Ipoly, since numerous settlements are located next to these routes; then it was the route that links Štúrovo with Komárno; and the route between Štúrovo and Nové Zámky. These were the routes that fuelled the majority of Slovakian passengers towards Hungary. Other minor routes, which have peripheral situation within the region, had limited impact and influence, and fewer drivers arrived from these municipalities and

The „PHANTOM-BORDER" – project; questionnaire-based survey of *passenger car* traffic I.

Residence of the interviewees in settlements of IG EGTC

July, 2014



Legend

The population of settlements, 2011 [persons]

25,000 –
10,000 – 24,999
5,000 – 9,999
2,000 – 4,999
1,000 – 1,999
500 – 999
– 499
CITIES

source: KSH; SSÚ

The ***number*** of respondents mentioning given settlements as their **residence** on the *Slovakian* and *Hungarian* side of region

source: PHANTOM-BORDER *project*, I. survey, 2014. 07. 07. – 11.

settlements of **Ister-Granum euroregion*[93]**

state border HU/SK

main roads

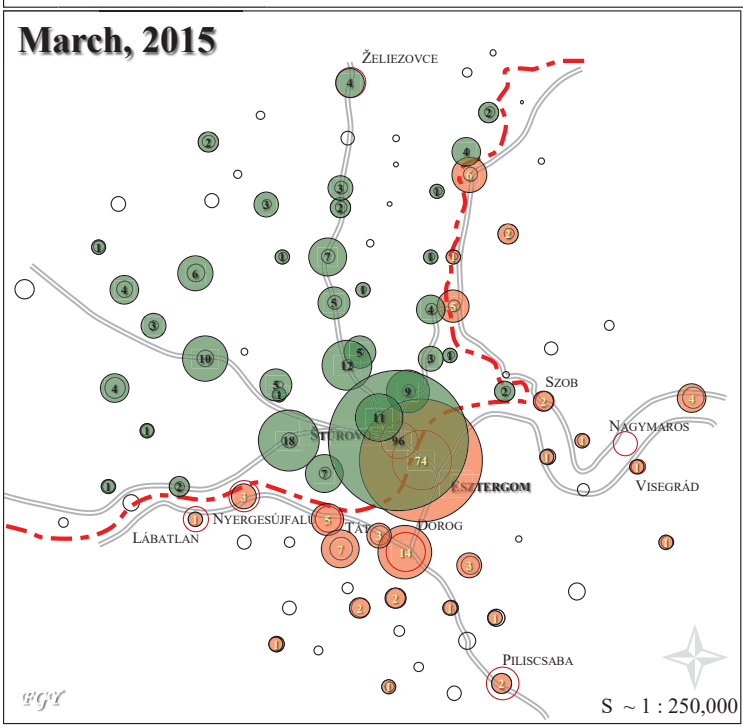
The *sizes* of circles / pie charts, that displays data of the **population**, and of the specified **residence**, are **strongly *distorted***!

* Some of the settlements and its data, that are managed in our analysis as parts of IGE, are missing from this chart: *Dunabogdány*; *Kemence*; *Kismaros*; *Leányfalu*; *Pilisszántó*

The „PHANTOM-BORDER" – project; questionnaire-based survey of *passenger car* traffic II.

Residence of the interviewees in settlements of IG EGTC

March, 2015



Legend

The population of settlements, 2011 [persons]

25,000 –
10,000 – 24,999
5,000 – 9,999
2,000 – 4,999
1,000 – 1,999
500 – 999
– 499
CITIES

source: KSH; SSÚ

The ***number*** of respondents mentioning given settlements as their **residence** on the *Slovakian* and *Hungarian* side of region

source: PHANTOM-BORDER *project*, II. survey, 2015. 03. 24 – 27.

settlements of **Ister-Granum euroregion*[93]**

state border HU/SK

main roads

The *sizes* of circles / pie charts, that displays data of the **population**, and of the specified **residence**, are **strongly *distorted***!

* Some of the settlements and its data, that are managed in our analysis as parts of IGE, are missing from this chart: *Dunabogdány*; *Kemence*; *Kismaros*; *Leányfalu*; *Pilisszántó*

routes. On the other hand, the conditions of availability and access were also present on the Hungarian side.[2]

2.1.2.2 Gender, Age, Educational level

Some general characteristics of the sample can be outlined from the data set of the surveys based on territorial grouping of the personal data of the interviewers.

Table 2.1.2.2. Personal basic data of the questionnaire-based surveys in 2014 and 2015 II. Gender distribution, age structure, and education level of the interviewees, territorial categorisation based on given residence

		Gender		Age						Educational level			
		F	M	-20	21-35	36-50	51-65	66-70	70 -	elementary	secondary	secondary with GCSE	university
%	Total sample	**22.54**	**77.46**	**0.83**	**28.03**	**41.07**	**20.50**	**7.08**	**2.49**	**4.73**	**25.25**	**42.33**	**27.69**
	SK	25.89	74.11	**1.14**	26.71	42.71	19.43	**7.57**	2.43	5.19	27.95	46.69	20.17
	HU	18.28	81.80	0.48	29.35	39.35	21.77	6.45	2.58	4.26	**22.46**	37.54	**35.74**
	Štúrovo	27.59	75.41	0.87	**26.41**	**45.89**	**18.18**	6.06	2.60	3.93	18.34	**50.66**	27.07
	Esztergom	25.95	74.05	**0.00**	**32.43**	**34.59**	**22.70**	**5.95**	**4.32**	**2.76**	23.20	42.54	31.49
	IGE SK	26.63	73.30	1.12	27.08	42.63	19.39	7.37	**2.40**	5.50	**28.32**	46.76	**19.42**
	IGE HU	19,95	80.05	0.51	29.62	37.72	22.03	7.34	2.78	**4.35**	26.09	**39.39**	30.18

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

2.1.2.3 Professions, economic activity

In case of employment structure and economic activity, residence of the respondents may have a profound influence, because economic structure and economic development of the analysed region is ‚two-faced'. Economic conditions and possibilities of Slovakian and Hungarian municipalities are remarkably different from each other.

The research data show strong tertiary influence during the research. The low level of unemployment is visible, but this low level can be explained by the fact that the border crossing drivers were surveyed and questioned. That means surveying

2 Common feature is that the settlements next to the River of Ipeľ/Ipoly were approximately represented with the same volume on both sides of the border during the research. This appeared regardless of the fact that – excluding the ferry crossing in Szob – the Hungarian settlements next to Ipeľ/Ipoly can reach the bridge only through Szálka-Letkés crossing point. Hence, it can be presumed that the bridge plays an important role within the region and it links the settlements that are located in the western foreground of the Börzsöny mountains with the capital city and with Hungarian regions, especially in Western and south-western parts of the country.

of the automobile drivers does not supported the emergence of the unemployed sector within the research since the permanent unemployment does not make it possible to have and/or to use vehicles. The number of those who work in agriculture and forestry was also minimal. The low level of the respondents who are employed in the sector of industry may be explained either by the fact that the Slovakian employees are directly transported into the factories (e.g. Suzuki factory in Esztergom and industrial park), which are located in Hungary, by buses, or it can be explained by the fact that the respondents descriptively explained their work and the data process registered them within the service sector. The internal categorisation within the service sector was based on educational level which was a necessary requirement for the identified profession. Category of 'quaterner 1' was remarkably strong and it included those respondents who identified themselves as 'entrepreneurs'.

