ERASMUS+
COOPERATION PARTNERSHIPS IN SPORT

"FIT-BALKANS"

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REPORT
STUDY RESULTS ANALYSES

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1.0 INTRODUCTION

Fit Balkan project is aims to promote physical activity and improve the subjective well – being of young women at the age between 18 and 30 from six different countries, living in five different cities. The project involves women from Greece, Bulgaria, Romania, Serbia and North Macedonia, living in Athens, Plovdiv, Bucharest, Nis and Stip accordingly and it is focused on following three main objectives:

- To provide research results for physical activity level, eating habits and personal well – being of women from the target group, as a baseline for designing programs for improvement
- Educate women at the age between 18 and 30 for benefits of physical activity, healthy and active lifestyle;
- Design interventional programs that will support their wellbeing and healthy living as well as provide resources for intervention with policy makers.

Following the defined objectives, presented Report summarize the results from research study conducted in the frames of the project, designed to provide overview of current situation with physical activity level and well – being of women in project countries and to identify the aspects that should be improved.

2.0 METHOD OF RESEARCH

The aim of the research study was to identify the initial state of participants related to their level of physical activity and wellbeing, eating habits, facilities of the neighbourhood for active transport and physical activity, personal status etc. The study was conducted in period May – September 2023 in all five project countries, following same research protocol.

2.1. Research instrument

The research study was conducted using specially designed questionnaire for the purposes of the project. It integrated different standardized protocols focused on different aspects of health, physical activity, nutrition, and subjective wellbeing. The research instrument included:

- General data for involved participants including age, place of living, high and weight, occupation, marriage status, subjective evaluation of personal health condition, number of persons in the family, available transportation means, monthly incomes.
- Questions related to types of residence and neighbourhood (walking and cycling network, neighbourhood infrastructure and availability for walking or cycling, its safety, most dominant and available means of transportation, frequency of use of public transport, neighbourhood facilities for social life and leisure time activities etc.
- International Physical Activity Questioner (IPAQ) aimed to identify self – reported physical level of participants, including questions for their involvement in vigorous and moderate physical activity, time spend in walking, sitting and screen time.
- The nutrition status was identified with seven questions aimed to identify eating habits of involved participants, including type of nutrition, frequency of meals, water consumption etc.
- The Warwick – Edinburg Mental Well – being Scale (WEMWBS) aimed to identify self – reported wellbeing of participants was applied. It is composed from 14 different statements

referring to personal feelings and different aspects of wellbeing. Statements were designed as Likert scale offering following categories: none of the time, rarely, some of the time, often, all of the time.

▪ The last part of the questioner refers to interest to join in interventions designed from Fit Balkans team, identification of areas that should be changed or improved and personal goals.

2.2. Participants

Participants in the study were 1220 women at the age between 18 and 30 years old, from five different cities in Greece (Athens), Bulgaria (Plovdiv), Romania (Bucharest), Serbia (Nis) and North Macedonia (Sthip). From the total sample, 135 participants (11%) were from Greece, 92 (7%) were from Bulgaria, 597 (49%) from Romania, 205 (17%) from Serbia and 191 (16%) from North Macedonia (Figure 1).
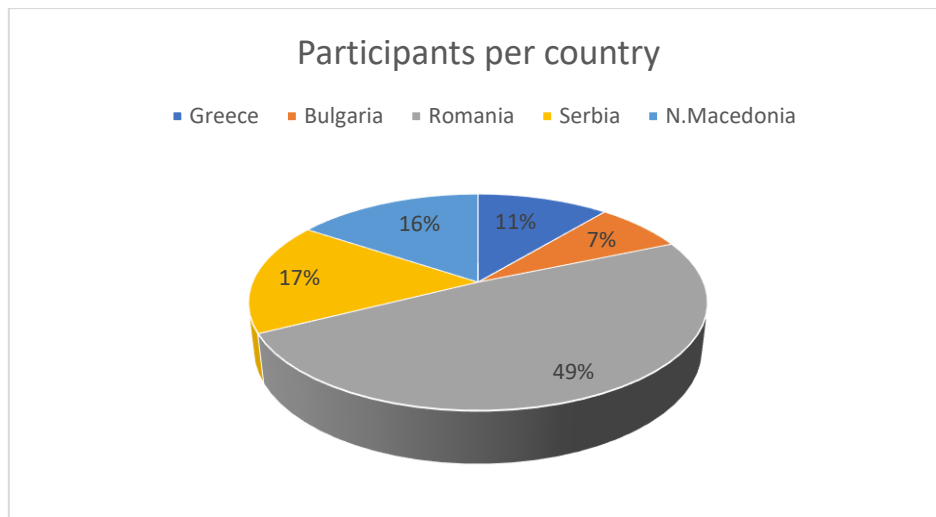
Figure 1: Distribution of participants per country

2.2.1 Age of participants

Figure 30 shows the age distribution of the whole sample, but also per country. Romania has the youngest sample with average age of 20.3 while Serbia has the oldest sample with an average age of 26.8. The youngest participant in the survey is 17 years old from Greece while the oldest is 38 years old and is Bulgarian. Ages are more evenly distributed in Bulgaria and Greece, while the Romanian and North Macedonian samples are more skewed towards the young ages. Table 1 summarizes the overall statistics and per country for the age.

Table 1. Age Statistics

	Sample Size	Range	Max	Min	Average	St Error	St Deviation	Variation	Invalid
Total	1222	21	38	17	22.4	0.1	4.0	16.1	0
Greece	135	17	35	18	24.6	0.3	3.1	9.5	0
Bulgaria	94	20	38	18	24.2	0.4	3.5	12.2	0

Romania	597	13	31	18	20.3	0.1	3.3	10.7	0
Serbia	205	9	30	21	26.8	0.1	2.0	4.2	0
North Macedonia	191	13	30	17	21.8	0.3	3.7	13.4	0
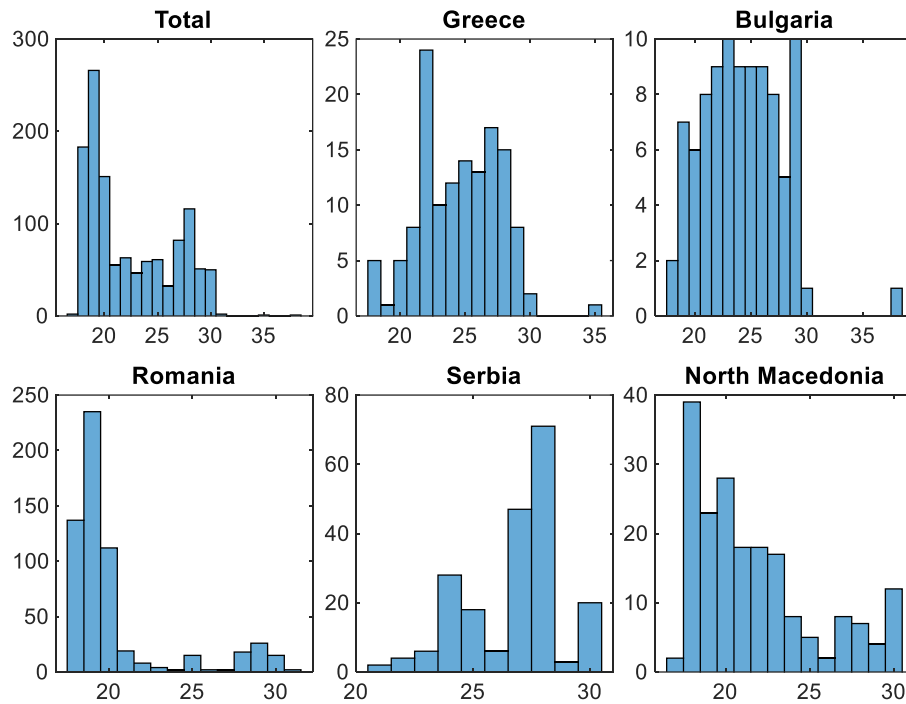
Figure 2. Age Histograms

2.2.2. Height of participants

Figure 3 depicts the distribution of heights in the different countries. The average age among all participating countries is 166.7cm. The tallest participant is in Romania (190cm) and the shortest in Bulgaria (149cm). All countries have a same average height with Serbia having a slightly higher average at 168cm.

Table 2. Height Statistics

	Sample Size	Range	Max	Min	Average	St Error	St Deviation	Variation	Invalid
Total	1221	46	195	149	166.7	0.2	6.5	42.6	1
Greece	135	33	183	150	165.8	0.5	6.1	37.4	0
Bulgaria	94	29	178	149	166.5	0.6	5.7	32.3	0
Romania	597	40	190	150	166.4	0.3	6.6	43.4	0
Serbia	205	24	181	157	168.0	0.4	6.0	36.5	0

North Macedonia	190	45	195	150	166.7	0.5	7.3	53.3	1

Height Distribution
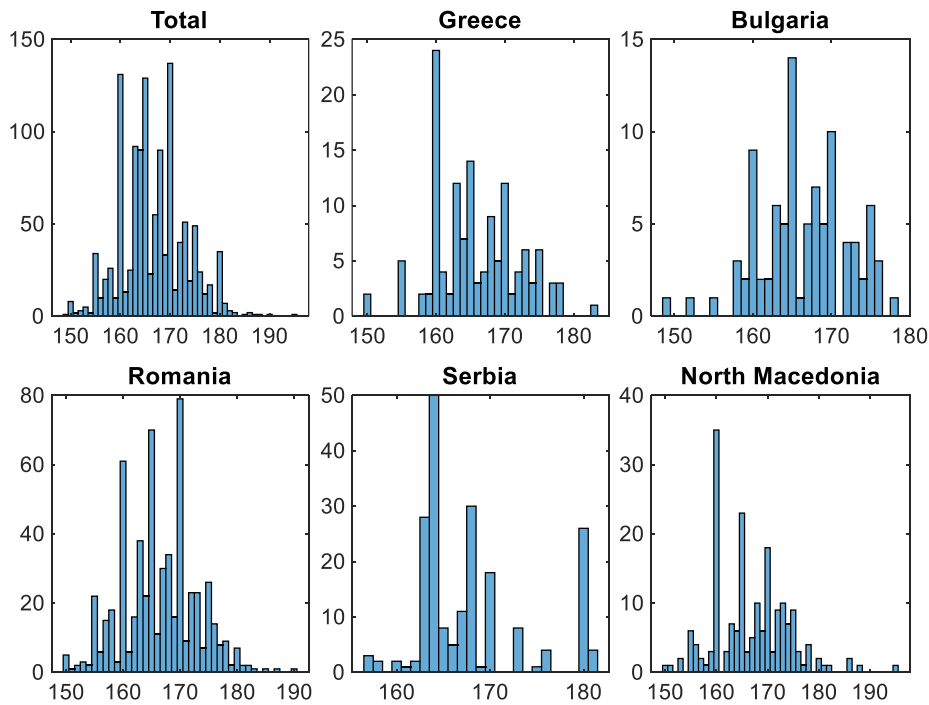
Figure 3. Height Histograms

2.2.3. Weight status

Figure 4 shows the weight distribution of the participants and Table 3 summarises the corresponding statistics. The average weight among the different countries is 62.2kg with the Bulgarian average being slightly lower at 58.5kg. It can be observed from the histograms that in the majority of the countries, weight is normally distributed, with Romania and North Macedonia to be slightly skewed towards the higher weight values.

Table 3. Weight Statistics

	Sample Size	Range	Max	Min	Average	St Error	St Deviation	Variation	Invalid
Total	1222	86	125	39	62.2	0.3	11.2	125.4	0
Greece	135	78	123	45	62.0	1.0	11.5	131.4	0
Bulgaria	94	52	95	43	58.5	0.9	9.1	82.8	0
Romania	597	86	125	39	61.2	0.5	12.2	148.6	0
Serbia	205	27	80	53	66.9	0.4	6.3	39.3	0
North Macedonia	191	65	105	40	62.5	0.8	11.4	130.2	0
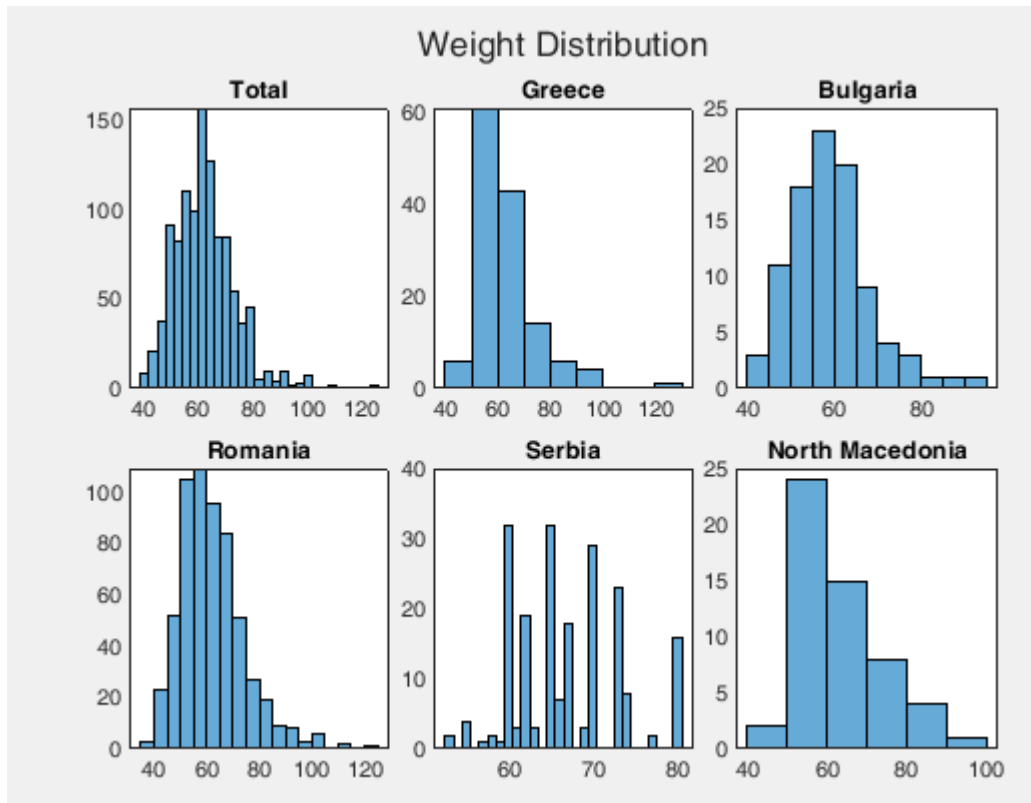
Figure 4. Weight Histograms

2.2.4. Work status

Figure 5a depicts the work status per country. As expected, more than half of the respondents are student as the subject of the current project is woman between 18 and 30 years of age. As shown in the age section, the average age is 22 years, during which the majority is in its student years. Interestingly, all respondents from Serbia are employed. Following students, the 38.54% of the respondents is employed and 2.54% is employed. Among all countries, housekeeping has an extremely low share of answers.

Table 4. Work Status per Country

	Paid Work	Unemployed	Permanently Sick	Housework	Student
Total	38.54	2.54	0.08	1.06	57.77
Greece	52.59	5.93	0.74	1.48	39.26
Bulgaria	58.51	5.32	0.00	0.00	36.17
Romania	16.08	1.01	0.00	0.84	82.08
Serbia	100.00	0.00	0.00	0.00	0.00
North Macedonia	23.04	6.28	0.00	3.14	67.54
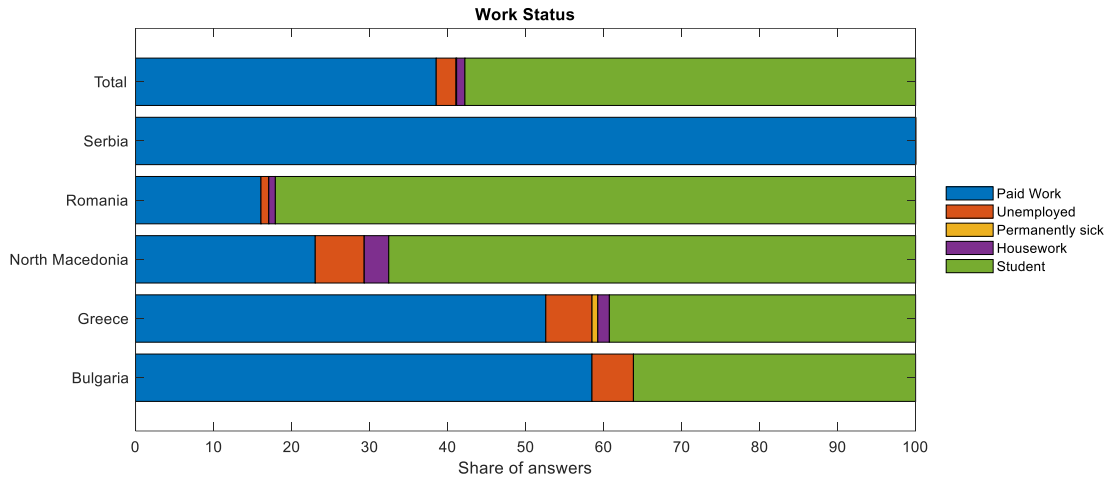
Work Status

Figure 5a. Work Status per Country

Figure 5b, illustrates the work status per age. It can be clearly seen, that gradually with age work status swaps from student to employed to a paid job. By the age of 30, the majority of respondents are employed or doing housework. It must be noted that there are only a few replies from older ages, so the results for these ages cannot be characterized as representative.
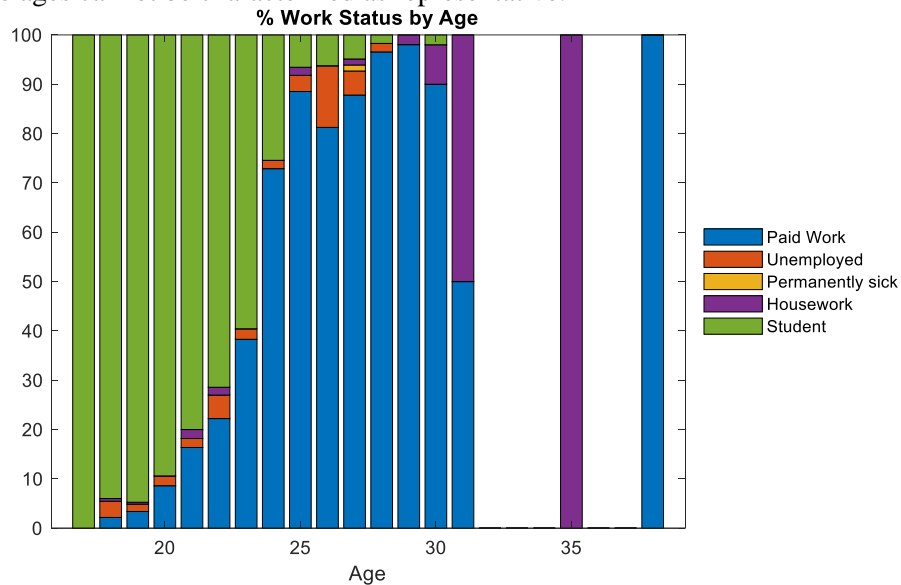
Figure 5b. Work Status by Age

Table 5. Work Status per Age

Age	Paid Work	Unemployed	Permanently Sick	Housework	Student
17	0.00	0.00	0.00	0.00	100.00
18	2.19	3.28	0.00	0.55	93.99
19	3.38	1.50	0.00	0.38	94.74
20	8.61	1.99	0.00	0.00	89.40
21	16.36	1.82	0.00	1.82	80.00
22	22.22	4.76	0.00	1.59	71.43
23	38.30	2.13	0.00	0.00	59.57
24	72.88	1.69	0.00	0.00	25.42

25	88.52	3.28	0.00	1.64	6.56
26	81.25	12.50	0.00	0.00	6.25
27	87.80	4.88	1.22	1.22	4.88
28	96.55	1.72	0.00	0.00	1.72
29	98.04	0.00	0.00	1.96	0.00
30	90.00	0.00	0.00	8.00	2.00
31	50.00	0.00	0.00	50.00	0.00
32	0.00	0.00	0.00	0.00	0.00
33	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	100.00	0.00
36	0.00	0.00	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00	0.00
38	100.00	0.00	0.00	0.00	0.00

2.2.5. Marital status

Table 6a shows the marital status by country. Again, as the collected sample in on average young in age, the dominant status is being single, followed by "being in relationship but living separately". Married respondents constitute 22.91% of the total answers. Similarly, to work status results, the majority of respondents closer to 20 are single, while the ones closer to 30 are married. The highest share of married is reported in Serbia. Bulgaria has the highest share of single respondents. The results of the marital status per country are depicted in Figure 6a and per age in Figure 6b.

Table 6a. Marital Status by country

	Single/ Divorced/ Widowed	Married/ Living with my partner	In a relationship but living separately
Total	45.91	22.91	31.18
Greece	42.22	14.07	43.70
Bulgaria	48.94	26.60	24.47
Romania	47.24	14.41	38.36
Serbia	43.41	56.59	0.00
North Macedonia	45.55	17.80	36.65

Table 6b. Marital Status by age

Age	Single/ Divorced/ Widowed	Married/ Living with my partner	In a relationship but living separately
17	100.00	0.00	0.00
18	61.20	7.65	31.15
19	50.00	8.65	41.35
20	44.37	9.27	46.36
21	47.27	14.55	38.18
22	42.86	19.05	38.10
23	46.81	17.02	36.17

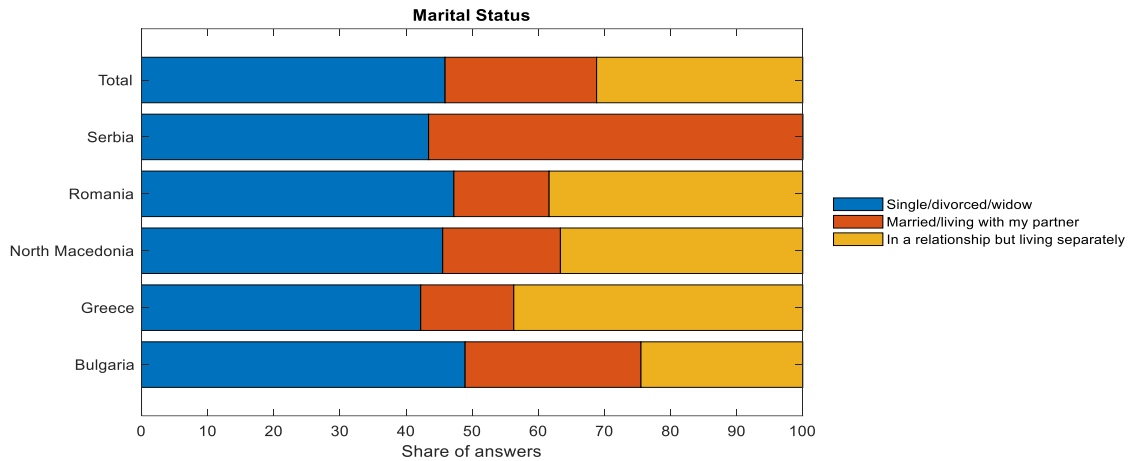| 24 | 28.81 | 54.24 | 16.95 |
25	36.07	29.51	34.43
26	50.00	28.13	21.88
27	14.63	68.29	17.07
28	65.52	19.83	14.66
29	39.22	45.10	15.69
30	18.00	74.00	8.00
31	0.00	100.00	0.00
32	0.00	0.00	0.00
33	0.00	0.00	0.00
34	0.00	0.00	0.00
35	0.00	100.00	0.00
36	0.00	0.00	0.00
37	0.00	0.00	0.00
38	0.00	0.00	100.00

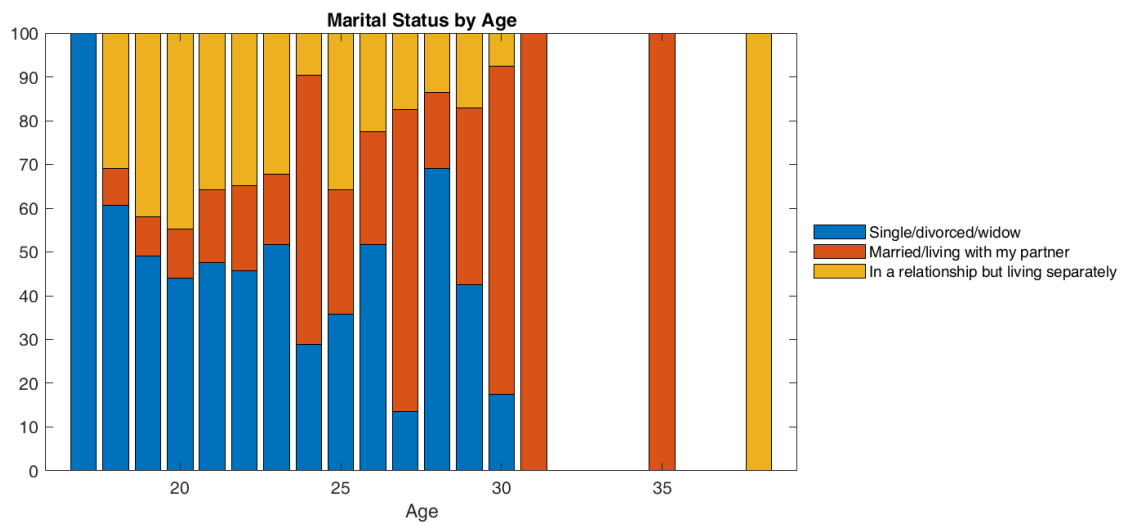Figure 6a. Marital Status by Country

Figure 6b. Marital Status by Age

2.2.6. Health/health status

Survey participants were also asked for their perception on their current health status. The results per country and per age are summarized in Table 7a and Table 7b and illustrated in Figure 7a and Figure 7b respectively. Half of the respondents perceive their current health status as fair and almost 35% considers that has a good health status. Less than 2% considers that has poor health status. Serbians perceive their health as good with 83.41% of the Serbian participants replying "Good" or "Very Good". The highest share of negative perception on heath is reported in Bulgaria (6.38%).

Table 7a. Health Status per Country

	Very Bad	Bad	Fair	Good	Very Good
Total	0.33	1.06	55.24	29.30	14.08
Greece	1.48	1.48	16.30	54.07	26.67
Bulgaria	1.06	5.32	21.28	36.17	36.17
Romania	0.00	0.50	97.32	2.01	0.17
Serbia	0.00	0.00	16.59	80.00	3.41
North Macedonia	0.52	1.57	9.42	39.27	49.21

Table 7b. Health Status by Age

Age	Very Bad	Bad	Fair	Good	Very Good
17	0.00	0.00	0.00	50.00	50.00
18	0.00	0.00	75.96	10.38	13.66
19	0.38	0.38	87.22	4.51	7.52
20	0.00	0.00	74.83	15.23	9.93
21	0.00	0.00	41.82	25.45	32.73
22	0.00	3.17	28.57	44.44	23.81
23	2.13	2.13	29.79	34.04	31.91
24	0.00	1.69	55.93	20.34	22.03
25	0.00	1.64	31.15	50.82	16.39
26	0.00	0.00	25.00	46.88	28.13
27	0.00	2.44	10.98	79.27	7.32
28	0.86	0.86	20.69	66.38	11.21
29	1.96	1.96	54.90	25.49	15.69
30	0.00	4.00	28.00	60.00	8.00
31	0.00	50.00	50.00	0.00	0.00
32	0.00	0.00	0.00	0.00	0.00
33	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	100.00	0.00
36	0.00	0.00	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00	0.00
38	0.00	0.00	0.00	100.00	0.00

Health Status

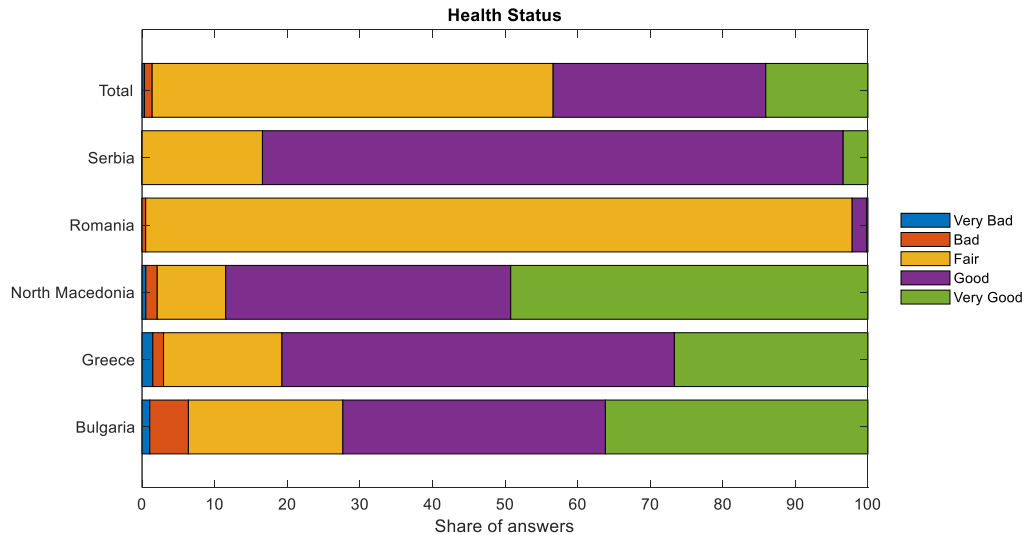Figure 1a. Health Status by Country
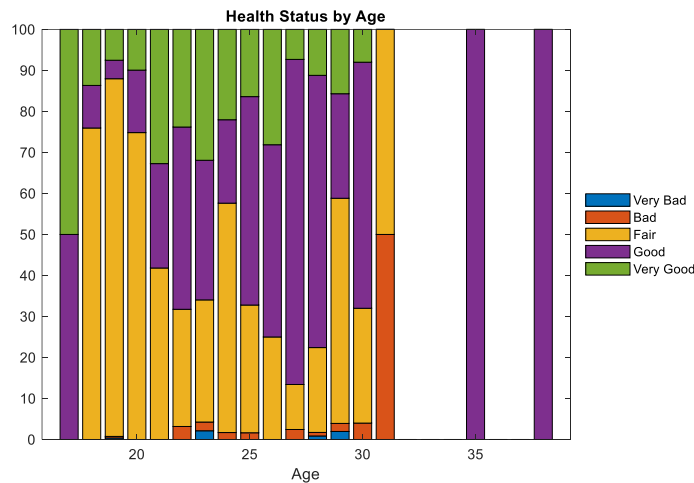
Figure 2b. Health Status by Age

2.2.7. Members of this household

Table 8 summarizes the descriptive statistics for the household size. The average household size is 2.4 with the smallest reported in Serbia and the largest in North Macedonia. North Macedonia has one of the youngest samples, so potentially the respondents still live with their families. In general, Greeks tend to live with their parents for longer and this can also be reflected in the results as a four member household has the same frequency with the single member household.

Table 8. Household Statistics

	Sample Size	Range	Max	Min	Average	St Error	St Deviation	Variation	Invalid
Total	1209	10	10	0	2.4	0.0	1.5	2.2	13
Greece	135	8	8	0	2.8	0.1	1.4	2.1	0
Bulgaria	94	6	6	0	2.3	0.1	1.4	2.0	0
Romania	597	6	7	1	2.2	0.1	1.2	1.6	0
Serbia	192	3	3	0	1.5	0.1	0.9	0.8	13
North Macedonia	191	10	10	0	3.7	0.1	1.7	2.8	0
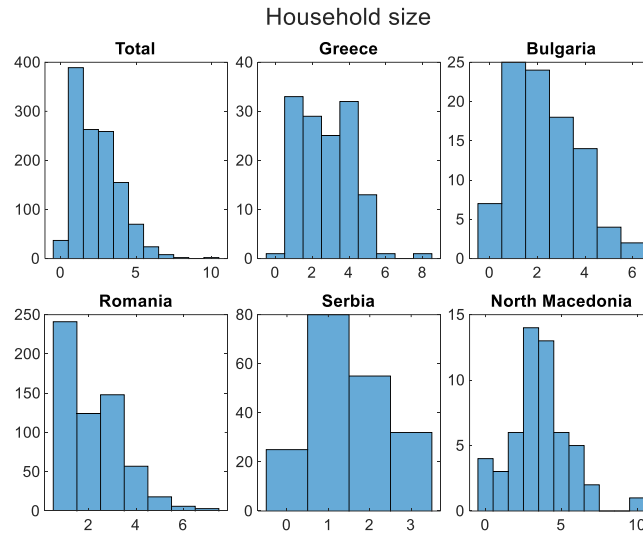
Figure 8. Household size histograms

2.2.8. Children in the family

Figure 9 and Table 10 depicts the histograms with the number of children of the respondents per country. As the majority of the respondents are young women in their early 20s and they probably study, they have no children. In sharp contrast with the other countries, most of the Serbian respondents have already two children. Serbia's sample has a high average age and a large share of the respondents is married, so most likely the respondents have completed their studies and they have created families.

Table 10. Number of Children Statistics

	Sample Size	Range	Max	Min	Average	St Error	St Deviation	Variation	Invalid
Total	1221	4	4	0	0.3	0.0	0.7	0.5	1
Greece	135	1	1	0	0.0	0.0	0.1	0.0	0
Bulgaria	94	2	2	0	0.1	0.0	0.3	0.1	0
Romania	597	3	3	0	0.1	0.0	0.5	0.2	0
Serbia	205	2	2	0	1.2	0.1	0.8	0.6	0
North Macedonia	190	4	4	0	0.3	0.0	0.7	0.5	1

Figure 9. Number of Children Histograms
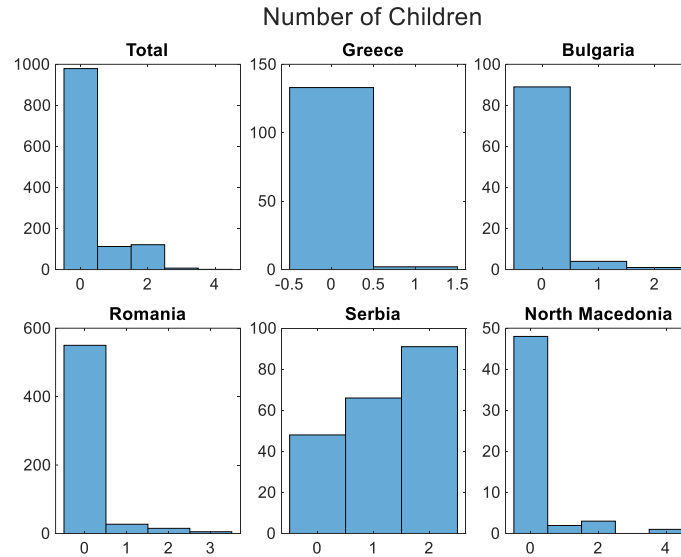
2.3. Socio – economic status

2.3.1. Transport modes

Table 11 and Figures 10, 11, 12 13, shows the share of respondents own one or more transport vehicles. It is observed that car ownership even from young ages is high with over 50% owning a car in all participating countries. One out of two participants own a bicycle and only a few own a scooter or a motorcycle. The lowest bicycle ownership is observed in Greece with 30.37% owning one. followed by Romania with 48,9%. It should be noted that Athens and Bucharest are the two largest participating cities with not sufficient cycling infrastructure. In the following figures, the ownership of the different modes per age is illustrated. For all modes, there is no clear pattern of preference for a specific vehicle in any of the countries.

Table 11. Share of Ownership

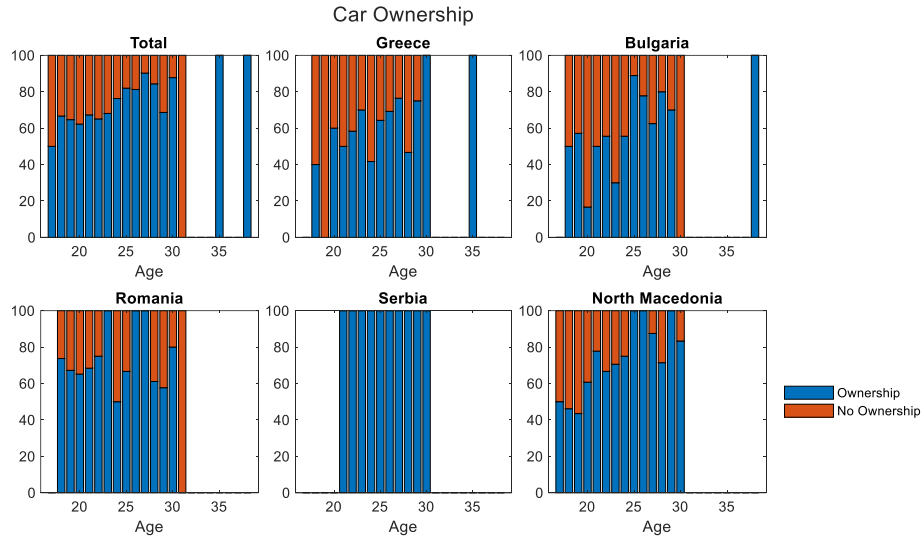|	Car	Bicycle	Scooter	Motorcycle
Total	71.39	50.34	1.77	3.35
Greece	60.74	30.37	0.00	0.74
Bulgaria	58.51	63.83	8.51	8.51
Romania	68.34	48.91	0.67	1.51
Serbia	100.00	100.00	NaN	NaN
North Macedonia	79.63	55.56	1.85	5.56

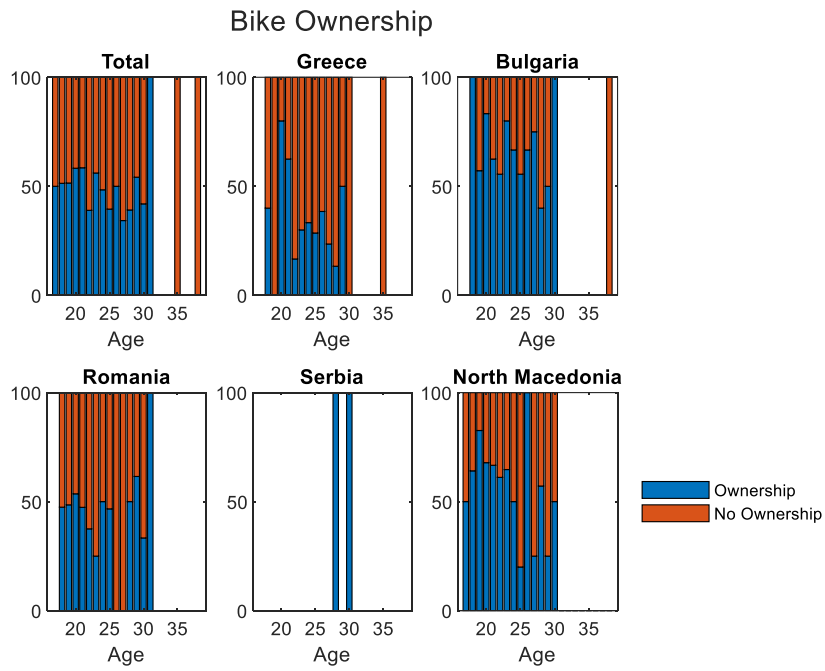Figure 10. Car Ownership per Age

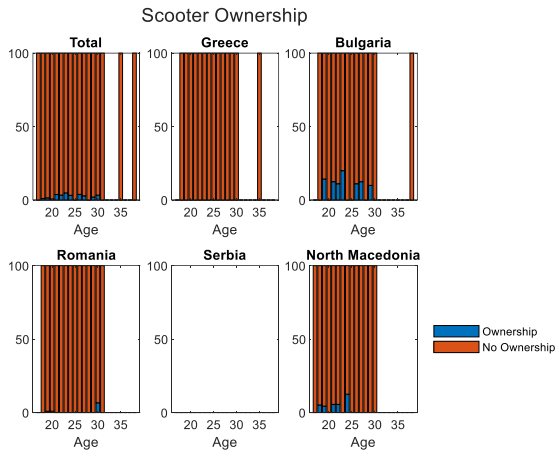
Figure 11. Bicycle Ownership per Age

Figure 12. Scooter Ownership per Age
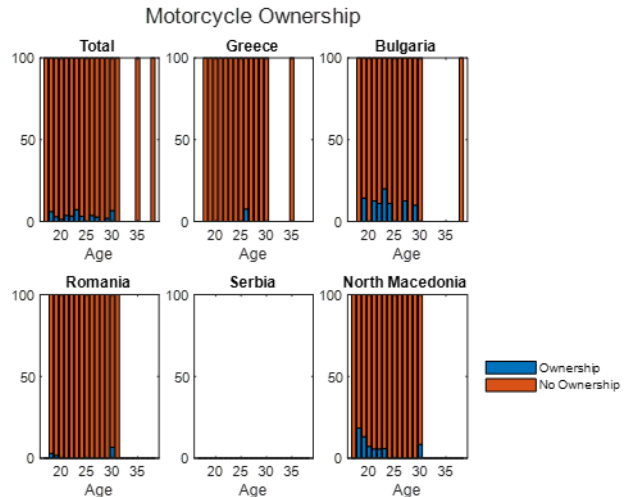
Figure 13. Motorcycle Ownership per Age

2.3.2. Access to different transport modes

Apart from ownership, the participants were asked about the access they have to car, bicycle, scooter and motorcycle. Table 12 shows the shares of respondents (total and per country) that have access to the different modes. Access to car is extremely high in all countries and as can be seen in Figure 14, accessibility increases with age. Respondents have also access to bicycle with the highest access to be reported in Bulgaria (61.7%) and the lowest in Greece (31.11%). Bicycle access is equally distributed among all ages as depicted in Figure 15. Accessibility to scooter and motorcycle is roughly similar with Bulgaria having the higher accessibility to scooters (12.77%) and North Macedonia having the highest accessibility to motorcycles. The accessibility to scooter and motorcycle per age are depicted in Figure 16 and Figure 17 respectively.

Table 1. Share of Access

	Car	Bicycle	Scooter	Motorcycle
Total	80.93	49.95	6.69	4.72
Greece	82.22	31.11	2.96	5.93
Bulgaria	77.66	61.70	12.77	5.32
Romania	79.40	48.41	7.20	3.02
Serbia	100.00	NaN	NaN	NaN
North Macedonia	79.63	55.56	3.70	12.96
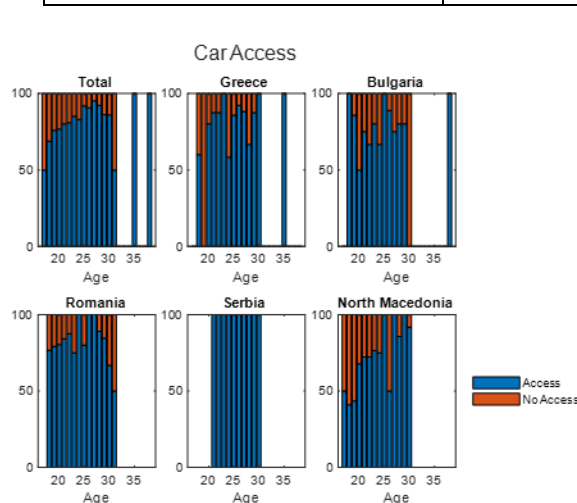
Figure 14. Car Access per Age
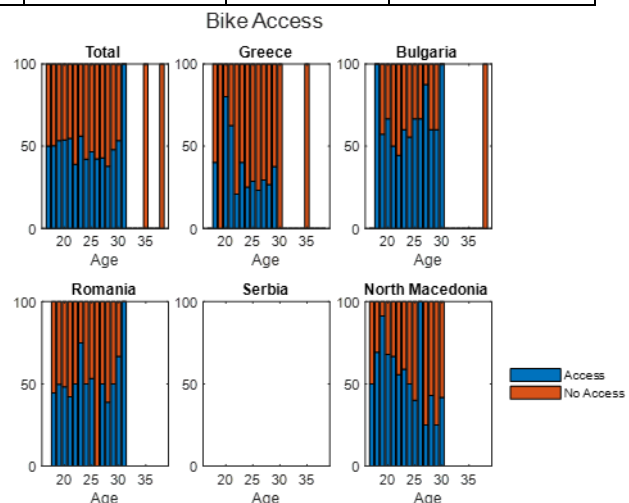
Figure 15. Bike Access per Age
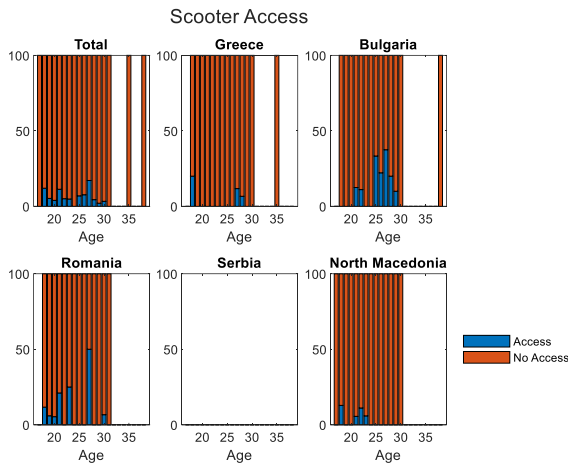
Figure 16. Scooter Access per Age
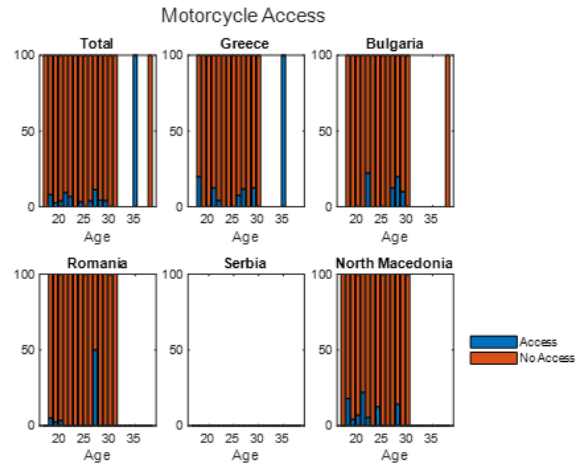
Figure 17. Motorcycle Access per Age

2.3.3. Household monthly income

Figure 18 depicts the gross household monthly income in Euros in the participating countries apart from Serbia for which no replies were available for this question. It can be observed that that overall, all income group are almost equally represented. Interestingly, 65% of North Macedonian respondents replied that they have no income. This can be explained by the work status of North Macedonian respondents, the majority of which are young and students and it is the country with the highest share of unemployed survey participants.