Table 2.1.2.3. Personal basic data of the questionnaire-based surveys in 2014 and 2015 III. Profession / economic activity of the interviewees [categorisation is based on residence]

		Residence											
		A. Total sample				Slovakia				Hungary			
				%				%				%	
inactive	unemployed	40		3.01		28		3.98		12		1.93	
	inactive – retired / disabled	196	**271**	14.73	**20.36**	109	**155**	15.48	**22.02**	87	**115**	14.01	**18.52**
	inactive – household	13		0.98		9		1.28		4		**0.64**	
	inactive – student	22		1.65		9		1.28		12		1.93	
P	primary sector	21	**21**	1.58	**1.58**	13	**13**	1.85	**1.85**	8	**8**	1.29	**1.29**
S	secondary sector	149	**149**	11.19	**11.19**	100	**100**	14.20	**14.20**	49	**49**	7.89	**7.89**
T	tertiary 1	483		36.29		245		**34.80**		237		**38.16**	
	tertiary 2	137	**641**	10.27	**48.16**	56	**312**	7.95	**44.32**	78	**325**	12.56	**52.33**
	tertiary 3	21		1.58		11		1.56		10		1.61	
Q	quaterner 1	163		12.25		81		11.51		81		13.04	
	quaterner 2	18	**197**	1.35	**14.80**	11	**98**	1.56	**13.92**	7	**98**	1.13	**15.78**
	quaterner 3	16		1.20		6		**0.85**		10		1.61	
	unknown	52	**52**	3.91	**3.91**	26	**26**	3.69	**3.69**	26	**26**	4.19	**4.19**
	Σ	1 331		100	100	704		100		621		100	

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

There were some preliminary ideas about the differences in the field of development; nevertheless, the survey data did not show the presence of this difference. The number of employees within the industry was higher in the case of Slovakian citizens, and their number in the tertiary sector was explicitly lower than in the case of Hungarian respondents. These differences within profession and economic activity are generated by different economic structures on the two sides of the border.

2.1.2.4 Language knowledge

The fact that the language knowledge was recorded by self-declaration, strongly shades the "value" of the data on language skills and knowledge. However, we could not leave out this important characteristic from our survey that focused on relationship building

Table 2.1.2.4. Personal basic data of the questionnaire-based surveys in 2014 and 2015 IV. Language knowledge of the interviewees [answers according to residence]

				B. Residence							
		A. Total sample		Slovakia		Hungary		Štúrovo		Esztergom	
		1 331 prs.	*%*	*703 prs.*	*%*	*621 prs.*	*%*	*232 prs.*	*%*	*185 prs.*	*%*
Language	Hungarian	**1,309**	*98.35*	690	*98.15*	613	*98.71*	227	*97.84*	183	*98.92*
	Slovakian	**741**	*55.67*	664	*94.45*	75	*12.08*	216	*93.10*	27	*14.59*
	English	**459**	*34.49*	204	*29.02*	249	*40.10*	82	*35.34*	63	*34.05*
	German	**339**	*25.47*	145	*20.63*	191	*30.76*	52	*22.41*	58	*31.35*
	other	**235**	*17.66*	165	*23.47*	88	*14.17*	64	*27.59*	24	*12.97*

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

A striking data among the Hungarian and Esztergom residents is, not surprisingly, the low percentage of the Slovakian language knowledge. 12% rather refers to those respondents who have moved from the Slovakian side and not indicating the Slovakian minority. Among Slovakians, category of "other" undoubtedly refers to the "additional" knowledge of the Czech language. According to the two surveys, majority of the respondents speak Hungarian (98.35%); while more than half of them speak Slovak (55.67%). More than one third (34.49%) of the respondents identified English language, while quarter (25.47%) of the respondent identified German language as part of their linguistic knowledge.

2.1.3 Basic data of the survey

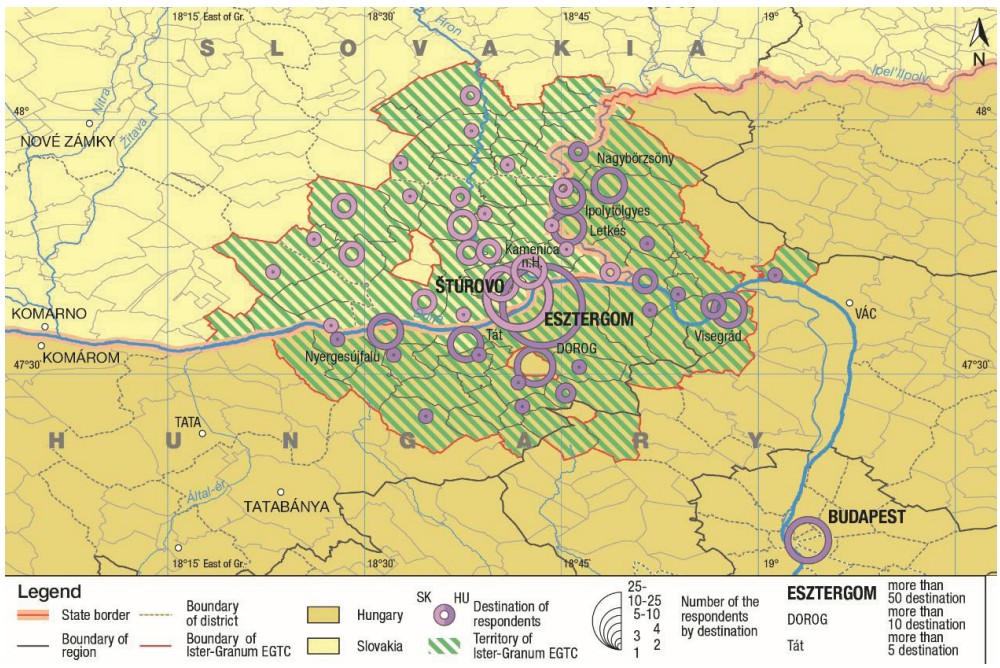
2.1.3.1 The given destination of crossing

The thematic map, Figure 2.1.3.1. (drawn by Zsolt Bottlik), represents the distribution of the given destinations on the current municipalities of Ister-Granum EGTC.