Table 13. Income per Country

	No Income	0-499€	500-999€	1000-1499€	1500-1999€	2000-2499€	2500-2999€	3000-3499€	3500€ or more
Total	13.33	12.83	16.98	16.29	11.55	10.86	5.53	3.95	8.69
Greece	3.79	6.82	14.39	21.21	15.15	12.12	15.15	9.85	1.52
Bulgaria	1.08	10.75	29.03	23.66	16.13	13.98	4.30	1.08	0.00
Romania	7.54	9.88	15.24	18.43	13.40	13.23	5.19	4.02	13.07
Serbia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Macedonia	43.98	27.23	18.32	2.62	1.05	1.05	0.52	1.05	4.19
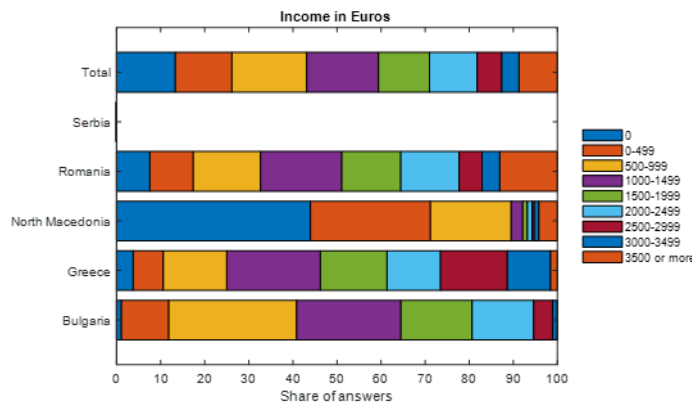
Figure 18. Income in Euros

2.3.4. How would you describe your financial status?

The respondents were asked how they perceive their financial status. Figure 19 illustrates the results received. The majority of the respondents categorized themselves in the mid-income group with the remaining to be roughly equally distributed between the low and high income. The highest share of respondents that perceive themselves as well paid were reported in Romania, while there is a significant share of Greek and North Macedonians that place themselves in the low-income group. There were no data available from Serbia for this question.

Table 14. Income perception per country

	Low	Low-Mid	Mid	Mid-High	High
Total	6.59	11.80	58.90	19.27	3.44
Greece	14.81	17.78	51.85	15.56	0.00
Bulgaria	3.19	28.72	55.32	12.77	0.00
Romania	2.85	6.37	62.48	23.28	5.03
Serbia	0.00	0.00	0.00	0.00	0.00
North Macedonia	14.14	16.23	54.45	12.57	2.62
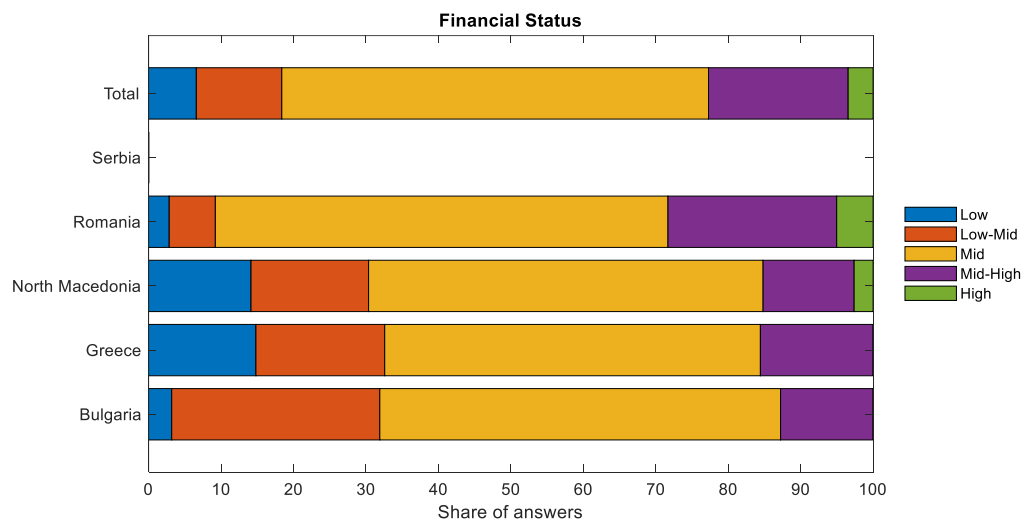
Figure 19. Income perception per country

2.3. Data analyses

Obtained data from all countries were analyzed using basic descriptive statistic parameters. Mean, SD, mod, mediana were calculated. For better overview of the results, they are presented using frequencies (f) and percents (%). All results are presented in Tables or with Figiures.

3.0 PARTICIPATING CITY

3.1. Athens

Athens is the capital and the largest city of Greece. It is a coastal city, located southeast in mainland Greece. As from 2021, Athens has urban population of 3059764 and a metropolitan population of 3638281 inhabitants, making it the biggest city of the country, while constitutes the 8th largest metropolitan area in Europe. Athens is the administrative and the economic hub of the country with the majority of the activities in both sectors are concentrated there. Athens has 10 high education institutions and many cultural sites and museums.

Athens has Mediterranean climate with mild wet winter and hot dry summer season. Due to the extensive urbanization and the urban heat island phenomenon, in the city higher temperatures are observed. Athens enjoys on average more than 300 days of sunshine, with a few rains while icy and snowy days are rare and mostly are on the surrounding mountains. Temperatures range 7° C to 15° C during autumn and winter and above 22° Celsius from April until October.

According to the latest Greek census in 2021, 51.8% of the Athenean population is women and 48.2% is men. Figure 20 depicts the age pyramid of the country. It can be observed that the age groups between 20 and 30 years constitute the 5% of the population and 5.4% of the total women and men.

Figure 20. Population of Athens

Athens is a major transportation hub by having the biggest airport of Greece and the biggest port (the port of Piraeus) in its proximity and an extended network of intercity buses with all major cities in Greece and major cities in the neighboring countries. Athens has an extended public transport network

that serves the city and its metropolitan area. Transport for Athens, the corresponding organization, operates a large fleet of buses and trolley buses. In terms of ur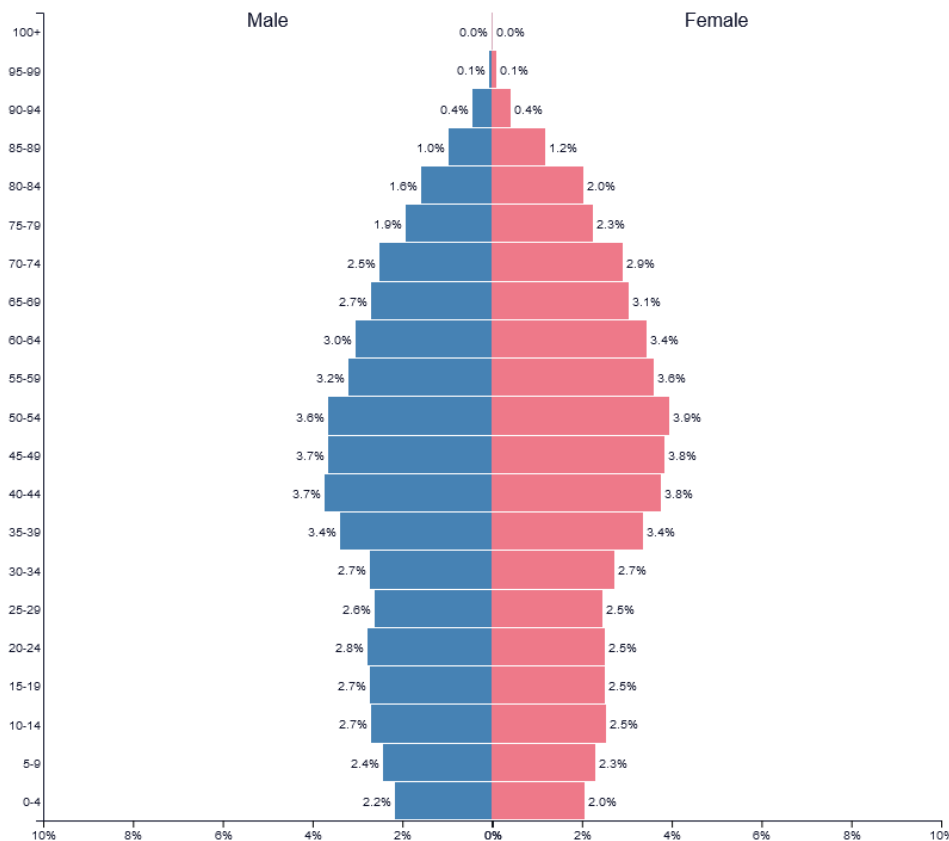ban rail, Athens has a metro system with three lines with 66 stations, a tram network with 6 lines and suburban (commuter) railway system.

Although there is a plan for an extensive network of cycling infrastructure, it has been partially implemented in some municipalities and overall the cycling network is fragmented. Moreover, in the historical center of Athens and in local district centers there are pedestrian areas, usually around areas of commercial activity.

3.2. Bucharest

Bucharest, capital city of Romani, is situated in the center of the Romanian Plain, in an area once covered by the Vlăsiei Forest, which after it was cleared, gave way for a fertile flatland. As with many cities, Bucharest is traditionally considered to be built upon seven hills, similar to the seven hills of Rome. Bucharest's seven hills are: Mihai Vodă, Dealul Mitropoliei, Radu Vodă, Cotroceni, Dealul Spirii, Văcărești, and Sfântu Gheorghe Nou.

The city has an area of 226 km2 (87 sq mi). The altitude varies from 55.8 m (183.1 ft) at the Dâmbovița bridge in Cățelu, southeastern Bucharest and 91.5 m (300.2 ft) at the Militari church. The city has a roughly round shape, with the centre situated in the cross-way of the main north–south/east-west axes at University Square. The milestone for Romania's Kilometre Zero is placed just south of University Square in front of the New St. George Church (Sfântul Gheorghe Nou) at St. George Square (Piața Sfântul Gheorghe). Bucharest's radius, from University Square to the city limits in all directions, varies from 10 to 12 km (6 to 7 mi).

The city is situated on the banks of the Dâmbovița River, which flows into the Argeș River, a tributary of the Danube. Several lakes – the most important of which are Lake Herăstrău, Lake Floreasca, Lake Tei, and Lake Colentina – stretch across the northern parts of the city, along the Colentina River, a tributary of the Dâmbovița. In addition, in the centre of the capital is a small artificial lake – Lake Cișmigiu – surrounded by the Cișmigiu Gardens. These gardens have a rich history, having been frequented by poets and writers. Opened in 1847 and based on the plans of German architect Carl F.W. Meyer, the gardens are the main recreational facility in the city centre.

Bucharest has a humid continental climate (Dfa by the 0 °C isotherm), or a humid subtropical climate (Köppen: Cfa by the -3 °C isotherm), with hot, humid summers and cold, snowy winters. Owing to its position on the Romanian Plain, the city's winters can get windy, though some of the winds are mitigated due to urbanisation. Winter temperatures often dip below 0 °C (32 °F), sometimes even to −10 °C (14 °F). In summer, the average high temperature is 29.8 °C (85.6 °F) (the average for July and August). Temperatures frequently reach 35 to 40 °C (95 to 104 °F) in midsummer in the city centre. Although average precipitation in summer is moderate, occasional heavy storms occur. During spring and autumn, daytime temperatures vary between 17 and 22 °C (63 and 72 °F), and precipitation during spring tends to be higher than in summer, with more frequent yet milder periods of rain

As per the 2021 census, 1,716,961 inhabitants lived within the city limits, a decrease from the figure recorded at the 2011 census. This decrease is due to low natural increase, but also to a shift in population from the city itself to its smaller satellite towns such as Voluntari, Buftea, and Otopeni. In a study published by the United Nations, Bucharest placed 19th among 28 cities that recorded sharp declines in population from 1990 to the mid-2010s. In particular, the population fell by 3.77%.

The city's population, according to the 2002 census, was 1,926,334 inhabitants, or 8.9% of the total population of Romania. A significant number of people commute to the city every day, mostly from the surrounding Ilfov County, but official statistics regarding their numbers do not exist.

Bucharest's public transport system is the largest in Romania and one of the largest in Europe. It is made up of the Bucharest Metro, run by Metrorex, as well as a surface transport system run by STB (Societatea de Transport București, previously known as the RATB), which consists of buses, trams, trolleybuses, and light rail. In addition, a private minibus system operates there. As of 2007, a limit of 10,000 taxicab licences was imposed

Bucharest is a major intersection of Romania's national road network. A few of the busiest national roads and motorways link the city to all of Romania's major cities, as well as to neighbouring countries such as Hungary, Bulgaria and Ukraine. The A1 to Pitești, and from Sibiu to the Hungarian border, the A2 Sun Motorway to the Dobrogea region and Constanța, and the A3 to Ploiești all start from Bucharest.

A series of high-capacity boulevards, which generally radiate out from the city centre to the outskirts, provides a framework for the municipal road system. The main axes, which run north–south, east–west and northwest–southeast, as well as one internal and one external ring road, support the bulk of the traffic.

The city's roads are usually very crowded during rush hours, due to an increase in car ownership in recent years. In 2013, the number of cars registered in Bucharest amounted to 1,125,591.[99] This results in wear and potholes appearing on busy roads, particularly secondary roads, this being identified as one of Bucharest's main infrastructural problems. A comprehensive effort on behalf of the City Hall to boost road infrastructure was made, and according to the general development plan, 2,000 roads have been repaired by 2008.[100] The huge number of cars registered in the city forced the Romanian Auto Registry to switch to 3-digit numbers on registration plates in 2010.

On 17 June 2011, the Basarab Overpass was inaugurated and opened to traffic, thus completing the inner city traffic ring. The overpass took five years to build and is the longest cable-stayed bridge in Romania and the widest such bridge in Europe;[101] upon completion, traffic on the Grant Bridge and in the Gara de Nord area became noticeably more fluid

3.3. SHTIP

Shtip is a city in the eastern part of the Republic of North Macedonia, spread along the valley of the river Bregalnica. The city is the largest city in Eastern Macedonia and the 7th largest city in Macedonia. Stip is the seat of the same-named municipality and centre of the East Planning Region. Stip is one of the oldest cities ign Macedonia.

Štip is the largest urban agglomeration in the eastern part of North Macedonia, serving as the economic, industrial, entertainment and educational focal point for the surrounding municipalities.

Štip is the largest textile production center in the country. It is the center of the fashion industry in North Macedonia, as well as the site of the sole public university in eastern North Macedonia, Goce Delčev University of Štip.

Climate

The area surrounding the city is suffering from deforestation which is contributing to the temperature extremes, summers being hot and dry with mean temperatures around 32 °C (90 °F) and days above 40 °C (104 °F) being common. Winters are short (less than 2 months usually) and mild (though considered cold for the area) with normals around −2 °C (28 °F), but with occasional drops down to −10 °C (14 °F). Spring usually comes in February, when most of the foliage is regenerating, although freak snow storms could appear as late as May.

Stip is located on the banks of the rivers Bregalnica and Otinja, on the hilly terrain on the slope between Ovche Pole, Kocani Lakavica Valley. The geographical position allows it to have a significant traffic function and beneficial communication with the surrounding neighborhoods.

Transportation:

The public transport is organized in suburban services and inter-city.

The suburbs of

- Babi,
- Senjak,
- Prebeg,
- Makedonka,
- Novo Selo and Kezhovica, etc.

are served by a fleet of municipal buses running 7 days a week and connecting several locations in the city center with the suburbs: https://jps.mk/ There is a large fleet of private taxi vehicles in the city, with very competitive prices. There is also a walking and cycling area of around 7km, located in the center of the city for recreational purposes.

Isar fortress above Stip

The fortress Isar or the famous Stip Kale is the main feature of this city and delights with the wonderful panorama of Stip. It is located on the elevation holding the same name, which rises 120 meters above the mouth of Otinja in Bregalnica, on the western periphery of the city.

Population:

Štip Municipality covers an area of 583.24 km² and it's altitude is 319.79 m. As of the 2021 census, the city of Štip had a population of about 44,866. The structure of population in Shtip is presented at Figure 21.
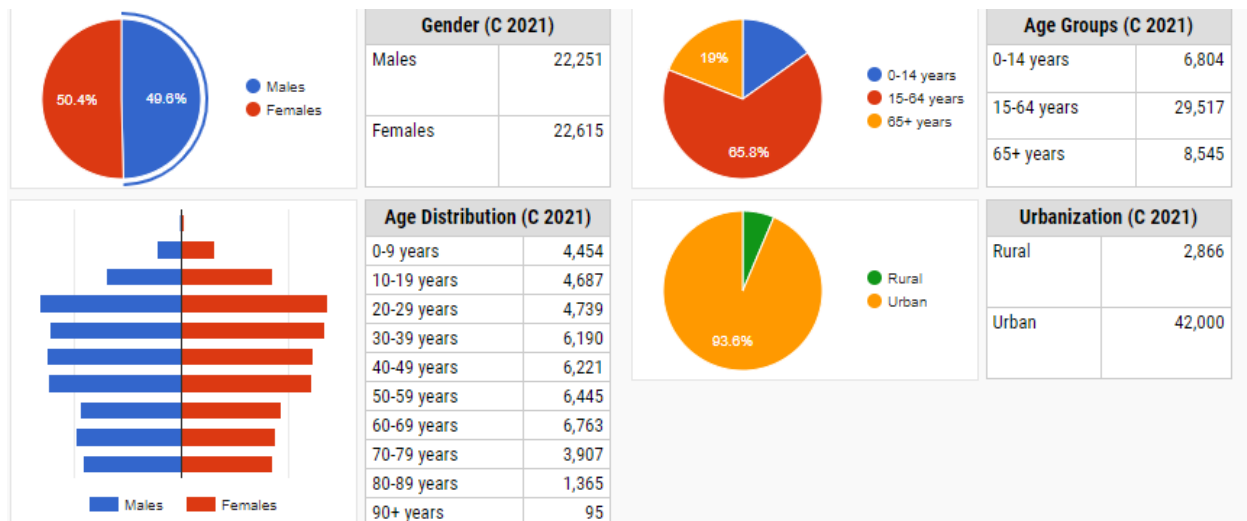
Figure 21. Population of Stip

4.0. RESULTS AND DISCUSSION

4.1. NEIGHBORHOOD AND MOBILITY ATTRIBUTES

4.1.1 Walking and cycling network

The first question related to neighbourhood and mobility focuses on the status of the walking and cycling network and the land use. The question comprises of nine sub questions, for which the respondents had to state to which extent they agree or disagree with each statement. The first sub question is about the available shortcuts for walking. Figure 22 depicts the overall results and per participating country. In the majority of the countries, the respondents agree on the existence of shortcuts for walking with the highest number of positive answers to be reported in Bulgaria with a share of 81.05% agreeing with the statement. In contrast, 60% of Serbians believe that there is no enough shortcuts for walking. The results are also summarized in Table 15.