Here the prominent role of Štúrovo and Esztergom can also be clearly seen in the car traffic on the bridge. The number of the cases of the municipalities of the Hungarian side, on the right side of the Danube are close to each other; some, especially those by the highways with a bigger population, has an underlining

case number (Dorog [12]; Visegrád [8]; Nyergesújfalu [7]; Tát [6]). The given destinations of the Slovakian municipalities are distributed more *evenly*, usually with lower case numbers. Here, the municipalities on the left bank of Ipoly valley, on the Hungarian side, at the western foothills of the Börzsöny mountain (Nagybörzsöny, Ipolytölgyes, Letkés) must be noted again: these municipalities appear in a large number as destinations via Mária Valéria bridge acc. to the interviewees of summer 2014.

Figure 2.1.3.1. Basic data of the questionnaire-based survey in 2014. I.
Given destinations of the drivers [map]



drawn by: Zsolt Bottlik

Within the aggregate sample of the two surveys, the answers to the question about the *destination* by car was strongly dominated with the direction to Esztergom: almost half of the respondents (43.65%) indicated that they had been driving to this city. It is more than 60% of the given destinations of the drivers together with the percentage of Budapest (5.26%) and the Hungarian euroregion municipalities (9.09%). Certain Hungarian euroregion municipalities, namely Ipeľ/Ipoly valley destinations, can only be reached from the *opposite* crossing direction through the bridge, and this fact can decrease the major proportion.

Nevertheless, the Hungarian destinations of the category of "different" can increase this proportion.

The proportion of crossings towards Slovakia certainly reaches 40.00% within the total sample. The crossing direction is also strengthened by the previously mentioned municipalities in Ipeľ valley, on the Hungarian side and the Slovakian municipalities that belong to the category "different".

It can be stated that the given destinations of the drivers in the sample proves that; Štúrovo dominates, that is those who are crossing from Slovakia to Esztergom, Hungary.

Table 2.1.3.1. Overall basic data of the questionnaire-based survey in 2014 and 2015 I. Given destinations of the drivers

	municipiality/region	abs.		%					
given destination	Štúrovo	**362**	**27.20**	27.20	*35.74*			27.20	**70.85**
	Esztergom	**581**	**43.65**	43.65	*57.35*			43.65	
	Budapest	70	5.26	5.26	*6.91*			5.26	5.23
	other	**318**	**23.89**						
	Σ	1,331							
	IGE SK	100		7.51		*45.25*			
	IGE HU	121		9.09		*54.75*			
	IGE	*221*					*69.50*	**16.60**	16.60
	other	*97*		7.29			*30.50*	7.29	7.29
	Σ	*318*	100	100	100	100	100	100	100

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

Štúrovo and Esztergom together, as the given destination of drivers, gave some 70% of the answers of all drivers. An important – "narrower" – role of the Maria Valeria bridge be clearly seen from this data. **Based on the characteristics of the crossings, it is an "inner-city bridge" which mainly connects the city centres.**

In the light of these changes, the remaining share, which was substantially unchanged in both survey, of Budapest as a destination is notable **Thus, the 5% share of Budapest as a destination within crossing the border across the Bridge seems to be a durable rate and share.**

The fact that Budapest reached 5%, it requires the interpretation of the broader function of the bridge: the Hungarian capital and the destinations of category "other" (25%) together reached the 30% of all destinations. It can be stated on the basis of the implemented survey that only one third of the automobile

traffic crossing across the bridge was not directed into the two riverside towns. Distribution of one third of the crossings across the border is of great importance.

At the time of the two surveys, 20% of the interviewees, who had crossed the bridge, could not enrolled to any category of the traffic between the euroregion municipalities.

2.1.3.1.1 Alternative destinations

The first point of the interviews was only dealing with the destinations of the timely, the currently finished and permanently stopped driving, thus the questionnaire had been supplemented by an "inserted" question. The interviewees were asked about what different destinations they have on other occasions when they drive through the Mária Valéria bridge. The data set is very complex and provides great opportunities – together with other aspects – to reveal the destinations' locations of the bridge drivers into the smallest details. In this section of data analysis, we only demonstrate the most significant general results.

Table 2.1.3.1.1. Overall basic data of the questionnaire-based survey in 2014 and 2015 II. Given "alternative" crossing destinations of the drivers [answer-distribution/residence]3 [Territorial categorisation of the given "alternative" destinations]

				B. Residence											
		A. Total sample		SK		HU		Štúrovo		Esztergom		IGE SK*		IGE HU*	
			%		%		%		%		%		%		%
„alternative"	IGE SK	*193*	*35.03*	*11*	*3.62*	*180*	*74.38*	*3*	*2.94*	*79*	*84.04*	*8*	*7.62*	*49*	*58.33*
	IGE HU	*358*	*64.97*	*293*	*96.38*	*62*	*25.62*	*99*	*97.06*	*15*	*15.96*	*171*	*92.38*	*35*	*41.67*
	IGE	**551**	**39.67**	**304**	**34.78**	**242**	**47.83**	**102**	**34.81**	**94**	**51.09**	**179**	**34.77**	**84**	**52.83**
	egyéb	**838**	**61.25**	**570**	**65.22**	**264**	**52.17**	**191**	**65.19**	**90**	**48.91**	**308**	**65.23**	**75**	**47.17**
	Σ	1,389	100	874	100	506	100	293	100	184	100	487	100	159	100

**without Štúrovo // Esztergom*

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

The entire database contains 1389 specified crossing destinations. From this, 551 given destinations are euroregion municipalities [39.67%]. More than 60% [838] are *outside of the euroregion* or they are unidentifiable[18] destinations. This proportion, comparing to the already formed statements, underlines the bridge's significance to reach the municipalities outside of the euroregion. This overall picture is, however, changed by the clarification of the details.

The order of destination names/responses recorded by the interviewer in the questionnaire means the order of recording, therefore we can hardly talk about ranking, but it cannot be excluded. It can be assumed with good reason that during the interviews the name(s) of the most frequent crossing destination(s)

come(s) into the mind of the interviewees at first. Subsequently, we need to be cautious about the evaluation of the data set in this respect, but it is not justified to omit this opportunity.

Among the firstly given/entered 773 data, there are 175 separable entered municipalities, from which 168 destinations can be identified. The interviewees named Budapest *most frequently*, in 225 cases, which means one third [30.52%] of every related entry. It is not surprising that the Hungarian capital is so frequently named and that it has a leading position among the destinations given on the second, third and fourth place, however, the figures are decreasing. Referring to the destinations given on the first place, the Hungarian capital is followed by the Esztergom and Štúrovo "pair" with only a small difference: 99 and 83 cases [~10%].