Table 15. Shares of answers for Question related to neighbourhood and mobility

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	13.26	22.50	35.27	28.97
Greece	3.70	24.44	45.93	25.93
Bulgaria	7.45	8.51	29.79	54.26
Romania	8.88	24.46	33.33	33.33
Serbia	35.12	27.32	30.24	7.32
North Macedonia	13.09	16.75	41.88	28.27
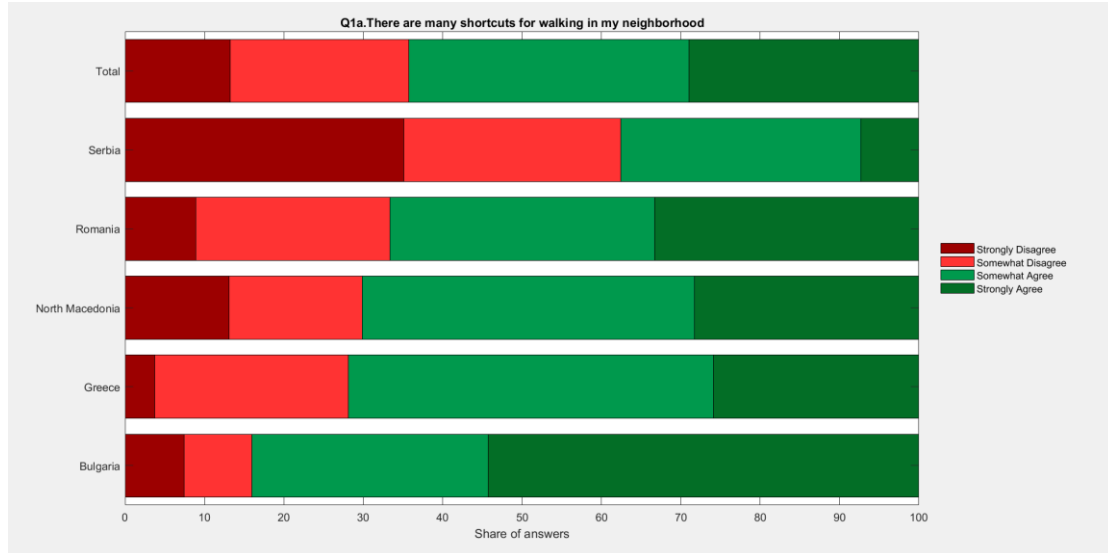
Figure 22. Shortcuts for walking

The second sub-question puts in comparison cycling and driving. Figure 23 depicts the overall results and the results per country for this sub question. The overall results are mixed with the positive answers to be slightly more than the negative. This can be explained by the mixed results reported in the participating countries with Serbian and Greek respondents mostly disagreeing with the statement, while the remaining countries agreeing. Table 16 summarizes the shares of answers per country.

Table 16. Comparation of cycling and driving

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	17.10	27.58	30.03	25.29
Greece	28.15	39.26	23.70	8.89
Bulgaria	10.64	13.83	36.17	39.36
Romania	9.21	20.77	35.01	35.01
Serbia	27.80	48.78	12.68	10.73
North Macedonia	25.65	24.61	34.55	15.18
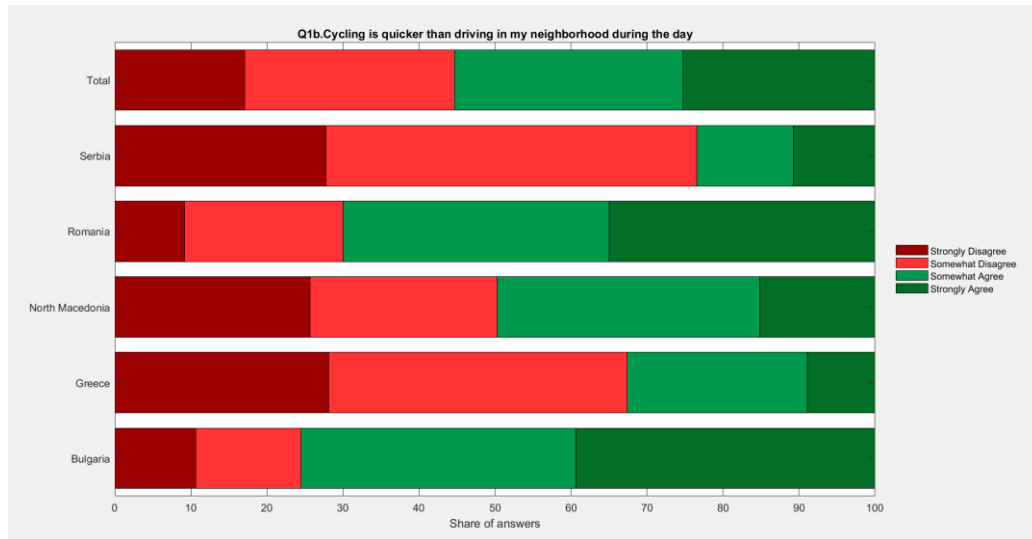
Figure 23. Comparation between cycling and driving

Sub question focuses on the road junction density. The majority of respondents agrees that there are many road junctions in their neighborhood. The highest share is reported in Greece, followed by Romania and North Macedonia. On the other hand, Serbian respondents seem to disagree with the statement with the share of replies expressing disagreement being approximately 71%.

Table 17. Road density

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	11.71	24.49	33.50	30.30
Greece	3.73	16.42	38.06	41.79
Bulgaria	13.83	17.02	37.23	31.91
Romania	4.19	22.78	35.85	37.19
Serbia	30.73	40.49	17.56	11.22
North Macedonia	19.37	21.99	38.22	20.42
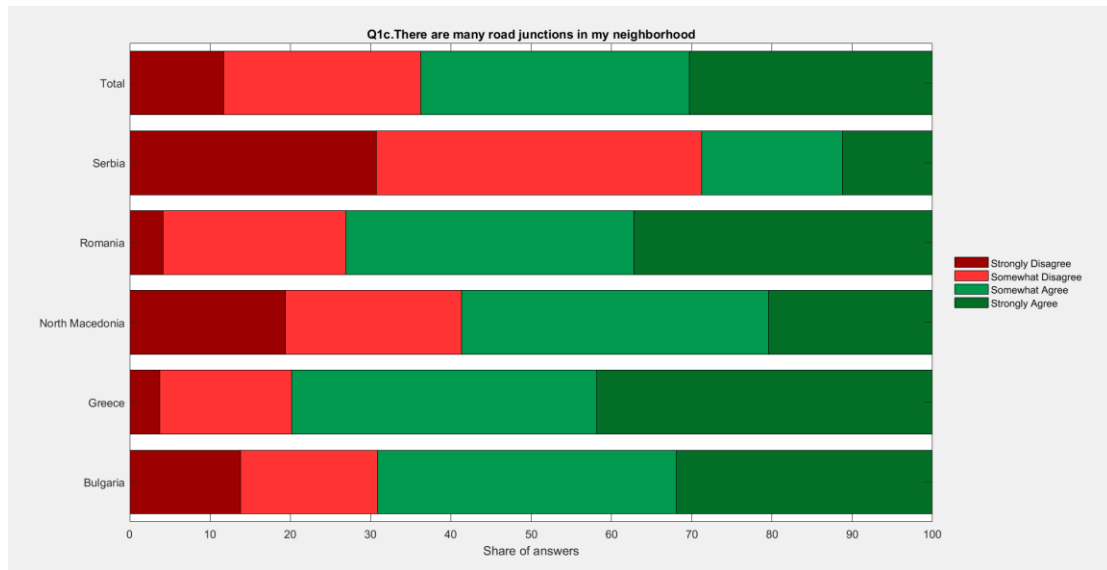
Figure 24. Available roads in neighbourhood

Next subquestion explores the existence of alternative walking paths in each participating city. Again, as depicted in Figure 24, the overall results are mixed with the shares of agreement and disagreement to be roughly equal. Serbian respondents believe that they have a limited number of alternative paths, while the majority of North Macedonian respondents believes that they have a sufficient number of alternative paths.

Table 18. The existence of alternative walking paths in each participating city

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	18.33	30.11	29.21	22.34
Greece	5.19	28.15	42.22	24.44
Bulgaria	5.32	21.28	24.47	48.94
Romania	17.92	34.17	30.65	17.25
Serbia	38.05	34.15	13.17	14.63
North Macedonia	14.14	18.85	35.08	31.94
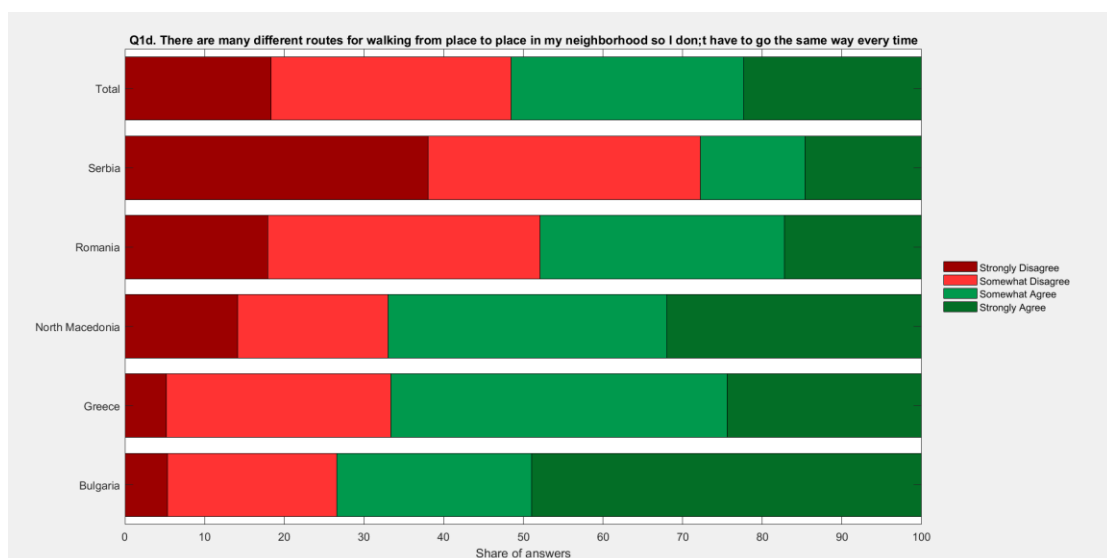
Figure 25

While for walking the results are mixed, the Balkans cities, there is an agreement on the absence of alternative paths for cycling in all countries. Overall, 70% of the respondents believe that there are not many different cycling alternatives in their neighborhood. Almost 82% of the respondents from Serbia disagree mostly with the statement and 53% of the respondents from Bulgaria believe that they can find alternative paths for cycling in their neighborhood. The results are depicted in Figure 26 and summarized in the next Table 19.

Table 19. Cycling alternatives in their neighbourhood

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	34.45	37.07	16.61	11.87
Greece	38.52	37.04	20.00	4.44
Bulgaria	12.77	34.04	31.91	21.28
Romania	39.36	37.52	17.09	6.03
Serbia	30.24	51.71	0.00	18.05
North Macedonia	31.41	21.47	23.04	24.08
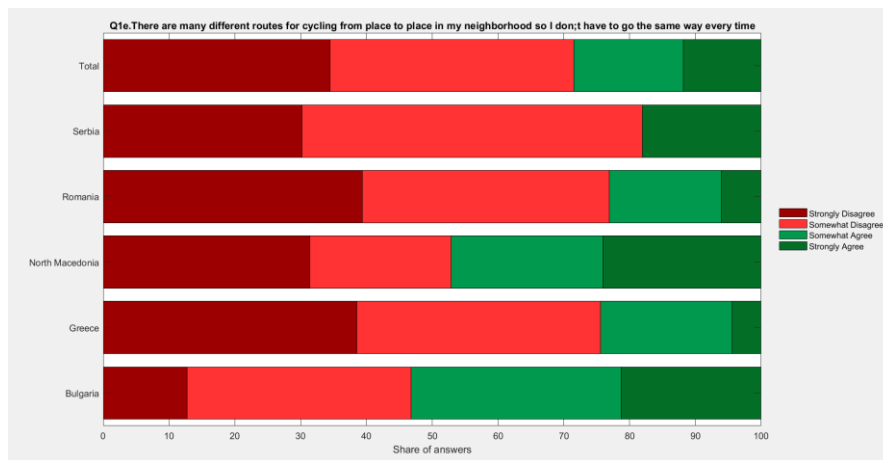
Figure 26. Cycling alternatives in their neighbourhood

The respondents tend to agree that there is a sufficient number of shops to cover their everyday needs with 25% to somewhat agree and 54% strongly agree. Although the majority agrees on the statement of sub question 1f, it is observed that in Serbia and Greece there is a significant share of answers that is not satisfied with the existing shops in their area. Specifically. 44% of the Serbian respondents and 36% of the Greek respondents disagree with the statement. On the other hand, Bulgarians and North Macedonians mostly agree with the statement with 91% and 82% respectively. The results are depicted in Figure 27 and summarized in Table 20.

Table 20. Number of shops for everyday need

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	4.91	15.71	25.04	54.34
Greece	13.33	23.70	31.11	31.85
Bulgaria	4.26	4.26	13.83	77.66
Romania	2.85	9.05	22.95	65.16
Serbia	4.39	40.00	36.59	19.02
North Macedonia	6.28	10.47	20.42	62.83
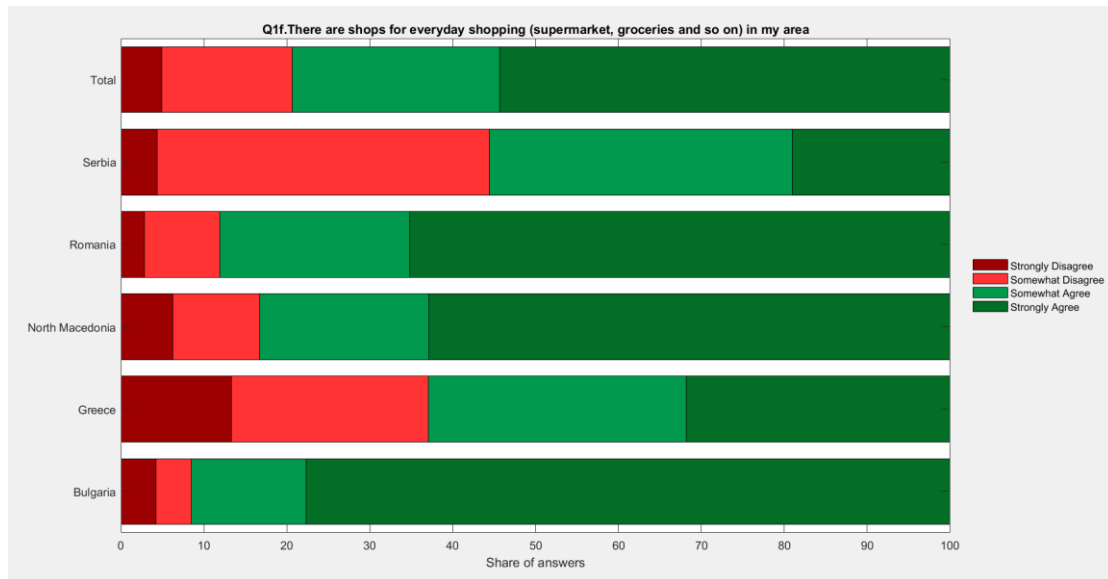
Figure 27. Number of shops for everyday need

Following the question on everyday shopping, the next statement focused on the entertainment in the study areas. Compared to everyday needs, the replies on the statement on entertainment are mixed with 55% agreeing and 45% disagreeing. It can be observed that only in Plovdiv, Bulgaria there are sufficient opportunities for entertainment, where 78% agreed with the statement, followed by Bucharest, Romania with 60%. The positive replies among the remaining countries ranged between 40% and 50%. The results are shown in Table 21 and Figure 28.

Table 21. Entertainment areas in the neighbourhood

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	13.26	31.67	28.23	26.84
Greece	18.52	36.30	33.33	11.85
Bulgaria	6.38	14.89	25.53	53.19
Romania	10.89	28.98	29.82	30.32
Serbia	17.07	42.44	24.88	15.61
North Macedonia	16.23	33.51	24.61	25.65
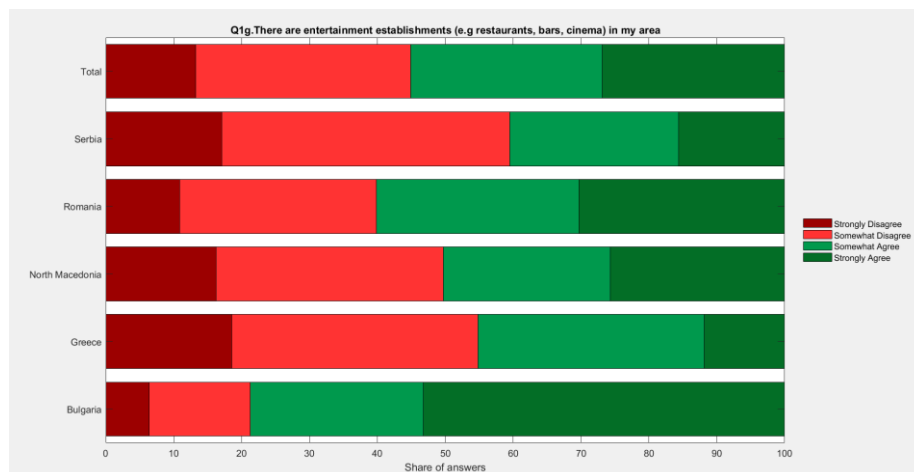
Figure 28. Entertainment areas in the neighbourhood

The last statement on land use focuses on the retail stores available in the neighborhood. The respondents relatively agree with the statement, with 32.65% replying "Somewhat agree" and 25.61% "Strongly agree". The Serbian respondents mostly agreed with the statement with 72.68%, followed by Bulgaria with 67%. Romania and Greece shown similar shares of positive answers (54%) and the lowest share (but still over half of the respondents) were reported in Bulgaria (52%). The results are illustrated in Figure 29 and summarized in Table 22.

Table 22. Retail stores available in the neighborhood

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	17.68	24.06	32.65	25.61
Greece	16.30	29.63	35.56	18.52
Bulgaria	13.83	19.15	19.15	47.87
Romania	14.41	30.82	23.62	31.16
Serbia	19.02	8.29	68.29	4.39
North Macedonia	29.32	18.32	27.23	25.13
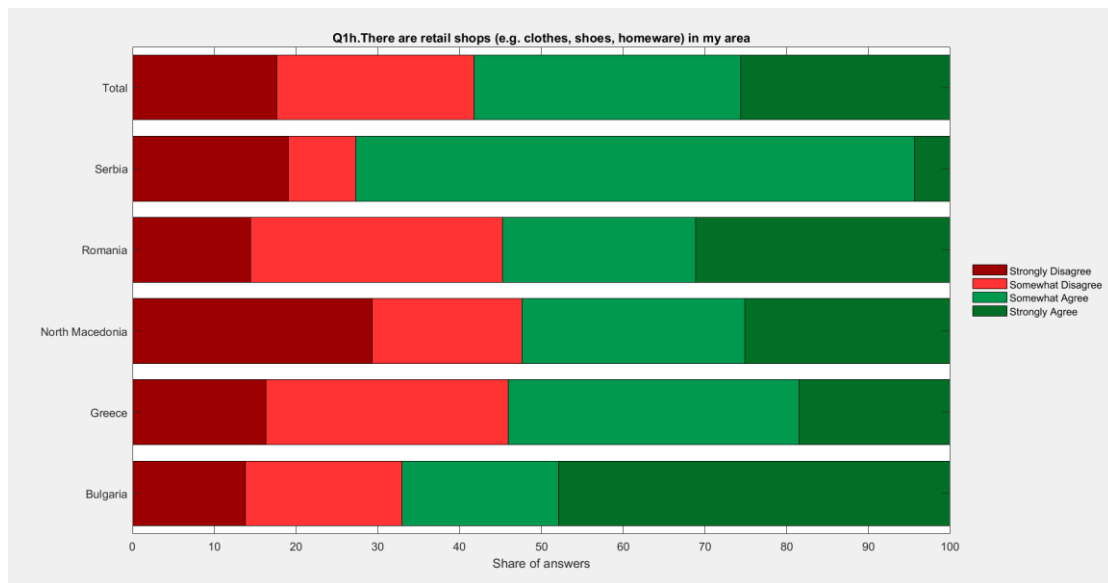
Figure 29. retail stores available in the neighborhood

With the last sub question for this part, the respondents were asked to comment on the diversity of land use in their area. In general, 59% of the participants characterize their areas as diverse, with different land uses. In Romania, this can be explained by the fact that the participating city is Bucharest, which is the capital of the country, and many different activities take place. Interestingly, the respondents from Athens, which is also a capital city and major economic and cultural hub, find that their area is not diverse enough. The different districts of Athens are quite diverse, with different land uses to be concentrated in specific areas. Serbians also find Nis less diverse than the other participating cities. The results are illustrated in Figure 30 and shown in Table 23.

Table 23. Diversity of land use in their area

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	15.88	24.96	33.63	25.53
Greece	22.22	40.00	25.19	12.59
Bulgaria	13.83	20.21	37.23	28.72
Romania	6.37	22.95	34.34	36.35
Serbia	39.51	25.37	35.12	0.00
North Macedonia	16.75	22.51	34.03	26.70
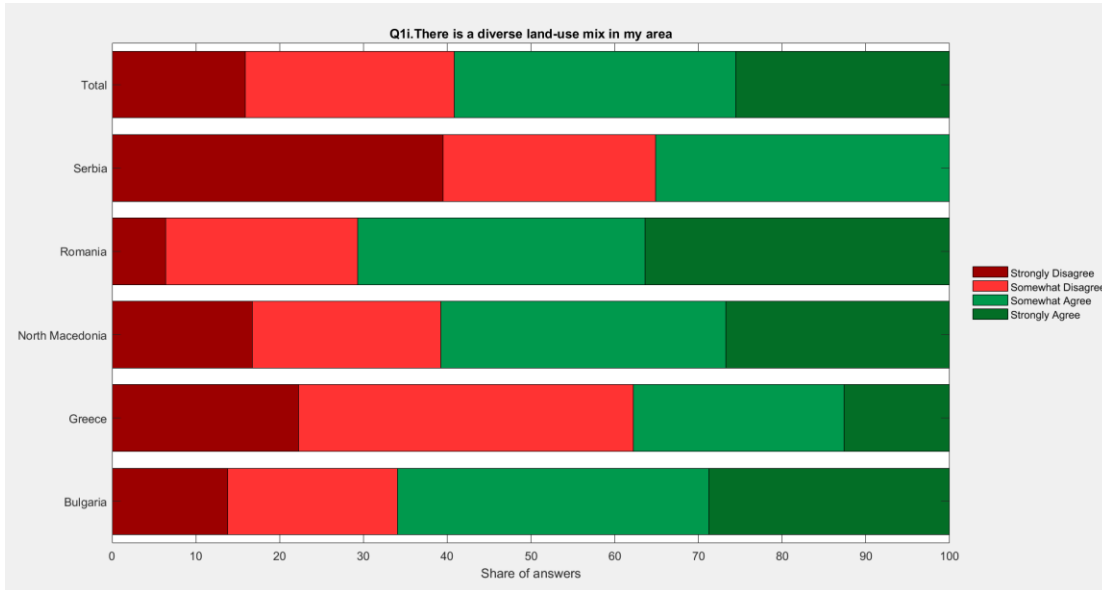
Figure 30. Diversity of land use in their area

4.1.2. Pleasure in neighborhood for walking or cycling

The next set of questions, explore how pleasant the neighborhood of the respondents for active mobility is. The first sub question is about walking. Overall, 71% of the respondents from all participating countries find their neighborhoods pleasant for walking. Bulgarians followed by Serbians find agree the most with the statement by 80.85% and 75.12% respectively. Although Greek participants also agree with the statement, they report the lowest agreement percentage at 65% which reflects the status of walking infrastructure in different neighborhoods of Athens. The results are summarized in Table 24 and shown in Figure 31.

Table 24. Facilities of the neighbourhood for active transport

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	8.43	20.05	31.91	39.61
Greece	7.41	27.41	30.37	34.81
Bulgaria	8.51	10.64	30.85	50.00
Romania	6.03	23.95	34.00	36.01
Serbia	15.61	9.27	24.88	50.24
North Macedonia	8.90	18.85	34.55	37.70
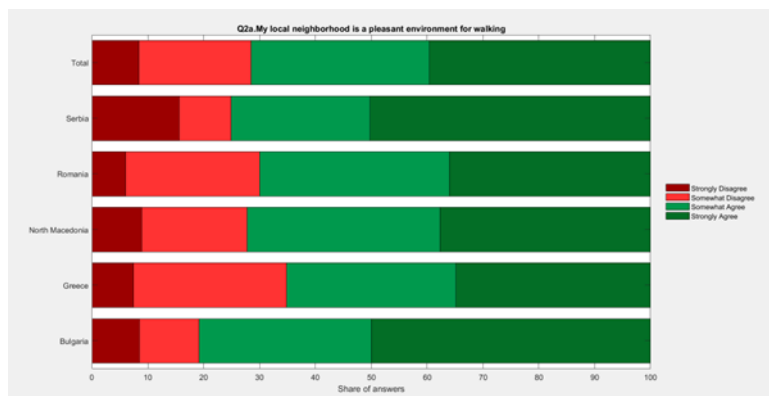
Figure 31. Facilities of the neighbourhood for active transport

The second statement in question 2 is "my local neighborhood is pleasant for cycling". Compared to walking, it can be observed that the replies received are mixed with 53.19% agreeing with the statement. The highest share of positive answers is observed in Bulgaria and the lowest in Greece. The replies to this statement reflect to a certain extend the current condition of cycling infrastructure, if any. For instance, Athens has fragmented network of cycling lanes, which is also very limited, and this affects people's willingness to cycle. The results are summarized in the next Table and shown in the next Figure.

Table 2

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	20.79	26.02	27.99	25.20
Greece	29.63	36.30	20.74	13.33
Bulgaria	14.89	20.21	30.85	34.04
Romania	14.07	31.83	31.66	22.45
Serbia	37.56	5.85	21.95	34.63
North Macedonia	20.42	25.13	26.70	27.75
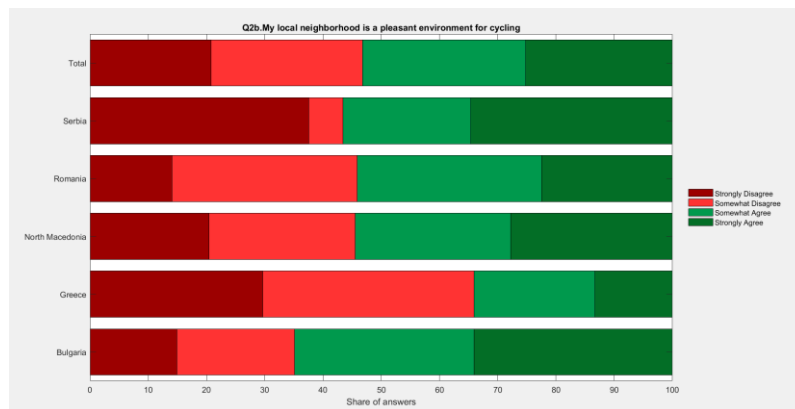
Figure 32. Neighbourhood as a plasent area for cycling

The next set of statements in the question focus on the aesthetic of the urban environment. The third statement is about the existence of litter on the streets. Serbians find their neighborhoods dirty, as almost 90% of them replied that there is some or plenty litter on the streets. Next is North Macedonia with six out of ten believing that their neighborhood streets are dirty. On the other hand, the majority of Romanian and Greek respondents find their neighborhoods relatively clean. The results for this sub question are shown in Table 26 and Figure 33.

Table 26. Aesthetic of the urban environment

	None	A few	Some	Plenty
Total	18.74	33.63	34.21	13.42
Greece	14.07	48.15	27.41	10.37
Bulgaria	20.21	35.11	35.11	9.57
Romania	29.82	37.69	19.10	13.40
Serbia	0.00	10.24	76.10	13.66
North Macedonia	6.81	35.08	40.84	17.28
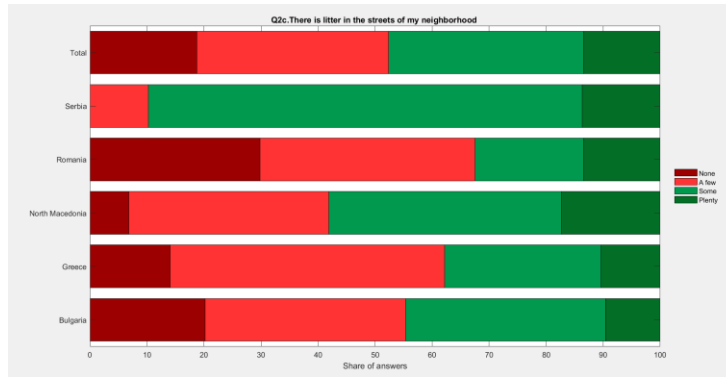
Figure 33. Aesthetic of the urban environment

The following statement is about urban greenery. On average, the respondents believe that there are green areas and decorative trees along the roads of the neighborhood. The highest share of positive answers can be found in Bulgaria and the lowest in Greece. This can be explained by the limited number of green areas in Athens, which are also not easily accessible by every neighborhood of Athens. In the other countries, the share of positive answers ranges between 75% and 80%. The shares of answers on urban green and roadside vegetation are shown in Table 27 and Figure 34.

Table 27. Urban greenery

	None	A few	Some	Plenty
Total	5.32	18.25	34.53	41.90
Greece	4.44	26.67	40.74	28.15
Bulgaria	3.19	5.32	37.23	54.26
Romania	6.70	18.59	31.32	43.38
Serbia	0.98	18.05	25.85	55.12
North Macedonia	7.33	17.80	48.17	26.70
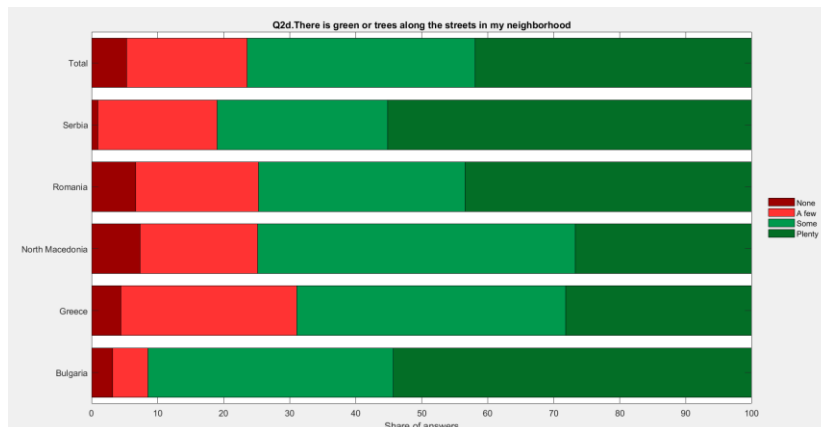
Figure 34. Urban greenery

The last statement on this question is on badly maintained, unoccupied or ugly building in the neighborhood. On average, only one out of three believe that there are buildings in such conditions in their neighborhood. 47% of the respondents in Bulgaria believe that their neighborhoods have some to plenty such building, while only 27.3% believe that there are many buildings in bad conditions. The results are summarized in Table 28 and shown in Figure 35.

Table 28. Bad looking objects in the neighboorhood.

	None	A few	Some	Plenty
Total	33.55	32.90	25.04	8.51
Greece	17.78	45.93	23.70	12.59
Bulgaria	21.28	30.85	32.98	14.89
Romania	36.85	35.85	18.59	8.71
Serbia	40.00	22.93	36.10	0.98
North Macedonia	33.51	26.18	30.37	9.95
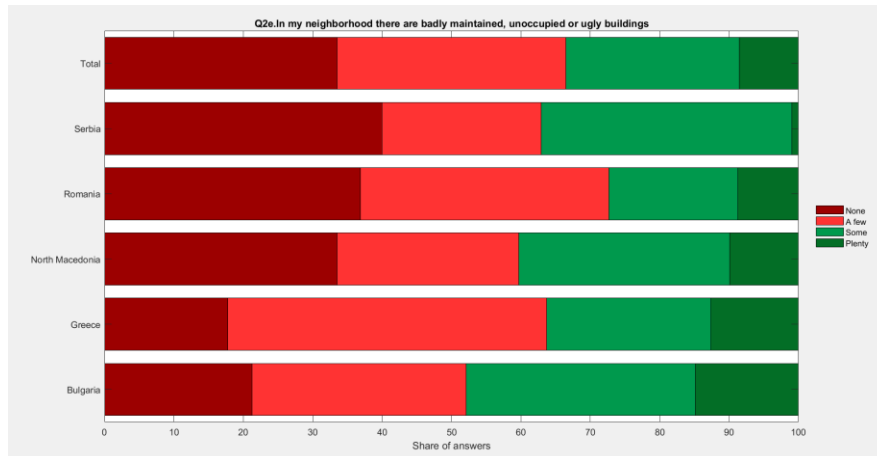
Figure 35. Bad looking objects in the neighboorhood

4.1.3. Walking and cycling infrastructure in your neighborhood

The third question of this section focuses on the status and the existence of infrastructure for active mobility. Again, the respondents have to agree or disagree to a series of statements. The first statement of this question is about the walkability of sidewalks. The majority of the respondents do believe that their sidewalks are walkable. Specifically, 74% of all respondents somewhat agree or strongly agree with the given statement. Smaller cities that participate in the project seems to have more walkable sidewalks, compared to the bigger cities. For instance, only 40% of the Athenians believe that the sidewalks of the city are walkable. The results are summarized in Table 29 and depicted in Figure 36.

Table 29. Infrastructure for active mobility

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	6.96	18.99	28.89	45.17
Greece	14.81	44.44	25.93	14.81
Bulgaria	5.32	8.51	37.23	48.94
Romania	4.86	16.75	29.48	48.91
Serbia	0.98	16.59	24.39	58.05
North Macedonia	15.18	15.71	29.84	39.27
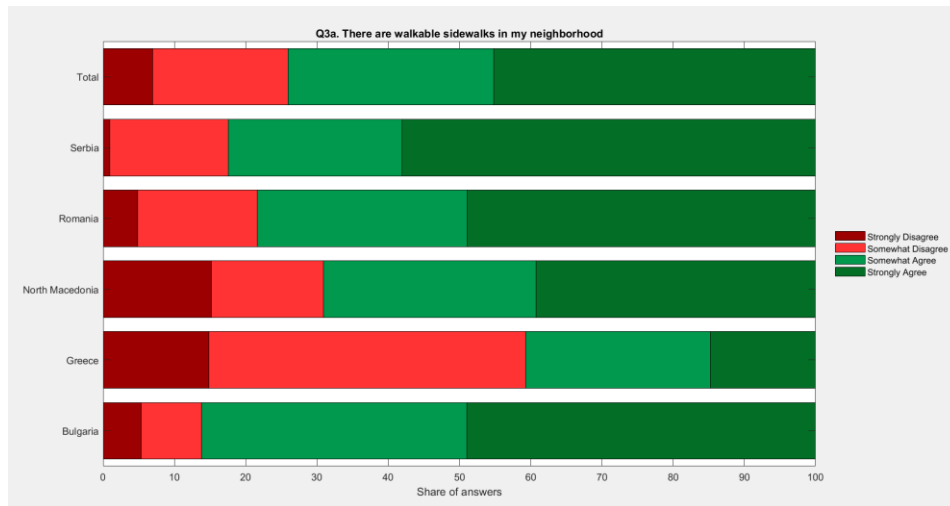
Figure 36. Infrastructure for active transport

The following statement is about the existence of pedestrian zones and trails in the neighbourhood. The replies are roughly similar to the replies obtained for the previous statement with small fluctuations. Again, the Greek respondents disagree on the existence of pedestrian zones and trail and nine out of ten Serbians agree with the statement. Bulgarian respondents also mostly agree with the statement, while the results from Romania and North Macedonia are mixed. The results for this statement are summarized in Table 30 and illustrated in Figure 37

Table 30. Existence of pedestrian zones and trails

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	12.60	20.70	32.49	34.21
Greece	27.41	39.26	24.44	8.89
Bulgaria	11.70	9.57	26.60	52.13
Romania	9.55	24.96	31.99	33.50
Serbia	2.44	1.46	45.37	50.73
North Macedonia	23.04	20.42	28.80	27.75
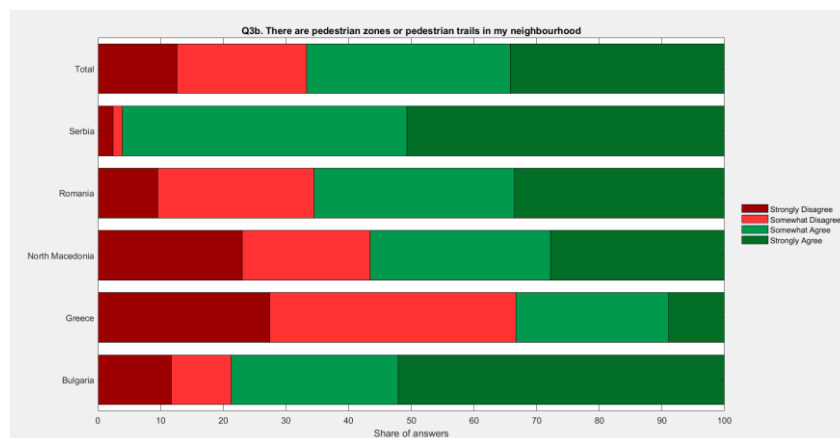
Figure 37. Existence of pedestrian zones and trails

Similarly to previous questions, also to this question it is reflected that there is lack of cycling infrastructure in the participating cities. Only 30.11% of the respondents agree that there are special lanes from cycling in their neighborhood. With only exception being Bulgaria, where 68% agree with the statement, in all other participating cities the positive answers range between 13 and 30%. The results are shown in Table 31 and in Figure 38.

Table 31. Infrastructure for cycling

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	44.93	24.96	19.39	10.72
Greece	58.52	28.15	11.11	2.22
Bulgaria	18.09	13.83	27.66	40.43
Romania	38.69	29.65	19.60	12.06
Serbia	71.22	9.76	19.02	0.00
North Macedonia	39.79	29.84	20.94	9.42
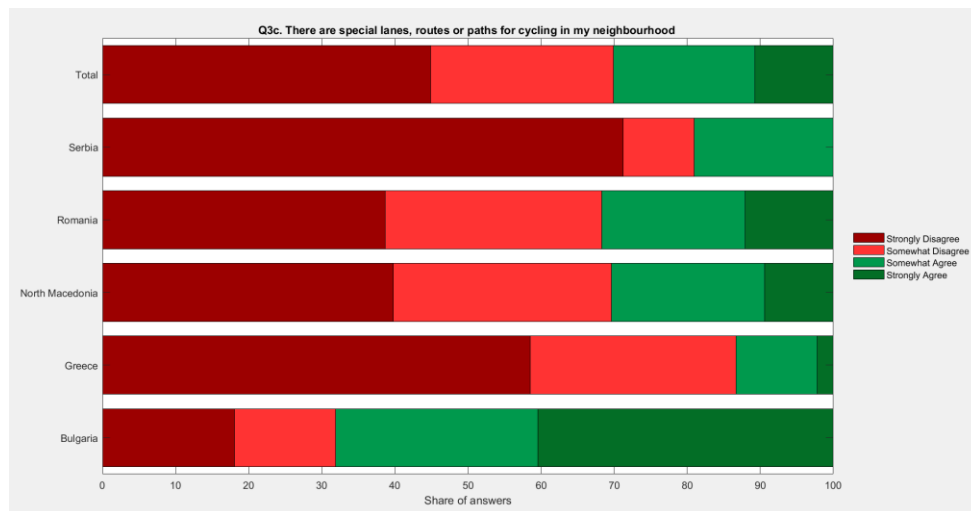
Figure 38. Infrastructure for cycling

Similar replies with the previous statement are obtained in the statement on cycling traffic segregation. Again, 29% of all respondents agree that there are cycling routes that are separated from the rest of the traffic. As with the previous statement, only Plovdiv seems to have cycling infrastructure segregated from the rest of the traffic. Athens lacks cycling infrastructure, including cycling lanes segregated from the rest of the traffic and this is reflected in the replies given with only 9.63% agreeing with the statement. All results are shown in Table 32 and Figure 39.

Table 32. Available cycling routes

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	45.83	25.12	16.12	12.93
Greece	72.59	17.78	6.67	2.96
Bulgaria	22.34	12.77	27.66	37.23
Romania	44.89	22.78	15.91	16.42
Serbia	33.17	46.34	20.49	0.00
North Macedonia	54.97	20.94	13.09	10.99
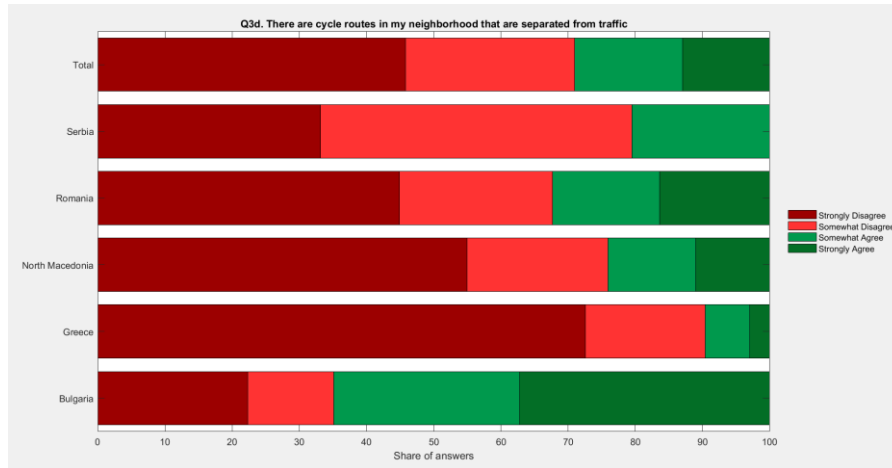
Figure 39. Available cycling routes

The respondents in all participating countries seem to agree that there are not safe areas to park bicycles in their neighborhood. Specifically, 80% of the respondents believe that there are no safe parking slots for bicycles. In Athens, only 5% believe that they can park safely their bicycle. The highest share as with the previous statements on bicycle can be found in Bulgaria with 33% of the respondents believing that they can find a safe parking slot for their bicycle. The percentage of positive replies of Romania, Serbia and North Macedonia is around 20%. The results are summarized in Table 33 and illustrated in Figure 40.

Table 33. Safety biking areas

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	52.99	24.00	15.97	7.04
Greece	70.15	24.63	2.99	2.24
Bulgaria	42.55	24.47	22.34	10.64
Romania	41.88	32.33	16.58	9.21
Serbia	74.63	3.41	21.95	0.00
North Macedonia	57.59	19.37	13.61	9.42
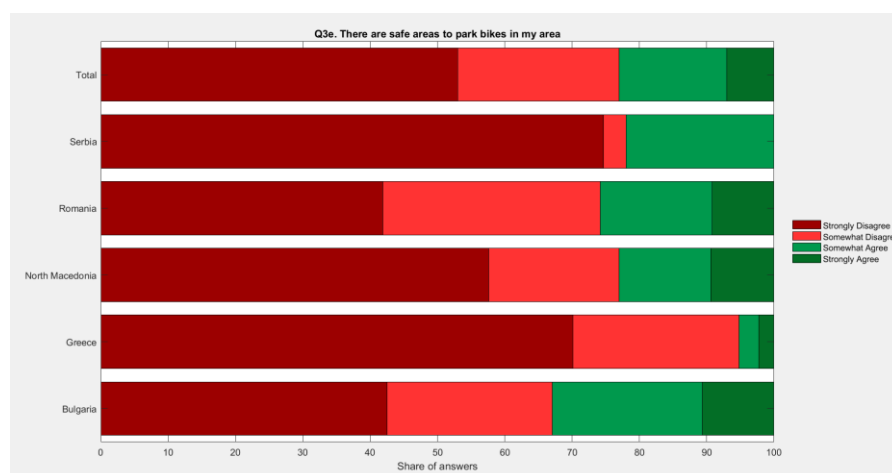
Figure 40. Safety biking areas

4.1.4. Neighborhood safety

The next question from neighborhood section of the questionnaire, explores safety aspects of the neighborhood in conjunction with walking and cycling. The first statement on which respondents had to express to which extend they agree or disagree is if it is safe to leave locked a bicycle in a neighborhood. The results are mixed in the majority of the participating countries with almost equal share of agreement and disagreement. The only exceptions are Serbia and Bulgaria, where the respondents feel more insecure living their bicycles locked in their neighborhoods. The results are summarized in Table 24 and shown in Figure 41.