It could be assumed that those interviewees who were *just not* driving to Esztergom or Štúrovo makes up about the 30% of the car drivers crossing the bridge the time of the survey, and about the tenth of them are driving in *other cases* to these two cities through Mária Valéria bridge on the first place. This underlines again that the bridge has role in the *narrower*, urban, *interurban* flows.

Findings:

- The majority of traffic crossing across the bridge directly destined the two settlements.
- Budapest as a travel destination represented 5-6% of the border crossings across the bridge.
- Up to 20% of cross-border interviewees could be classified into the settlements that are located within the territory of euroregion.
- The other border crossings which were used by the Slovakian residents are located outside of the euroregion.
- Residents from Hungarian municipalities who cross the border prefer intra-euroregional locations instead of outer-euroregional locations.
- This border crossing possibility assures the maintenance of much broader and more complex social network beyond the border for the residents living on the Slovakian side of the bridge.

2.1.3.2 Reason for crossing

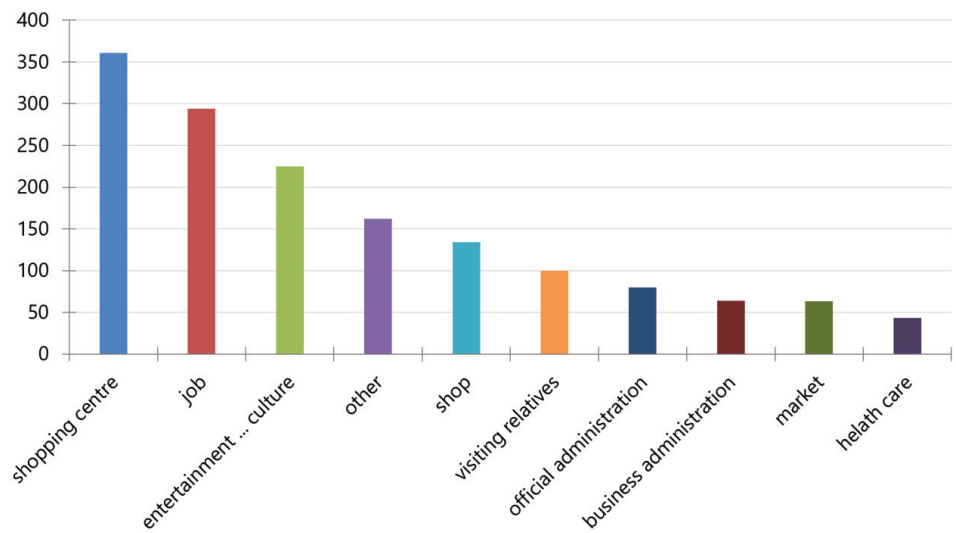
There were 10 possible answers available to the question dealing with the *reasons* of bridge-crossings by the car passenger, among which more than one answer could have been marked.[3]

Table 2.1.3.2. Compound basic data of the questionnaire-based survey in 2014 and 2015 III. Given crossing motives of the drivers [answers distributed acc. to residence I.]

						B. Residence					
		A. Total sample				SK				HU	
		1 526		%		*833*		%		*688*	%
job		**294**		**21.55**		166		**21.64**		128	**21.55**
shopping	shopping centre	**361**		**26.47**		**265**		**34.55**		96	16.16
shopping	shop	**134**	**558**	9.82	**40.91**	67	384	8.74	*49.80*	66	68	11.11	*29.46*
shopping	market	**63**		**4.62**		50		6.52		13	**2.19**
official administration		**80**		5.87		46		6.00		33	5.56
business administration		**64**		4.69		24		**3.13**		40	6.73
health care		**43**		3.15		25		3.26		18	3.03
entertainment, leisure-time, culture		**225**		16.50		83		10.82		**141**	**23.74**
visiting relatives		**100**		7.33		41		5.35		59	9.93
other [without further details]		*162*		100,00		*66*		100,00		*94*	100,00

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

Graph 2.1.3.2.1. Overall basic data of the questionnaire-based survey in 2014 and 2015 I. Distribution of the interviewees' given crossing reasons I. [total sample; order of recordings]



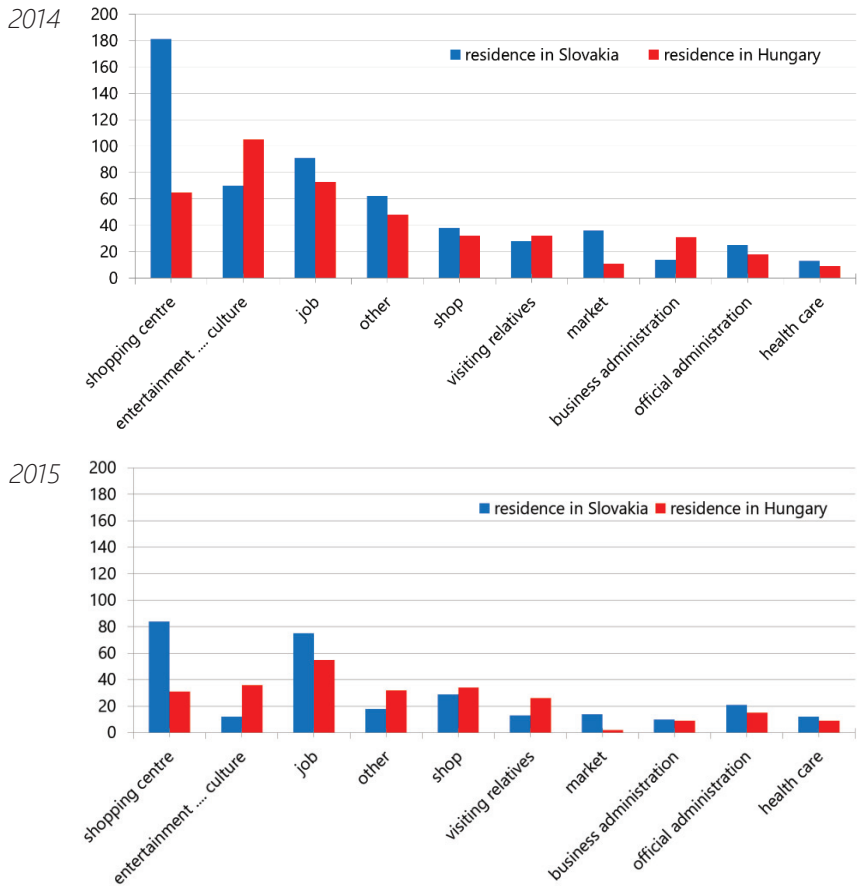
3 Why do (did) you cross the bridge? [more answers can be given] job / shopping //à shopping centre / shop / market // official administration / business administration / health care / entertainment, free-time, culture / visiting relatives / other:

The *territoriality* of the answers is a significant aspect when analysing the crossing reasons. Table 2.1.3.2. shows great differences between the groupings of the interviewees who gave Slovakia or Hungary as a residence. The drivers who gave Slovakia as a residence chose the shopping centres as crossing reason with an overwhelming majority (2014: 51.61%; 2015: 46.52%); which highly surpasses the corresponding value of the total sample. Shopping as crossing reason (51.61%) already exceeded the average of the total sample with 10%. Job as crossing reason has the same percentage as in the average of the total sample (2014: 18.15%; 2015: 28.21%) of the drivers who had given Slovakia as residence crossed the bridge. "Entertainment, leisure-time, culture" as crossing reason is on the third – fifth place within this group (2014: 14.11%; 2015: 4.44%). On the contrary, among the drivers who gave Hungary as residence, the crossing reasons appear here with a bit more balanced percentages. The category "entertainment, leisure-time, culture" dominated in the total sample (2014: 28.00%; 2015: 16.74%). Shopping as a crossing reason – altogether with the different cases – appeared with 28.53% in 2014 and with 21.63% in 2015. The percentage of visiting relatives and business administration as crossing reasons were relevant among the Hungarian respondents. The percentage of health care as crossing reason was insignificant in case of both sides.

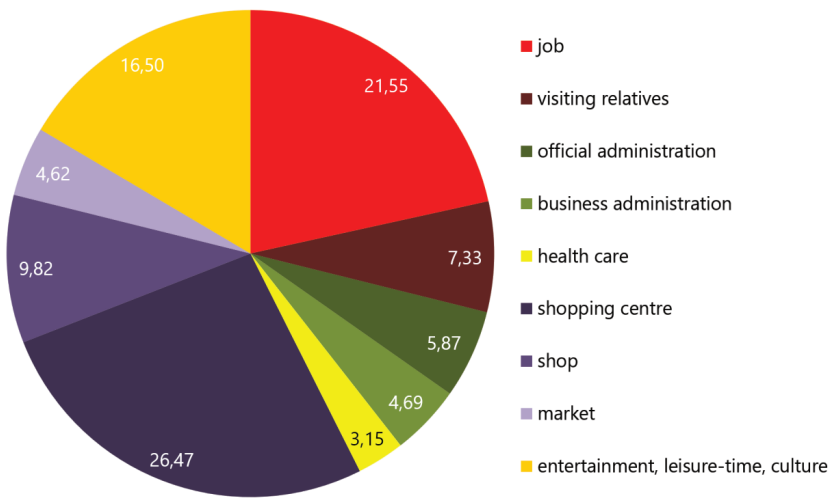
Where significant differences appeared between the two surveys was the reasons for crossing the border. The reason of work and workplace experienced significant increase within the total sample [18.69%→26.63%] and also within all the given reasons. The reasons of shopping fell slightly back [41.63%→39.63%], but shopping centres still dominated within the shopping category; the share of the market hugely dropped, while shops received bigger share and visibility. The most spectacular decrease was experienced in the category of "entertainment, leisure-time, culture" [20.18%→9.96%].

These changes are not so much considerable within territorial aspects. "Territorial distribution" of reasons is without any significant change, exceptions are the domain of work, where an increase is visible, and the case of Esztergom. Comparing the two surveys, it can be seen that the most spectacular decrease was in the domain of "entertainment, leisure-time, culture" among the Hungarian residents. On the other hand, the group of Esztergom is the only one, where the work/workplace was not the main decisive factor in the 2015 survey [22.94%→20.00%], but shopping gained bigger share [30.28%→41.43%], mainly shops themselves.

Graph 2.1.3.2.2. Overall data of the questionnaire-based survey in 2014 and 2015 I. Distribution of the interviewees' given crossing reasons II. [answers according to residence]



Graph 2.1.3.2.3. Overall data of the questionnaire-based survey in 2014 and 2015 II. Distribution of the interviewees' given crossing reasons III. [acc. to nature of connections]



Graph 2.1.3.2.3. distributes the crossing reasons according to the *nature of connections*, and it intends to summarize the data of the sample due to those crossing reasons which necessarily assume closer or just occasional connections. The "reason-group": job / visiting relatives / official administration & business administration / health care refer to closer and regular connections with high probability.

The *aspect of relations* shows that the survey in 2015 experienced an increase [38.19%→50.41%] in this domain and it refers to closer and more regular relations, instead of occasional connections and crossings. At the time of the survey in 2014, slightly more than *third* of the passengers traveling by car crossed the bridge with a reason that assumes the existence of regular and deeper connections beyond the border. This means that nearly two-thirds of the respondents did not indicate any *necessarily* frequent and more complex relationships. According to the survey in 2015, more than half of the automobile drivers crossed the borders and the bridge because of close and deeper relations on the other side. However, the data of the survey can be read also in a different way, namely, nearly half of the crossing reasons do not *necessarily* refer to frequent and complex relationship.

A conservative conclusion is that – since the answers were given to such questions which asked about timely crossings and more than one reason could have been given – the data of the sample demonstrate that slightly more than one third of the car drivers crossed the bridge at the time of the two surveys with a reason which assumes regular and deeper connections. Almost two third of the crossing reasons in the sample do not refer to necessarily frequent and complex connections.

Findings:

- More than third of the automobile passengers cross the borders because ordinary and deep relationships exist beyond the borders.
- Nearly two third of the automobile passengers do not necessarily refer to any common and complex relationships beyond the bridge; the majority of respondents with Hungarian residence can be included in this circle.

2.1.3.3 Crossing frequency

The crossing frequency is an important indicator in revealing the proportion of persons, who regularly and those who occasionally cross the bridge, to give us a picture on the *strength* and *depth* of relations of the two areas connected by the bridge.[4]

Table 2.1.3.3. Aggregated basic data of the questionnaire-based survey in 2014 and 2015 IV. Frequency of border crossings of the interviewees [answers distributed acc. to residence I.]