Table 34. Safety aspects of walking and cycling

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	20.29	30.20	32.98	16.53
Greece	12.59	38.52	37.04	11.85
Bulgaria	11.70	28.72	44.68	14.89
Romania	22.45	38.86	22.78	15.91
Serbia	26.83	2.93	50.24	20.00
North Macedonia	16.23	27.23	37.70	18.85
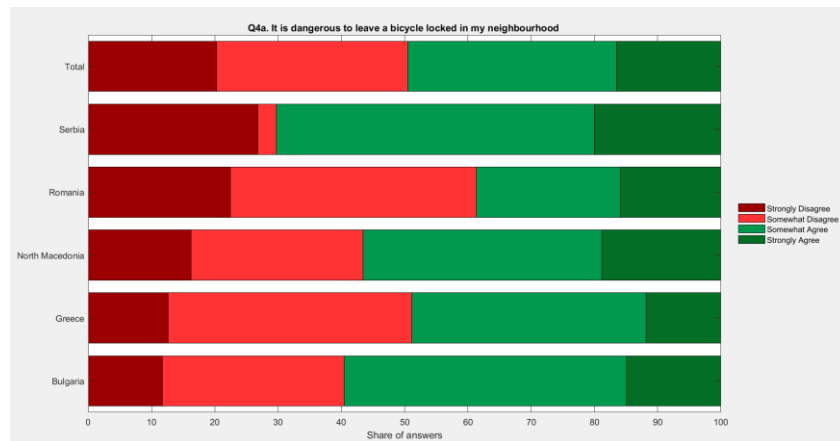
Figure 41. Safety aspects of walking and cycling

The second statement on safety is about the existence of sufficient number of pedestrian crossings. 57.28% of the respondents believe that there are enough safe places to cross busy streets. In Serbia and in Greece, the highest share of respondents agrees that that there the number of pedestrian crossings in not sufficient by 54.15% and 57.78% respectively. The share of the different replies on the statement 4b are shown in Table 35 and illustrated in Figure 42.

Table 35. Existence of pedestrian crossings

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	25.29	32.00	30.93	11.78
Greece	11.11	31.11	36.30	21.48
Bulgaria	21.28	36.17	30.85	11.70
Romania	27.64	37.52	23.62	11.22
Serbia	34.15	11.71	53.17	0.98
North Macedonia	20.42	35.08	26.18	18.32
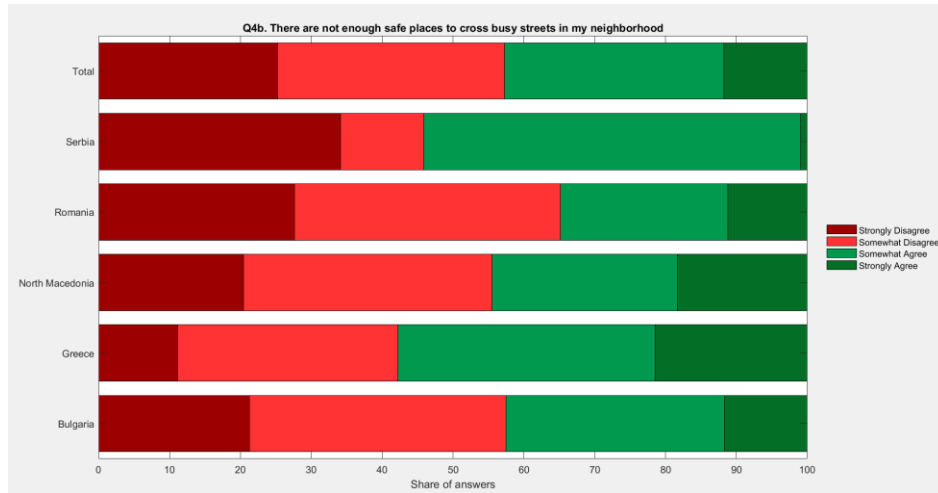
Figure 42. Existence of pedestrian crossings

Traffic does not increase danger for walking according to the results obtained in the participating Balkan cities. Specifically, the 68.8% of all respondents disagrees with the statement that walking is dangerous because of traffic. Only Serbians consider that traffic is a factor that increases danger for pedestrians, while in the rest of the countries approximately one out of four agrees with the statement. The results are shown in Table 36 and in Figure 43.

Table 36. Safety in walking

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	31.94	36.86	23.26	7.94
Greece	21.64	55.97	15.67	6.72
Bulgaria	31.91	36.17	26.60	5.32
Romania	40.87	34.00	16.08	9.05
Serbia	16.10	31.22	51.71	0.98
North Macedonia	28.27	38.74	18.85	14.14
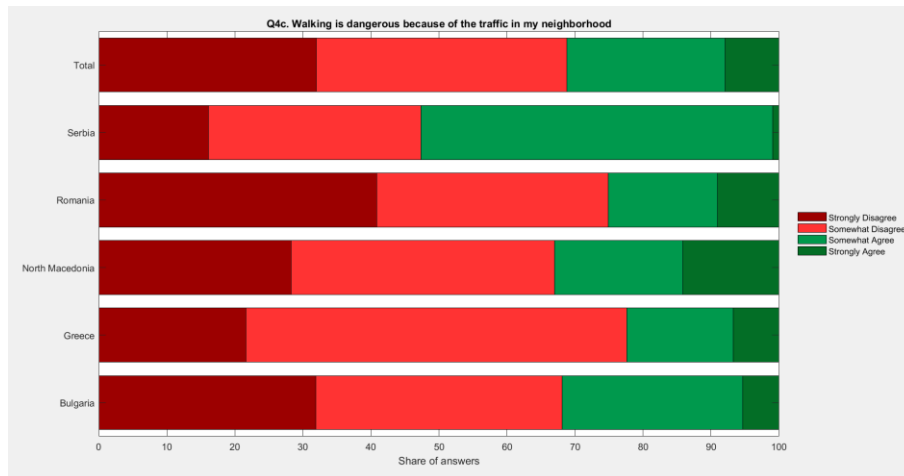
Figure 43. Safety in walking

While traffic doesn't affect walking, it definitely affects cycling. Respondents agreed with the statement that cycling can be dangerous because of traffic. This result is in line with the opinion of people on cycling infrastructure and the lack of cycling lanes and safe places to park their bicycles. Even Bulgarian respondents that mostly believe that they have sufficient cycling infrastructure, believe that cycling can be dangerous because of the rest of the traffic. Romanian respondents gave mixed answers with 53.1% disagreeing with the statement and 46.9% agreeing with the statement. The results are shown in Table 27 and illustrated in Figure 44.

Table 37. Safety in cycling

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	16.20	30.28	33.06	20.46
Greece	9.63	27.41	33.33	29.63
Bulgaria	21.28	22.34	39.36	17.02
Romania	18.59	34.51	27.47	19.43
Serbia	10.73	21.95	51.71	15.61
North Macedonia	16.75	31.94	27.23	24.08
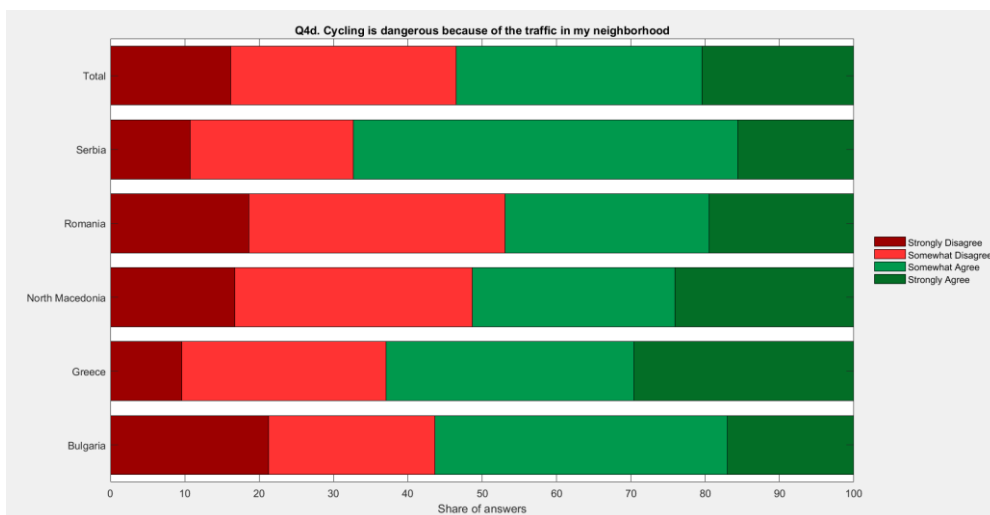
Figure 44. Safety in cycling

The last two statements focus on the level of crime during day and night. In all countries, respondents are extremely confident that it is safe both during the day and during the night. During the day, 90.75% of respondents believe that their neighborhood is safe during the day, while 77.82% believe that it is also safe during the night. So crime rate doesn't seem to affect the respondents in any of the participating countries. The results on safety perception during the day are shown in Table 38a and Figure 45a and on the safety perception during the night are shown in Table 38b and Figure 45b.

Table 38a. Neighborhood crime level during the day

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	64.08	26.68	6.55	2.70
Greece	63.70	31.11	3.70	1.48
Bulgaria	68.09	26.60	4.26	1.06
Romania	67.34	21.94	8.21	2.51
Serbia	56.10	43.90	0.00	0.00
N.Macedonia	60.73	19.90	11.52	7.85

Table 38b.Neighborhood crime level during the day

	Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
Total	42.23	35.60	15.22	6.96
Greece	31.85	42.96	18.52	6.67
Bulgaria	48.94	25.53	21.28	4.26
Romania	46.73	29.98	14.91	8.38
Serbia	31.71	52.20	16.10	0.00
North Macedonia	43.46	35.08	9.95	11.52
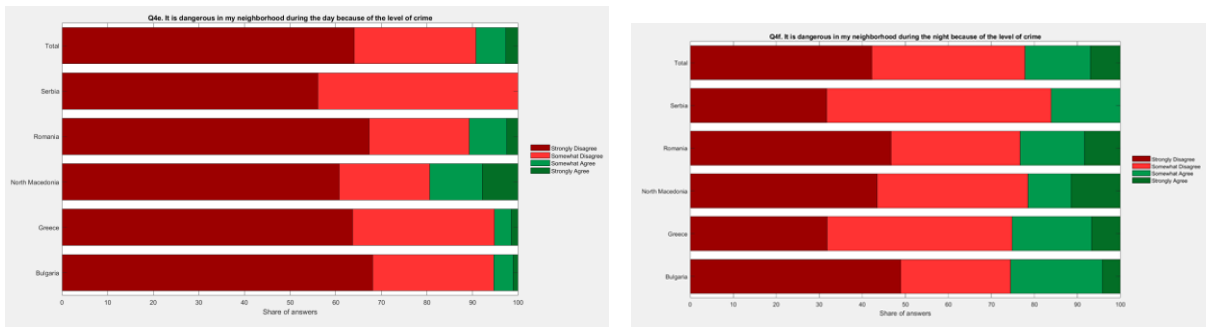
Figure 45. Neighbourhood crime level during the day (a) and night (b)

4.1.5. Dominant mode of transportation for non-commuting trips

Table 39 and Figure 46 shows the modal split per country for non-commuting trips. It can be observed that the most dominant modes are walking and car. In Bulgaria, the highest share of respondents that mostly walk for their non commuting trips can be found. The highest share of car use for non-commuting trips is found in North Macedonia. The next are bus services, which are not available in all cities. Same applies for urban rail systems which can be found only in Athens, Greece and Bucharest, Romania. Taxi is used by one third of the participants from Nis. Bicycle shows extremely low shares of use. Finally, it is observed that the Balkan countries don't have car sharing culture or schemes.

Table 39. Dominant mode for transport for non-commuting trips

	Foot	Bicycle	Scooter	Motorcycle	Bus	Urban Rail	Car	Taxi	Carsharing
Total	35.11	1.96	0.82	0.16	12.52	10.97	29.62	8.67	0.16
Greece	29.63	2.22	0.00	0.00	17.04	10.37	37.78	1.48	1.48
Bulgaria	62.77	5.32	0.00	0.00	8.51	0.00	22.34	1.06	0.00
Romania	36.01	1.84	0.50	0.34	20.27	20.10	19.10	1.84	0.00
Serbia	19.51	0.00	0.00	0.00	0.00	0.00	41.46	39.02	0.00
N. Macedonia	39.27	2.62	3.66	0.00	0.52	0.00	47.64	6.28	0.00
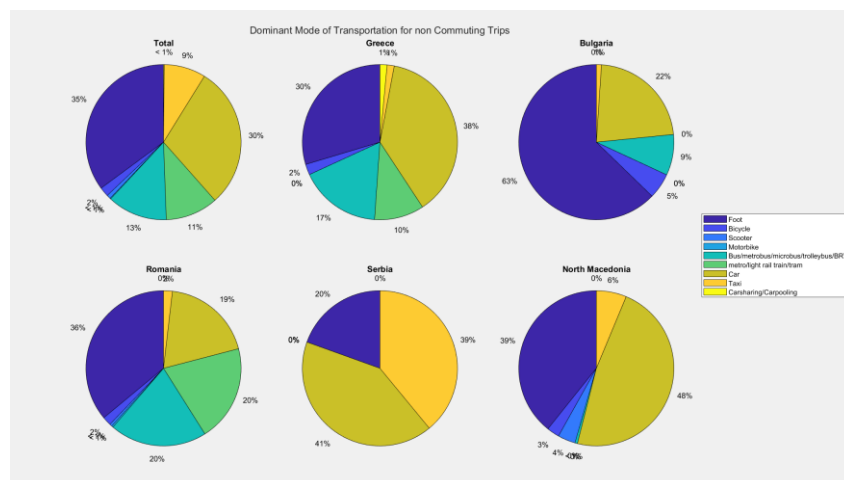
Figure 46. Dominant mode for transport for non-commuting trips

4.1.6. Dominant mode of transportation for commuting trips?

When it comes to commuting trips the use of public transportation and car is dominant. Table 40 and Figure 47 shows the modal split for commuting trips in the participating countries. Greek and North Macedonian participants used mostly the car and Serbians taxi. It is observed that in North Macedonia, respondents also walk a lot to work. Car and Bus have equal share in Bulgaria. As with the non-commuting trips, the shares of cycling and carsharing are extremely low.

Table 40. Dominant mode for transport for commuting trips

	Foot	Bicycle	Scooter	Motorcycle	Bus	Urban Rail	Car	Taxi	Carsharing
Total	18.51	1.31	0.49	0.41	18.26	26.13	25.88	8.35	0.66
Greece	12.59	0.74	0.00	0.74	19.26	22.96	41.48	1.48	0.74
Bulgaria	23.66	4.30	1.08	0.00	32.26	0.00	32.26	3.23	3.23
Romania	8.54	0.50	0.50	0.50	27.14	48.24	13.07	1.17	0.34
Serbia	27.32	2.93	0.00	0.00	0.00	0.00	30.73	39.02	0.00
North Macedonia	41.88	1.05	1.05	0.52	2.62	0.00	46.60	5.24	1.05
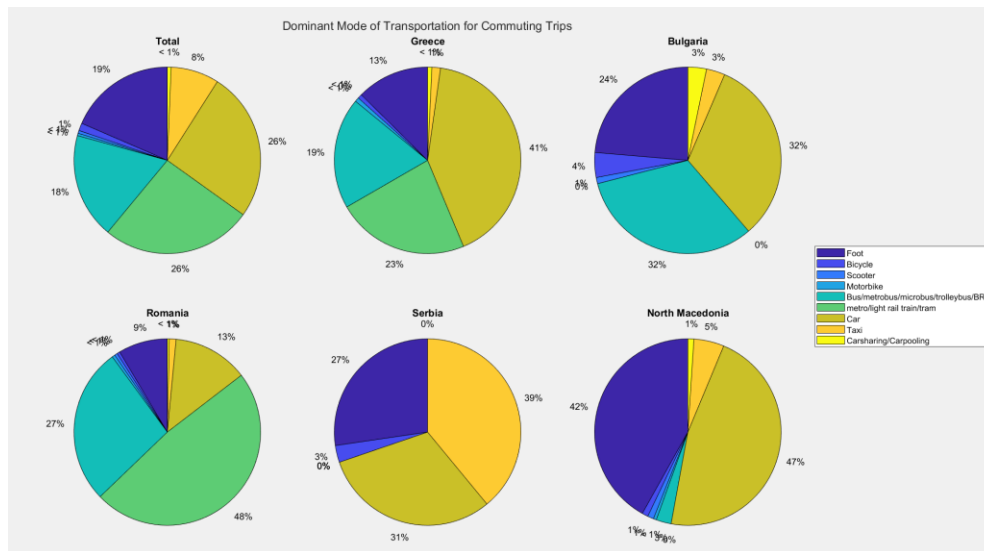
Figure 47. Dominant mode for transport for non-commuting trips

4.1.7. How often do you use public transportation?

The next question is about the frequency the respondents use public transportation. Overall, the majority of respondents uses public transportation everyday, but the results vary with the city and the availability of public transport services. For instance, in Athens and Bucharest which have an extensive public transport network the respondents use more frequently public transport. In smaller cities such as Nis and Shtip the frequency is much lower and there are many respondents that don't use public transport at all. The results are shown in Table 41 and illustrated in Figure 48.

Table 41. Use of public transport

	Never	Rarely	A few times per month	A few times per week	everyday
Total	18.58	17.35	19.23	7.04	37.81
Greece	11.11	25.93	20.74	11.11	31.11
Bulgaria	20.21	21.28	22.34	24.47	11.70
Romania	5.19	14.74	7.37	5.19	67.50
Serbia	34.63	0.00	65.37	0.00	0.00
North Macedonia	47.64	36.13	4.19	8.90	3.14
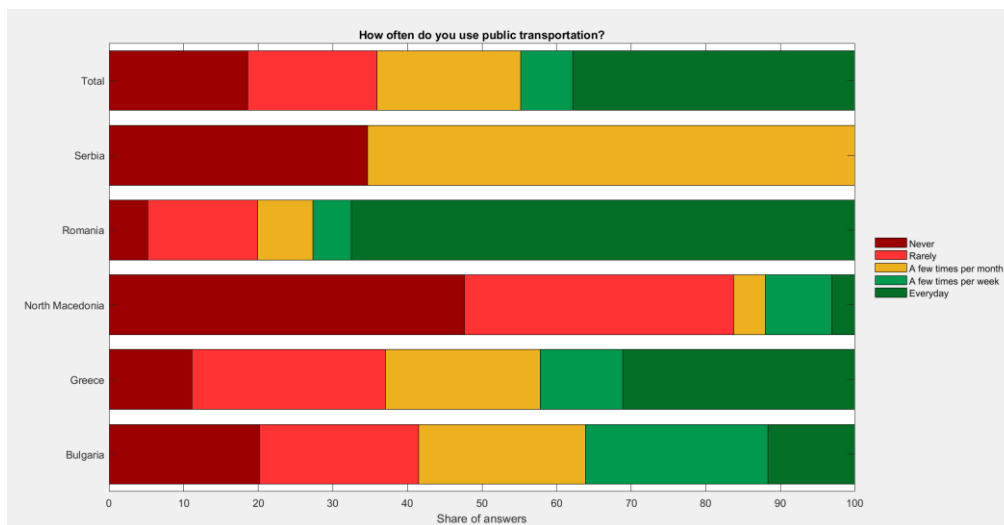
Figure 48. Use of public transport

4.1.8. Facilities for shopping/ Social/ Recreational facilities of the neighborhood

In the last question of this section of the survey, the respondents are asked to characterize the different facilities of their area. All than Serbia find the facilities in their area medium attractive with shares ranging between 34% and 50%. Serbian respondents find their facilities little to no attractive at all in a significant 80%. Bulgarian respondents on the other hand are the ones finding their facilities the most attractive with more than 40% replying so. The results are shown in Table 42 and illustrated in Figure 49.

Table 42. Recreational and shopping facilities in neighbourhood

	Not attractive	Little Attractive	Medium	Very Attractive	Extremely Attractive
Total	5.94	19.90	50.50	15.80	7.86
Greece	8.33	18.94	50.76	15.91	6.06
Bulgaria	6.52	15.22	34.78	32.61	10.87
Romania	0.00	7.71	61.81	19.43	11.06
Serbia	19.51	62.93	14.63	0.00	2.93
North Macedonia	8.24	14.12	62.35	12.94	2.35
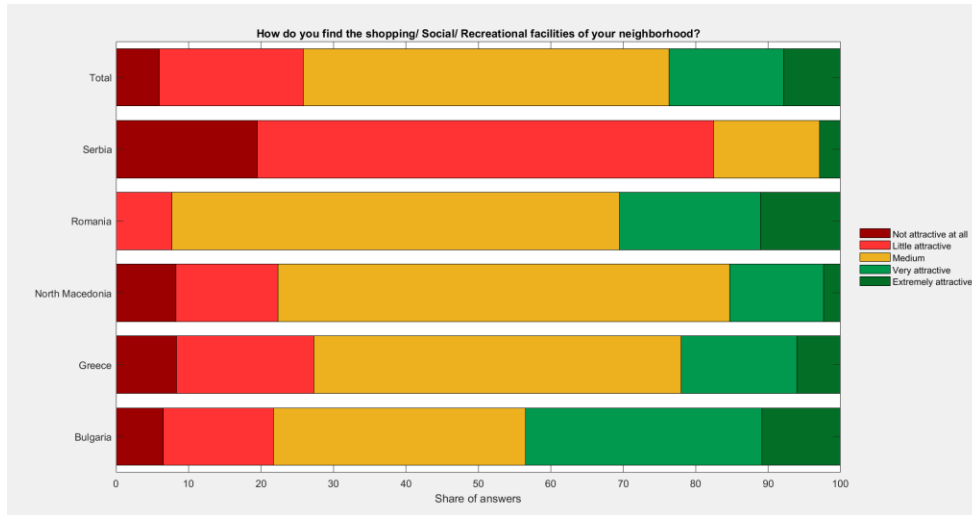
Figure 49. Recreational and shopping facilities in neighbourhood

4.2. PHYSICAL ACTIVITY QUESTIONER (IPAQ)

The short version of International Physical Activity Questionnaire (IPAQ) was applied to identify the physical activity level of 1220 women in Balkan countries, at the age between 18 and 30 years old included in the project study.

The aim of applied IPAQ questioner was to identify physical activity level of women included in the project, based on self-reported answers for their physical activity in last seven days considered the day of fulfilling the survey. The answers include all types of physical activity (PA)[1] done at work, home, yard, active transport during the day, activity during leisure time, sport and recreational activities etc. The results are presented for the total sample including participants from all 5 countries and separately by countries in terms to identify differences on national level.

The first question from IPAQ (Q12) refers to number of days spent in **vigorous physical activities** like heavy lifting, digging, aerobics, or fast bicycling. Following the result analyses, the mean value for all participants is 2 days per week ($\bar{X} = 2,28$) spend in vigorous physical activity. Following the percentual distribution, majority of participants, or 30% are engaged in vigorous PA 3 days per week and 17,5% of them 2 days per week. Only 7% of participants practice vigorous activities 4 days per week and only 6,6%, 5 days per week. Unfortunately, 24% of participants don`t spend any days in vigorous PA (Table 43a, 43b and Figure 50a).

Table 43a. Days spend in vigorous PA

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1220	7	7	0	2.28	0.051	2.00	3	1.774	3.145	2

Table 43b. Days spend in vigorous PA per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1220	7	7	0	2.28	0.51	1.774	3.145	2
Greece	135	7	7	0	2.04	0.159	1.842	3.394	0
Bulgaria	92	7	7	0	3.21	0.214	2.057	4.232	2
Romania	597	7	7	0	2.00	0.074	1.815	3.295	0
Serbia	205	7	7	0	3.03	0.029	0.413	0.170	0
North Macedonia	191	7	7	0	2.05	0.142	1.967	3.871	0
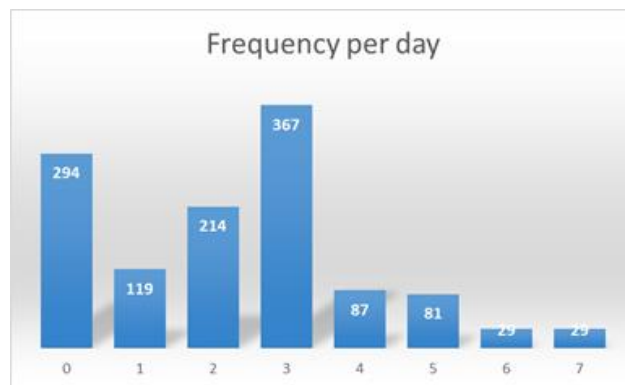
Figure 50a: Days spend in vigorous PA in total

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[1] Further in the text, for the term *physical activity* we will use the abbreviation *PA*

Following the distribution of results per countries, it can be concluded that the largest number of participants from Greece, Romania and North Macedonia are not involved in vigorous PA as they have chosen 0 active days. The largest number of participants from Serbia and Bulgaria are engaged in vigorous PA 3 days per week (Graphic 50b and Table 43b). The second largest number of participants in Greece are engaged in vigorous PA 3 days per week, in Bulgaria, Romania and North Macedonia is two times per week, while in Serbia, equal number of participants selected two and five times per week for vigorous PA.
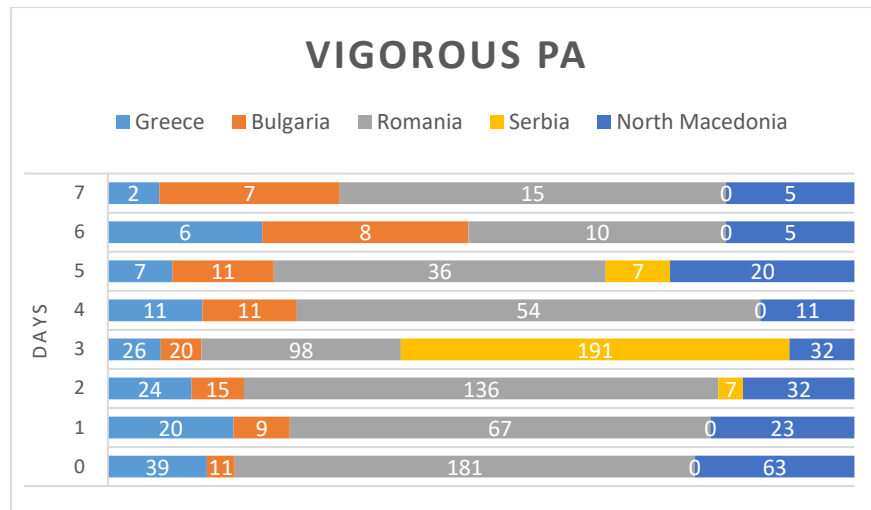
Figure 50b: Days spend in vigorous PA per country

Related to the time (minutes) spent in vigorous PA, the average time for practicing vigorous PA is 58 minutes during active days ($\bar{X}$ = 58.16). In particular, 26% (25,6%) of all participants included in the study were engaged in vigorous PA for 60 min per day, 17% were active 120 minutes per day and 12% were active for 30 min per day. On the side of inactivity, 22% (21.9%) or the second largest group of selection from the total sample, did not spend any time in vigorous PA. Average distribution per minutes for all sample is presented in Table 44a and per country in Table 44b. The distribution per minutes for all sample is presented in Appendix, Table 1.

Following the recommendation of WHO (2019)[2], adults at the age between 18 and 64 which includes our target group as well, should do at least 75–150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week. This means that participants from our study, as a group does not meet these recommendations from WHO.

Table 44a. Minutes spend in vigorous PA

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1221	360	360	0	58.16	1.628	60.00	60	56.902	3237.877	1

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[2] https://www.who.int/news-room/fact-sheets/detail/physical-activity

Table 44b: Minutes spend in vigorous PA

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1221	360	360	0	58.16	1.628	56.902	3237.877	1
Greece	135	130	130	0	39.51	3.066	35.628	1269.356	0
Bulgaria	93	300	300	0	52.17	4.980	48.030	2306.840	1
Romania	597	360	360	0	42.98	2.187	53.448	2856.704	0
Serbia	205	100	160	60	91.22	2.253	32.252	1040.172	0
North Macedonia	191	300	300	0	86.23	5.482	75.768	5740.786	0

The next question refers to **moderate PA** or activities that require moderate physical effort manifested in breathing that is somewhat harder than normal and are practiced for at least 10 minutes at a time. Moderate PA includes activities such as carrying light loads, bicycling at a regular pace, doubles in tennis and walking is excluded from this group. Following the results, participants from our sample were active in moderate PA two days per week ($\bar{X}$ = 2,18) (Table 45, Figure 52 and 53).

Analyzing the percentual distribution, majority of participants, or 29% (28,8%) are not engaged in moderate PA. The second largest group of selection, or 21% of the participants are moderately active 2 days per week. Equal number of participants are engaged in moderate PA 3 and 4 days per week (13,3% and 13,5 % accordingly). The rest of participants practice moderate activities 1 day per week (11%), 6% are engaged 5 days per week while 5,2% are moderately active every day during the week. (Table 4b). This leads us to conclusion that despite the larger number of inactive women, on the side of active one, the number of days for moderate PA can be seen as satisfactory.

Table 45a: Days spent in moderate PA

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance
Total	1222	7	7	0	2.18	0.056	2	0	1.971	3.885

Table 45b: Days spent in moderate PA per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1222	7	7	0	2.18	0.056	1.971	3.885	0
Greece	135	7	7	0	2.23	0.187	2.172	4.716	0
Bulgaria	94	7	7	0	3.32	0.218	2.111	4.456	0
Romania	597	7	7	0	1.96	0.076	1.856	3.444	0
Serbia	205	7	7	0	2.28	0.121	1.731	2.996	0
North Macedonia	191	7	7	0	2.15	0.156	2.150	4.624	0
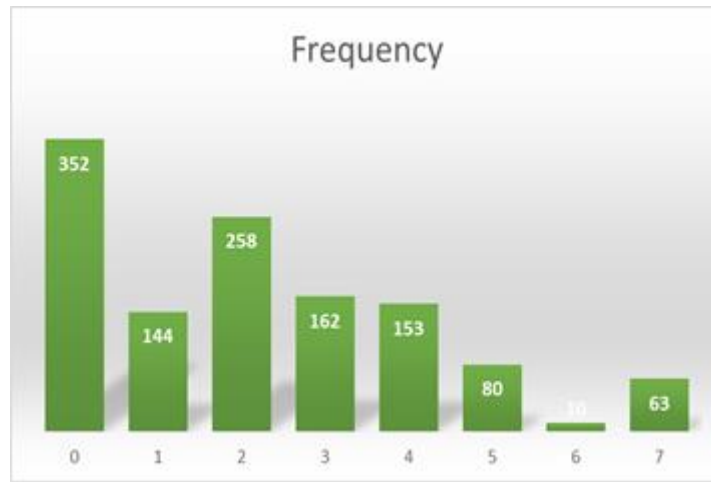
Figure 52: Number of days spent in Moderate physical activity
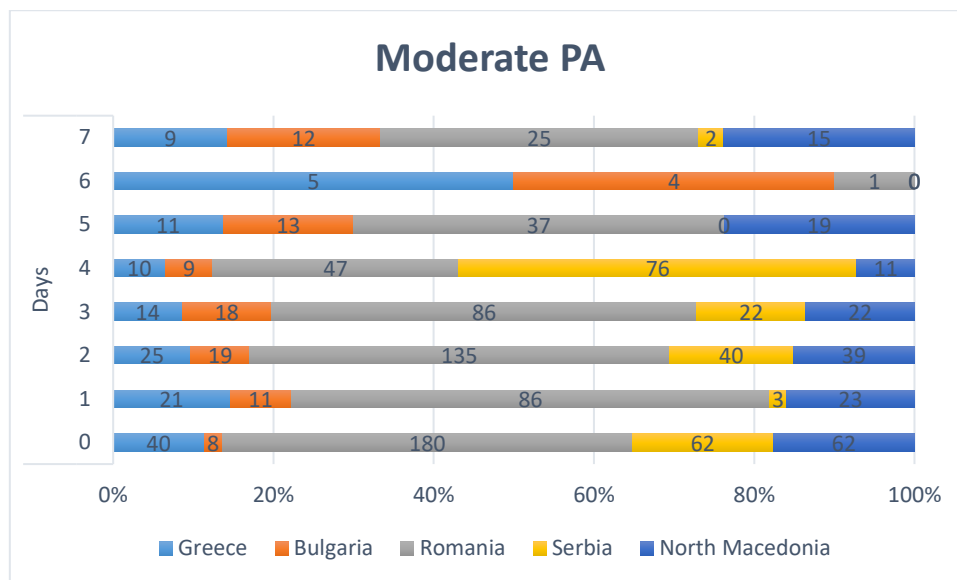
Figure 53: Days per country spend in moderate physical activity

Following the **time (minutes) per day** spent in moderate PA, the average time per day is 56 minutes ($\bar{X}$ = 56.34) (Table 46a). Following the result analyses, 14% (14,4%) practice moderate activities for 30 min during active days, 20% (19,6%) are engaged in moderate PA for 60 minutes during active days and 7% (6.6%) are active for two hours or 120 minutes during active days. These results are presented in Appendix, Table 2. In addition, Table 46b presents the average number of minutes per country. These results are far below WHO recommendation according to which adults should do at least 150–300 minutes of moderate-intensity aerobic physical activity (WHO, 2019).

Table 46a: Minutes per day spent in moderate PA

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1220	600	600	0	56.34	2.279	30.00	0	79.601	6336.281	2

Table 46b: Minutes per day spent in moderate PA per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1220	600	600	0	56.34	2.279	79.601	6336.28	2
Greece	135	360	360	0	33.27	4.215	48.978	2398.872	0
Bulgaria	93	300	300	0	52.25	5.543	53.455	2857.449	1
Romania	597	360	360	0	33.72	1.748	42.705	1823.698	0
Serbia	205	360	360	0	76.37	6.169	88.331	7802.292	0
North Macedonia	190	600	600	0	124.21	9.328	128.581	16532.971	1

Analyzing per country, the mean value for minutes spend in Moderate PA is as follows: 33 minutes per day in Greece, 52 minutes in Bulgaria, 33 in Romania, 76 minutes in Serbia and 124 minutes in North Macedonia. Distribution of minutes per countries is presented at Figure 54.
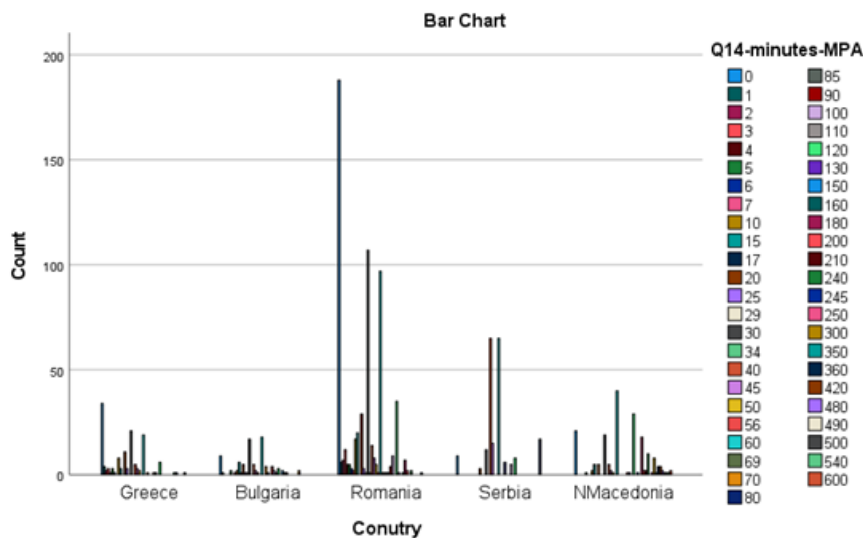
Figure 54. Minutes per country spent in Moderate PA

Walking is one of the easiest and most frequent forms of physical activity across all generation and the easiest one to do it and to incorporate in everyday routine (walking to school, university, work, walking during leisure time etc). This is also confirmed with the results obtained in our study. Namely, the average number of days that participants walk at least 10 minutes in time is 6 days ($\bar{X}$ = 5.72) (Table 47a).

Table 47a: Days spent in walking

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1222	7	7	0	5.72	0.052	7.00	7	1.833	3.359	0

The further analyses suggest that 60% (57.4%) of the participants walk more than 10 minutes in continuum seven days per week, followed by 15% (15.1%) that walk five days per week and 7% that walk six days per week. These results are presented in Appendix, Table 3. The results for walking analyzed by countries are presented in Table 47b and Graphic 55. These results suggest on good walking habits among our participants and probably use of walking as a mean of active transport. Analyzed per country, average days spent in walking is five days in North Macedonia ($\bar{X}$ = 4.76) and Serbia ($\bar{X}$ = 5.46) and six days in Greece ($\bar{X}$ = 5.60), Bulgaria ($\bar{X}$ = 5.73) and Romania ($\bar{X}$ = 6.14)

Table 47b: Days spent in walking per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1222	7	7	0	5.72	0.052	1.833	3.359	0
Greece	135	7	7	0	5.60	0.171	1.990	3.958	0
Bulgaria	94	7	7	0	5.73	0.198	1.924	3.703	0
Romania	597	7	7	0	6.14	0.062	1.519	2.308	0
Serbia	205	7	7	0	5.46	0.126	1.803	3.250	0
North Macedonia	191	7	7	0	4,76	0.157	2.163	4.679	0
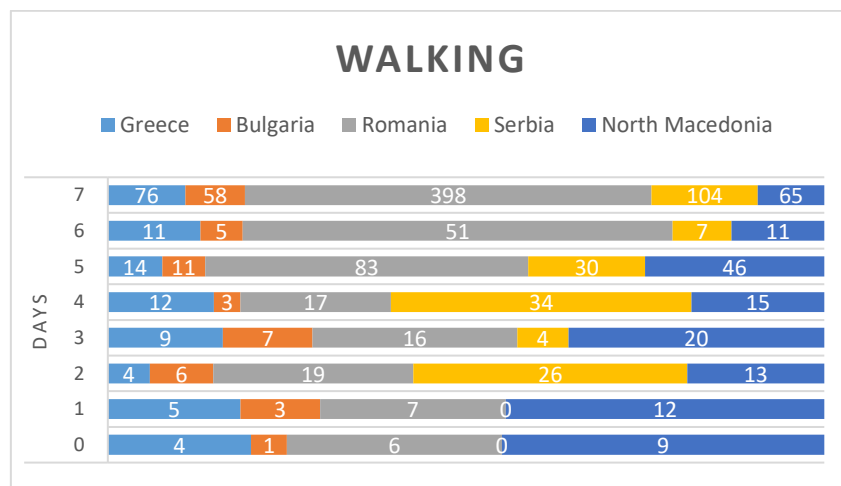
Figure 55. Days spend in walking per country

The average time (minutes) spent in walking is 71 minutes per day ($\bar{X}$ = 71.01) (Table 48a, Figure 56). According to the results presented in Table 40b, from 1208 participants that reported their walking time per day, 20% (19.7%) spent 30min per day in walking, 15% walk for 60 minutes daily, 8 % walk for 120 minutes per day and 4% (4.1%) walk 180 min or three hours during the day. Following the recommendation from WHO Physical activity guidelines (2020) and results from different studies, a recommended target number of daily steps for achieving health benefits is 10.000 steps per day. Some study evidence that the number of target steps per day depends from the age, refereeing that age group below 60 years should have 8000 to 10.000 step per day for health benefits (Paluch et al, 2022).

Table 48a: Minutes per day spent in walking

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1208	600	600	0	71.01	2.034	45.00	30	70.679	4995.555	14

Analyzed per country, there are quite differences between our participants. The lowest average number of minutes spend in walking per day is noted for participants from Serbia, 36 minutes ($\bar{X}$ = 35.84), followed by Greece, 44 minutes ($\bar{X}$ = 43.87), Bulgaria with 70 minutes in average ($\bar{X}$ = 69.90), 82 minutes in Romania ($\bar{X}$ = 82.39), and 90 minutes in North Macedonia ($\bar{X}$ = 90.31). These results are presented in Table 48b.

Compared with results for walking per day, participants in Serbia are less engaged in walking 5 days per week and 36 minutes per day, while participants from North Macedonia walk 5 days per week but longest time per day.

Table 48b: Average minutes per day spent in walking per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1208	600	600	0	71.01	2.034	70.679	4995.555	14
Greece	135	180	180	0	43.87	3.411	39.634	1570.893	0
Bulgaria	94	240	240	0	69.90	5.797	56.207	3159.206	0
Romania	597	420	420	0	82.39	3.093	75.567	5710.363	0
Serbia	191	105	120	15	35.84	1.539	21.265	452.189	14
North Macedonia	191	600	600	0	90.31	6.539	90.370	8166.743	0
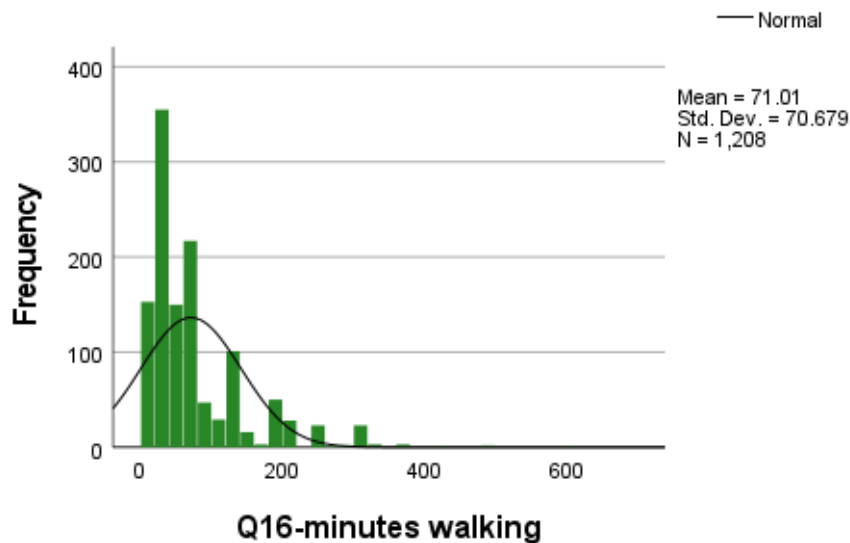
Figure 56. Number of minutes spent in walking

Closely related with time spend in PA, but in negative correlation, is the time spend in **sitting and screen time**. It refers to time spend sitting on weekdays, including time spent at work, at home, while doing course work and during leisure time. This includes time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

Following the results from participants in our study, in average they spend 209 minutes per day in sitting or more than 3 hours per day ($\bar{X}$ = 208.51) (Table 49a, Figure 57). The distribution of time spend in sitting is quite divers among participants in our study. Particularly, the largest group of participants or 19% (18,7) reported to spend 2 hours per day in sitting, followed by 10% (9.6%) reported

to sit for 360 minutes per day or 6 hours and 9% (8.8%) reported to spend 60 minutes per day in sitting. These results are presented in Table 4 in Appendix. The average number of minutes spend in sitting per country is presented in Table 49b. Following these results, minimal time spend in sitting is noted for participants from Romania 145 min, followed by participants from Serbia, spending 166 minutes in average, North Macedonia 298 minutes weekly, Bulgaria 326 minutes and Greece 352 minutes per week in average.

WHO in their Guidelines for Physical activity and sedentary behavior (2020), identified prolonged sitting and sedentary behavior as related to increased healthy risks and mortality from cardiovascular diseases, cancer and Diabetes 2 (WHO, 2020).

Table 49a: Basic descriptive parameters for minutes spent in sitting

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1212	900	900	0	208.51	5.143	120.00	120	179.056	32061.191	10

Table 49b: Distribution of minutes spend in sitting per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1212	900	900	0	208.51	5.143	179.056	32061.191	10
Greece	135	900	900	0	351.66	16.070	186.718	34863.480	0
Bulgaria	85	598	600	2	326.08	18.981	175.000	30625.148	9
Romania	597	890	900	10	145.48	6.541	159.812	25539.767	0
Serbia	205	440	500	60	165.66	6.114	87.533	7661.942	0
North Macedonia	190	900	900	0	298.48	13.526	186.439	34759.500	1
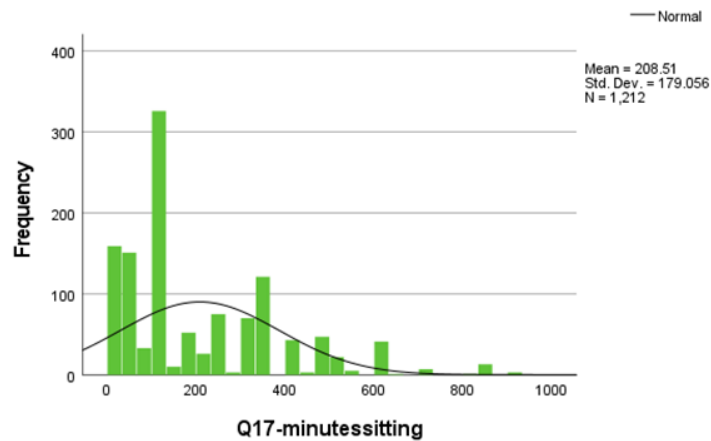
Figure 57: Number of minutes spent in sitting

Living in the era of technology, **screen time** is another issue that is closely related to PA levels and overall health and well – being. Following the data analyses for the time spent in front of screen (TV, computer, tablets, smartphones etc), an average time of 350 minutes is noted for our participants ($\bar{X}$ = 349.96) (Table 50a, Figure 58). The rang of reported minutes for screen time during weekdays varies from several minutes up to more than 10 hours. Following the results presented in Appendix in Table 5, majority of participants, 13.1% spend 180 minutes or three hours per day in front of screen,

14% (13.7%) spent 120 minutes in screen time, 8% use 300 minutes or 5 hours from their day in front of the screen and for 8% this goes up to six hours or 360 minutes daily.