			Residence											
	Σ		SK		HU		IGE SK*		IGE HU*		Štúrovo		Esztergom	
		%		%		%		%		%				
many times a day	**210**	15.86	**148**	**21.14**	59	9.56	71	18.11	15	7.11	**71**	**30.60**	35	19.02
daily	**115**	8.69	82	11.71	33	5.35	40	10.20	13	6.16	37	15.95	16	8.70
several times a week	**240**	18.13	137	19.57	102	16.53	73	18.62	43	20.38	49	21.22	36	19.57
weekly	**262**	**19.79**	**148**	**21.14**	**114**	**18.48**	**93**	**23.72**	**47**	**22.27**	48	20.69	**40**	**21.74**
once a month	**132**	9.97	49	7.00	83	13.45	33	8.42	31	14.69	8	3.75	18	9.78
several times a month	**188**	14.20	100	14.29	88	14.26	70	17.86	32	15.17	18	7.76	25	13.59
at least six times a year	**34**	**2.57**	13	1.86	20	**3,24**	4	1,02	8	3,79	1	0,43	2	**1,09**
few time a year	**98**	7.40	21	3.00	76	12.32	8	2.04	18	8.53	0	**0.00**	10	5.43
first time in this year	**45**	3.40	2	**0.29**	42	6.81	0	**0.00**	4	**1.60**	0	**0.00**	2	**1.09**
Σ	1,324	100	700	100	617	100	392	100	211	100	232	100	184	100

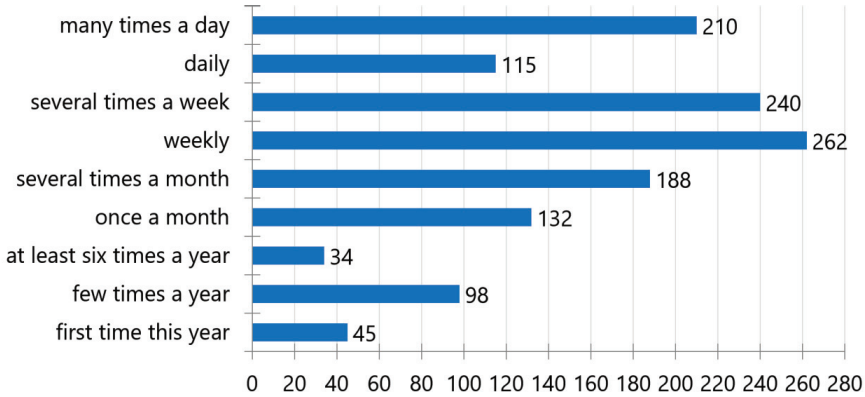
***without Štúrovo [Š] // Esztergom [E]*

source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

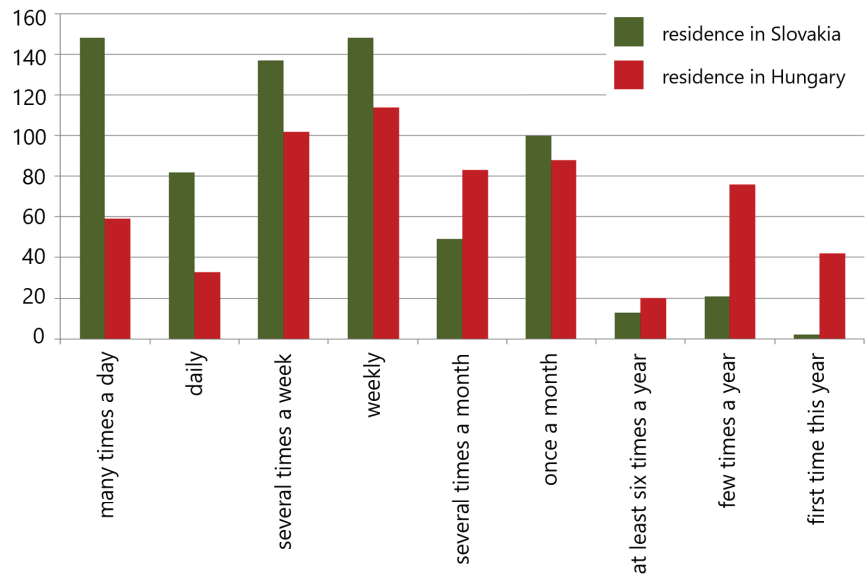
It is remarkable that the marked differences between the residents of Slovakia and Hungary are significant in the case of the residents of Štúrovo and Esztergom, too. In the case of the respondents from Štúrovo in 2014 and 2015, those who cross the bridge daily, as well as several times a week constitute a majority (~87%), while the results of Esztergom show a wide variation. Those who cross the bridge on a weekly frequency were in majority (~43%), while those who crossed the border on a daily basis increased above 30% from 25%. There were no respondents classified as "tourists" in Štúrovo contrary to the residents of Esztergom, where 5.49% of respondents claimed to cross the bridge every once in a while and which was increased to 7% in 2015.

4 The frequency of crossing the Mária Valéria bridge was asked in a closed question. There were nine answers to choose from, and they aimed to identify four major categories of the respondents with car. The answers included the followings, j on a daily basis / k with high frequency / l more rarely, but regularly / m rarely and occasionally, while the last one aimed to filter out the "tourists".

Graph 2.1.3.3.1. Overall basic data of the questionnaire-based survey in 2014 and 2015 III. Frequency of border crossings of the interviewees [total sample]



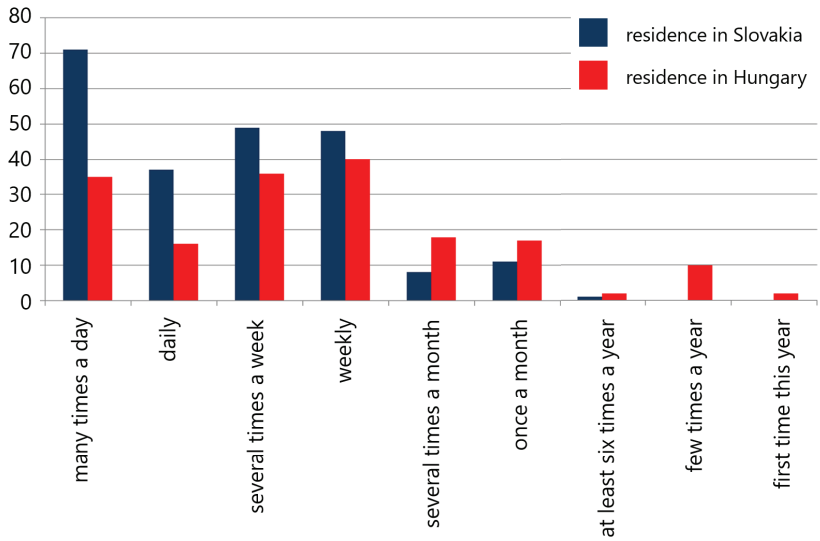
Graph 2.1.3.3.2. Overall basic data of the questionnaire-based survey in 2014 and 2015 IV. Frequency of border crossings of the interviewees [answers distributed acc. to residence I.]



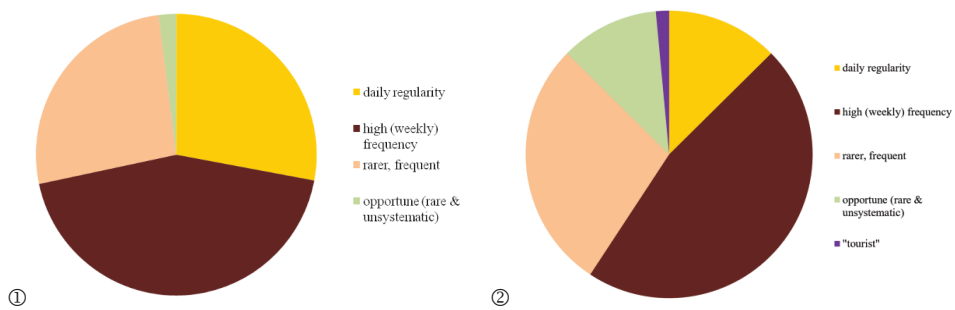
The bridge itself and crossing across of it results in relations which have substantially different character, strength and depth for the Hungarians than it does for the Slovakians within this Euroregion. The analysis of the answers given on the question about the frequency of crossing suggests that respondents with a passenger car from the Hungarian side (except those from Esztergom) have relations of *generally* lower strength and depth compared with the respondents from the Slovakian side, whose relations are predominantly characterized by deeper strength and depth of relations.

Therefore, the strength of relations shows an asymmetric picture: the residents of Slovakia and Štúrovo have a stronger inclination and need to cross the bridge – indirectly, to build and maintain relations – compared with respondents living in Hungary and Esztergom.

Graph 2.1.3.3.3. Basic data of the questionnaire-based survey in 2014 and 2015 V.
Frequency of border crossings of the interviewees [answers distributed acc. to residence II.]



Graph 2.1.3.3.4. Overall basic data of the questionnaire-based survey in 2014 and 2015 XV.
Frequency of border crossing of the interviewees
[answers distributed acc. to residence III.; ①: IGE SK, ②: IGE HU]



The comparison of residents of Slovakia and Hungary *within the Euroregion* sheds light on marked differences (Graph 2.1.3.12).[5] Since the share of those people who cross the bridge with high (weekly) frequency roughly equals (~45%), the

5 Understandably, this category does not comprise the residents of Štúrovo and Esztergom.

share of daily crossings shows considerable differences, their share in the case of Slovakian respondents (~28%) being twice as much as in the case of residents of the Hungarian Euroregion (~12%). Furthermore, there are hardly any "tourists" and occasional crossers among the residents of the Slovak Euroregion (~2%), as opposed to the fairly higher share on the Hungarian side (~9%). The share of rare but frequent crossings is almost equal on the two sides.

Findings:

- Crossing of the border is *usually* less frequent among the passengers from the Hungarian settlements, with exception of the *residents of the city of Esztergom*, while in the case of the passengers from the Slovakian settlements, the crossing of the border is *predominantly* **characteristic.**

2.1.3.4 Relations on the "other side"

The next and the final point of the questionnaire examines the existing relations on the other side of the border and it attempts to clarify the existing relation and their network.[6] Exploration of this domain helps us to understand the basic nature of crossings across the bridge that is substantially influenced by the existence of personal networks, contacts and relations. Subsequently, we can deduce the *strength* and the density of *complexity* of these relations.

Table 2.1.3.4.1. Overall basic data of the questionnaire-based survey in 2014 and 2015 V. The given relations on the "other side" [answers distributed acc. to residence]

			B. Residence											
	ΣΣ		SK		HU		Štúrovo		Esztergom		IGE SK*		IGE HU*	
		%	266	%	244	%	96	%	74	%	145	%	76	%
does not exist	**361**	19.63	**123**	**11.13**	**238**	**32.87**	**31**	**8.03**	**51**	22.77	**71**	**11.75**	**83**	**33.74**
relatives	546	29.69	**380**	**34.39**	162	22.38	134	34.72	61	27.23	**207**	**34.27**	58	23.58
friends	586	**31.87**	**380**	**34.39**	202	27.90	**143**	**37.05**	**76**	**33.93**	205	33.94	65	26.42
professional	346	**18.81**	222	20.09	122	**16.85**	78	20.21	36	**16.07**	121	20.03	40	**16.26**
Σ	1 839	100	1 105	100	724	100	386	100	224	100	604	100	246	100

**without Štúrovo [Š] // Esztergom [E]*
source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th -27th of March, 2015

There was a visible difference between the answers of the Slovakian and Hungarian residents. The share of those who do not have any relations beyond the border was the lowest among the Slovakian residents [11.13%]; the proportion

6 Because of the nature of the questions, more answers could be indicated here, naturally the exception was the ‚does not exist' answer.

of those who have relatives and friends was slightly above 30%; and the share of professional contacts reached 23.9%. However, the answers of the Hungarian residents mirror some important differences, especially in the domain of those who do not have any relations beyond the border which achieved the highest share [~35%]; the proportion of those who have relatives and professional contacts was approximately the same [~20%]; the share of relation with friends reached a quarter of the given answers. The visible asymmetry unanimously mirrors that the relations beyond the border have different weight for the Slovakian and Hungarian residents.

Naturally, these differences were more balanced in the case of Štúrovo and Esztergom, but the difference was still present and palpable. 7.11% of the respondents of Štúrovo expressed that they do not have *any* relations beyond the border, while 35% of them indicated the existence of relatives beyond the border. On the other hand, 26.24% of the respondents of Esztergom expressed that they do not have *any* relations beyond the border. This share is still high, but it is lower as it was in the case of all Hungarian residents.

In case of *relations beyond the border*, the survey data from 2015 was profoundly changed in comparison with the survey data from 2014. On the one hand, the number of the interviewees without any relations experienced decrease [20.25%→18.47%], on the other hand the number of friendly relations is expressive [29.50%→36.31%], while the share of professional relations significantly dropped [22.67%→11.58%]. From the perspective of Slovak and Hungarian residency, the differences remained the same. Nevertheless, important change is the decrease of the number of professional relations in the case of Hungarian respondents [23.99%→10.49%], and the share of those who do not have any relations similarly experienced a significant fall [35.01%→29.21%].

Table 2.1.3.4.2. shows the distribution ratios in answer-categories and it shows how do the answers go above, or remain below the total sample.

Settlements show significant differences between the data of the two surveys in the domain of *given* relation forms beyond the border. The survey in 2014 mirrored very strong relation links towards the narrower region. However, this structure not only disappeared, but also turned in the 2015 survey, where the euroregional links appeared in much more limited manner [60.12%→47.25%], while the links *beyond* the euroregion dominated, especially in the case of the Slovakian settlement groups.

Probably, the most important question is the origin of these contacts, establishment and links of contacts to specific municipalities. The basic contours are visualized by Table 2.1.3.4.3.

Table 2.1.3.4.2. Overall basic data of the questionnaire-based survey in 2014 and 2015 VI. The given relations on the "other side" [acc. to residence of the respondents]

Residence	Σ*	without answer	%	does not exist	relatives	friends	professional	does not exist	relatives	friends	professional
				persons				%			
Total sample	1,263	68	5.38	361	546	586	346	*28.58*	*43.23*	*46.40*	*27.40*
Slovakia	668	36	5.39	123	380	380	222	**18.41**	**56.89**	**56.89**	33.23
Hungary	589	31	5.26	238	162	202	122	**40.41**	27.50	34.30	**20.71**
Štúrovo	196	11	5.61	31	134	143	78	**15.82**	68.37	**72.96**	39.80
Esztergom	172	13	7.56	51	61	76	36	29.65	35.47	**44.19**	**20.93**
IGE SK**	372	23	6.18	71	207	205	121	**19.09**	**55.65**	55.11	32.53
IGE HU**	200	11	5.50	83	58	65	40	**41.50**	29.00	32.50	**20.00**
average			*5.84*					*27.48*	*45.48*	*49.32*	*27.87*

** Total number of respondents (without those respondents who did not answer).*
***without Štúrovo [Š] // Esztergom [E]*
source: "PHANTOM-BORDER" project; I. survey: 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

Table 2.1.3.4.3. Overall basic data of the questionnaire-based survey in 2014 and 2015 VII. Contact network of the interviewees beyond the border [answer-distribution/residence] [Territorial grouping of contacts beyond the border with names of the municipalities]

		A. Total sample		B. Residence											
				SK		HU		Štúrovo		Esztergom		IGE SK*		IGE HU*	
		prs.	%	prs.	%	prs.	%	prs.	%	prs.	%	prs.	%	prs.	%
contacts "beyond the border"	IGE SK	*293*	*37.81*	*15*	*3.28*	*275*	*88.14*	*3*	*1.88*	*125*	*93.28*	*11*	*4.04*	*92*	*83.64*
	IGE HU	*482*	*62.19*	*443*	*96.72*	*37*	*11.86*	*157*	*98.13*	*9*	*6.72*	*261*	*95.96*	*18*	*16.36*
	IGE	**775**	**55.12**	**458**	**49.95**	**312**	**64.73**	**160**	**51.61**	**134**	**72.04**	**272**	**52.51**	**110**	**73.33**
	other	**631**	**44.88**	**459**	**50.05**	**170**	**35.27**	**150**	**48.39**	**52**	**27.96**	**246**	**47.49**	**40**	**26.67**
	Σ	1,406	100	917	100	198	100	310	100	186	100	518	100	150	100

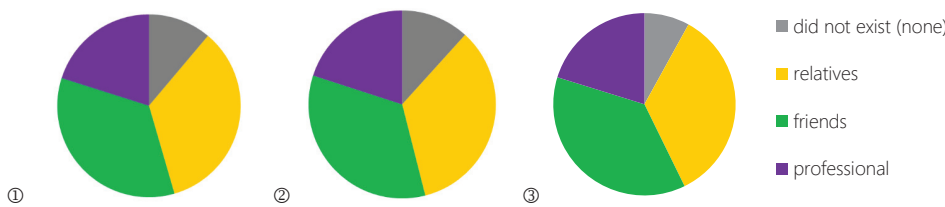
source: "PHANTOM-BORDER" project; I. survey, 7th-10th of July, 2014; II. survey: 24th-27th of March, 2015

The given contact networks mainly involve a narrower "territorial" area than the "alternative" path objects of the vehicles which cross the border. Nevertheless, there is a much stronger boundedness to a narrower region in case of the admittedly and really existing contacts beyond the borders: 60% of all the mentioned municipalities are part of the euroregion.

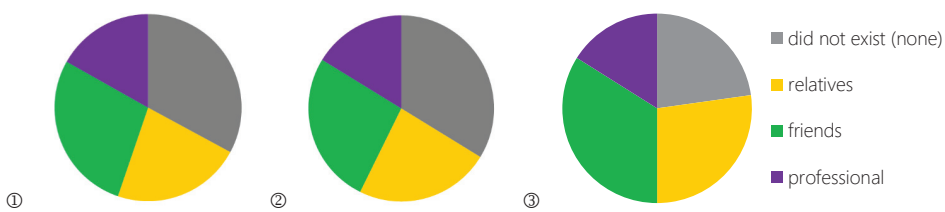
Summarizing the data of the 2014 and 2015 survey, the *most commonly mentioned* municipality was the city of Esztergom, it was mentioned 224 times, which embodies one third of all [30.11%]. The second most commonly cited settlement was the city of Štúrovo [169; 22.72%]. Thus, it is clearly visible that these two cities of the euroregion and their first mentioning represents more than half of all the mentioned municipalities. Moreover, these cities play a crucial role in other mentioning, namely as second and third mentioning. These numbers and percentages once again highlight the role of the Mária Valéria bridge that assures *narrower*, urban and intra-city links and contacts. Besides Štúrovo and Esztergom, the capital city of Budapest also appears as highly important. The capital city was mentioned 138 times [18.55%] together in 2014 and 2015. These three municipalities embody more than half of the mentioned cross-border relations during the research. Only the city of Dorog is close to them. The most cited Slovakian settlement was the city of Nové Zámky.

Conclusions of this part are the following ones: the established links, assured by the Mária Valéria bridge across the Danube river, can be characterized by different patterns within the euroregion on both sides of the Danube.

Graph 2.1.3.4.1. Aggregated basic data of the questionnaire-based survey in 2014 and 2015 VI. Relations of the interviewees beyond the border [answers distributed acc. to residence I.; 1: SK, 2: IGE SK, 3: Štúrovo]



Graph 2.1.3.4.2. Aggregated basic data of the questionnaire-based survey in 2014 and 2015 VII. Relations of the interviewees beyond the border [answers distributed acc. to residence II.; 1: HU, 2: IGE HU, 3: Esztergom]



The examined three types of relations have explicitly different weights on the two sides of the border. Types of contacts and relations in case of the Slovakian part of the euroregion followed the sequence: friends → relatives → profession; while the residents of Štúrovo had a slightly different sequence: relatives → friends → profession. The Hungarian side is mainly characterized by contact types of relation with friends, and the relatives and professional type of contacts are represented with lower impact.

The second conclusion is the different structure of contact network on the two sides of the border. To be specific, 60% of the residents of Hungarian part of the euroregion have contact network on the other side, while this approaches is 80% in the case of the residents of Slovakia.

Third conclusion is that if the Hungarian residents have contact beyond the border, those contacts are limited either to the territory of the euroregion or to the city of Štúrovo itself. On the other side, the residents of Slovakian part of euroregion have contacts not only within euroregion, but half of their contacts stretches beyond the territory of euroregion.

Findings:

- Relationship beyond the border is present in different weight on the two sides of the border.
- The Mária Valéria bridge assures much more extensive and differentiated formation and functioning of networks for the citizens on the Slovakian side than for the citizens on the Hungarian side.
- Residents of the city of Esztergom have much broader and closer relationships across the border than the resident of the other Hungarian settlements of the euroregion.