Table 50a. Screen time during weekdays- basic descriptive parameters

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1141	5000	5000	0	349.96	13.009	240.00	120	439.421	19309 0.640	81

Table 50b. Screen time during weekdays per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Greece	135	3000	3000	0	377.16	26.079	303.010	91815.197	0
Bulgaria	83	833	840	7	283.88	20.744	188.988	35716.522	11
Romania	541	4990	5000	10	397.10	25.011	581.745	338427.051	56
Serbia	205	740	800	60	232.39	8,893	127.328	16212.396	0
North Macedonia	177	1800	1800	0	352.32	21.451	285.386	81445.172	14

When referring to screen time during the weekday, analyzed per country, less average minutes during workdays are noted for Serbia, 232 minutes Serbia ($\bar{X}$ = 232.39), followed by 283 noted for participants from Bulgaria ($\bar{X}$ = 283.88), 352 minutes or nearly 6 hours reported for participants from North Macedonia ($\bar{X}$ = 352.32), 377 minutes in average for participants from Greece ($\bar{X}$ = 377.16) and 397 minutes in average or nearly 7 hours for participants from Romania ($\bar{X}$ = 397.10). Results per country are presented at Table 50b.
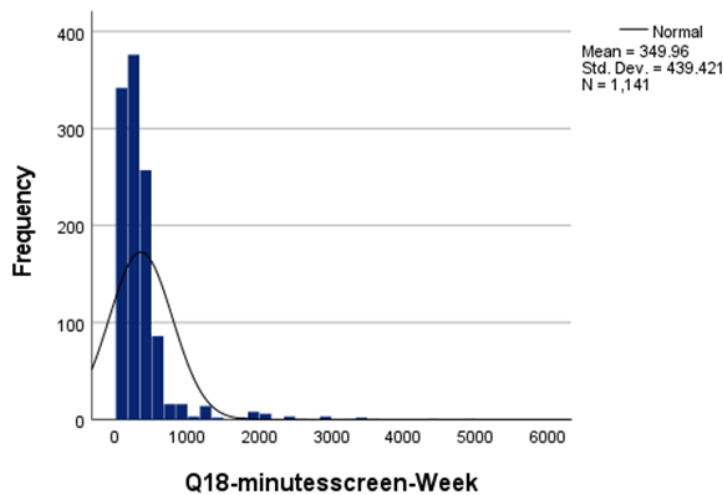
Figure 58. Minutes of screen time during weekdays

During weekends, the average time spent in front of the screen is 245 minutes or 4 hours ($\bar{X}$ = 245.18) (Table 51a). Following the results presented in Table 6 in Appendix, 16% (16,2%) spent 120 minutes on screen time during the weekend, followed by 9% (9,2%) that use 3 hours from their weekend on screen, 9% (8.7%) spending 60 min during weekend and 8% that spent 300 minutes or 5 hours from period of 48 hours in total on screen using some electronic device. Summarized results are presented at Figure 59, while results per country are presented at Figure 60.

Analyzing country specific results presented in Table 51b, less average time during weekends spent in sitting is noted for participants from Serbia 106 minutes ($\bar{X}$ = 105.80), followed by 207 minutes

($\bar{X} = 207.25$) in Bulgaria, 242 minutes in Greece ($\bar{X} = 242.30$), 267 average minutes screen time during weekends for participants in Romania ($\bar{X} = 266.65$) and 349 minutes ($\bar{X} = 348.68$) or nearly 6 hours for participants in North Macedonia (Figure 61). Comparing these results with average screen time during weekdays, can be noted that participants from Serbia in general spend less time on screen both during weekdays and weekends.

These results suggest that time spend in front of the screen is much longer than time spent in physical activity, and this has negative effect on overall health and well – being. Therefore, in 2020 WHO came up with recommendation and action plan for reducing screen time and sedentary behavior and promote PA and movement (WHO, 2020).

Table 51a. Screen time during weekends- basic descriptive parameters

	Sample size	Range	Max	Min	Average Mean	St Error of Mean	Median	Mode	Std. Deviation	Variance	Invalid
Total	1204	2200	2200	0	245.18	6.828	180.00	120	236.924	56132.826	18

Table 51b. Screen time during weekends- basic descriptive parameters

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1204	2200	2200	0	245.18	6.828	236.924	56132.826	18
Greece	135	720	720	0	242.3	13.580	157.783	24895.434	0
Bulgaria	83	593	600	7	207.25	14.536	132.431	17537.899	11
Romania	594	2200	2200	0	266.65	10.941	266.65	71104.825	3
Serbia	205	200	240	40	105.80	2.970	42.530	1808.785	0
North Macedonia	187	1300	1300	0	348.68	19.947	272.776	74406.679	4
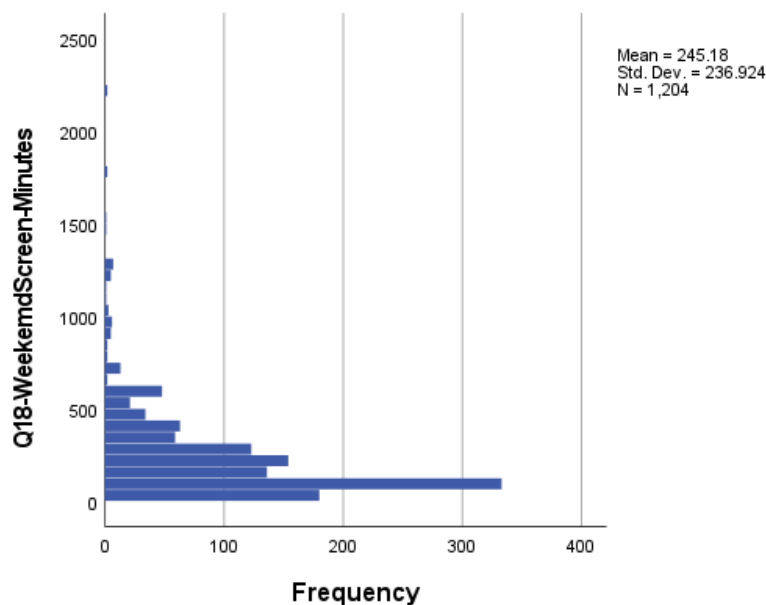
Graphic 59. Minutes of screen time during weekends
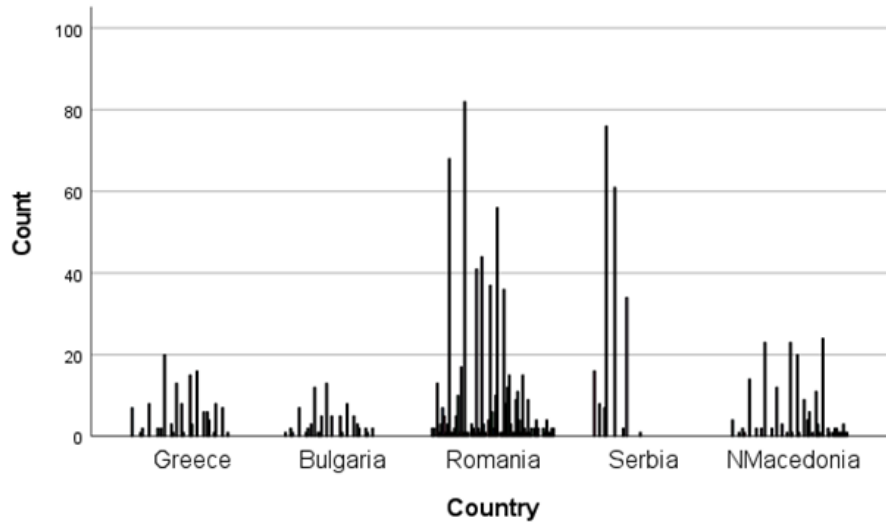
Graphic 60. Minutes of screen time per country during weekends

4.3. NUTRITION STATUS

Physical activity and quality of life are closely related with nutrition and eating habits. Therefore, the study we conducted included seven questions aimed to identify eating habits of involved participants, including type of nutrition, frequency of meals, water consumption etc.

The first question from this part referred to self-reported opinion for eating habits, offering following category of answers – not healthy at all, not healthy, somewhat healthy, very healthy, extremely healthy. Following the results, majority of participants or 62% reported that their eating habits in middle or somewhat healthy, 19% identified their eating habits as not really healthy and 12 % very healthy. These results are presented at Graphic 61.
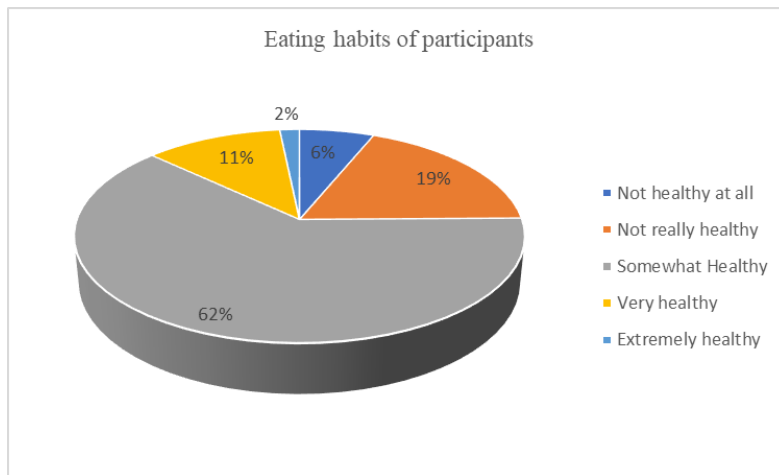
Graphic 61. Eating habits of participants.

Distribution is similar if analyses per country, meaning that in each country, the majority of participants identified their eating habits as somewhat healthy. Differences occurs in second choice, where for all countries except Romania, the second largest group of answers is for the category "very healthy" except for participants from Romania that choose "not really healthy". These results are presented in Table 52 and Figure 62.

Table 52. Eating habits of participants per country

		Eating habits					
		Not healthy at all	Not realy healthy	Somewhat healthy	Very healthy	Extremely healthy	Total
Country	Greece	7	14	83	29	2	135
	Bulgaria	3	8	49	28	6	94
	Romania	59	180	314	37	7	597
	Serbia	0	0	197	8	0	205
	North Macedonia	7	25	116	38	5	191
Total		76	227	759	140	20	1222

EATING HABITS

Legend: ■ Greece ■ Bulgaria ■ Romania ■ Serbia ■ North Macedonia

EATING HABITS

Category	Greece	Bulgaria	Romania	Serbia	North Macedonia
EXTREMELY HEALTHY	2	6	7	0	5
VERY HEALTHY	29	28	37	8	38
SOMEWHAT HEALTHY	83	49	314	197	116
NOT REALY HEALTHY	14	8	180	0	25
NOT HEALTHY AT ALL	7	3	59	0	7
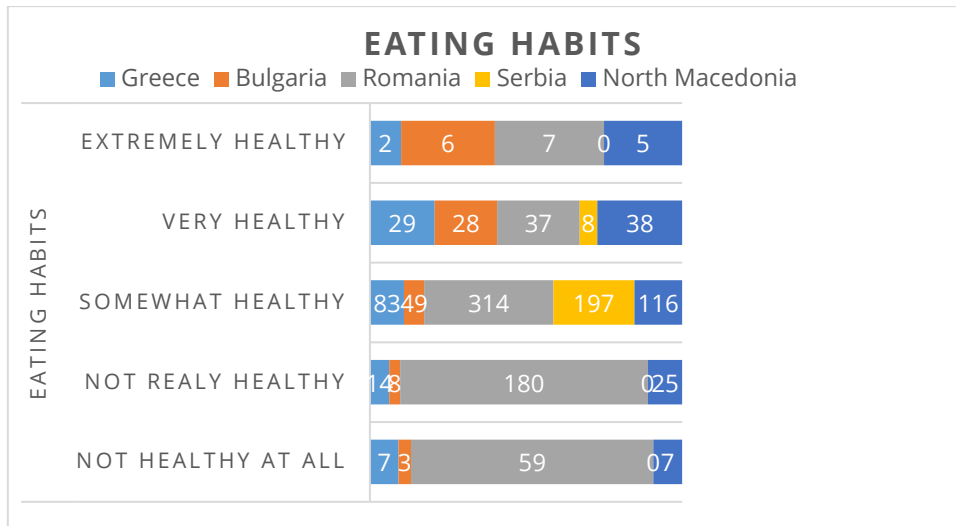
Graphic 62. Eating habits of participants per country.

At the question "How many meals do you have per day, the largest number of participants or 29% reported two meals per day, 23% reported three meals per day and 12% declared three or more meals (Figure 63). Analyzed per country, the largest number of participants from Greece, Bulgaria and North Macedonia reported to have three meals followed by two or three meals. For participants from Romania, highest number of participants have two meals, followed by second most chosen selection, which is three meals. Country specific distribution of meals per day is presented in Table 53 and Figure 64.

Number of meals per day

Legend: ■ One meal ■ Two meals ■ Three meals ■ One to two meals ■ Two to three meals ■ Three or more meals

- 5% — One meal
- 29% — Two meals
- 23% — Three meals
- 14% — One to two meals
- 17% — Two to three meals
- 12% — Three or more meals
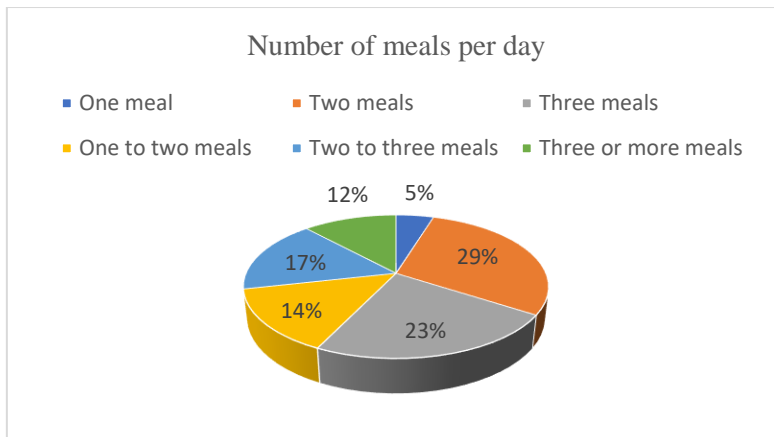
Figure 63. Number of meals per day

Table 53. Eating habits of participants per country

	Sample Size	Range	Max	Min	Averagee	St Error of mean	Std. Deviation	Variance	Invalid
Greece	135	5	6	1	4.24	0.141	1.635	2.675	0
Bulgaria	93	4	6	2	3.73	0.159	1.533	2.351	1
Romania	597	5	6	1	2.97	0.055	1.351	1.827	0
Serbia	205	4	6	2	3.84	0.084	1.203	1.446	0
North Macedonia	191	5	6	1	3.77	0.106	1.464	2.144	0
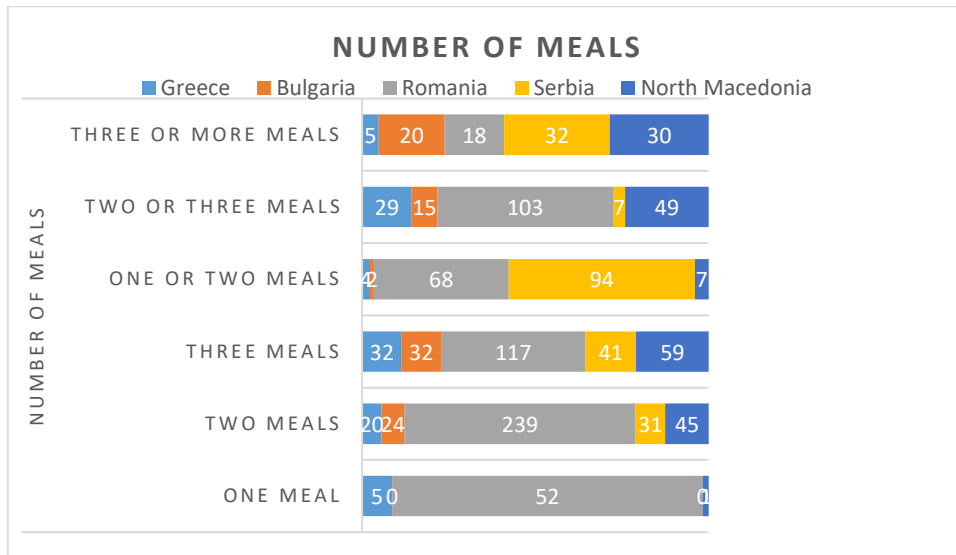
Figure 64. Number of meals per day per country

Water consumption is one of the aspects related to nutrition but also with overall health and wellbeing. Following the obtained results, the highest number of participants or 37% drinks 5 – 7 glasses per day, followed by 34% that drink 2- 4 classes per day; 8% of participants drink less than 2 glasses, while 9% drink 8 or more glasses per day (Figure 65). Analyzed per country, the largest number of participants from North Macedonia and Serbia drinks 2 – 4 glasses. The highest number of Romanian participants drink 5 – 7 glasses per day, while equal number of participants from Greece consume 2 – 4 glasses and 5 – 7 glasses. The largest number of participants from Bulgaria consume 8 or more glasses water per day (Table 54 and Figure 66).
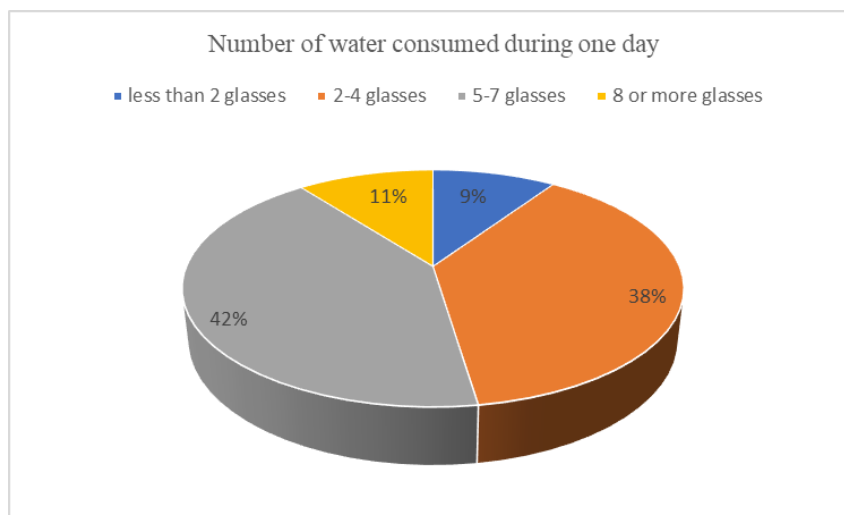
Figure 65. Consumption of water during the day

Table 54. Water consumption of participants per country

		Glass- water				
		Less than 2 glasses	Two mea2-4 glasses	5-7glasses	8 or more glasses	Total
Country	Greece	9	52	52	22	135
	Bulgaria	3	21	30	40	94
	Romania	41	178	237	0	456
	Serbia	31	95	75	4	205
	North Macedonia	19	66	59	47	191
Total		103	412	453	113	1081
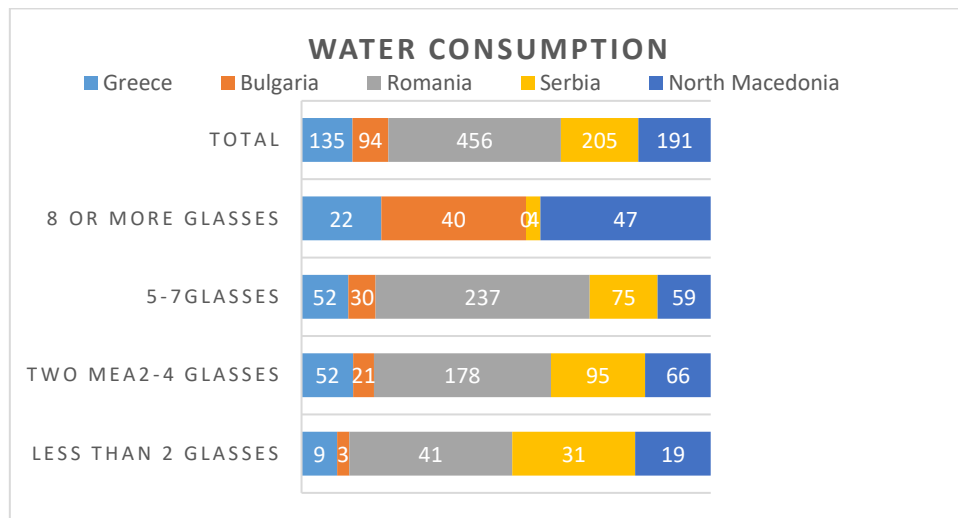
Figure 66. Consumption of water during the day in different countries

Analyzing the results for using junk food in nutrition, the highest number of participants or 32% consume it two times per week and 31% that are eating junk food once per week. 14% of participants has junk food on their menu for 3 days per week, while 12% reported that they don`t consume junk food at all (Table 55). Results per country that are presented at Table 56 and Figure 67.

Table 55. Consumption of junk food per week

Junk food	Frequency	Percent
0	141	11.5
1	374	306
2	387	31,7
3	174	14.2
4	51	4.2
5	43	3.5
6	5	0.4
7	10	0.8
12	1	0.1
14	6	0.5
24	4	0.3
34	1	0.1
Total	1197	98

Table 56. Average consumption of junk food per week per country

	Sample Size	Range	Max	Min	Average	St Error of mean	Std. Deviation	Variance	Invalid
Total	1197	34	34	0	2.02	0.065	2.232	4.980	25
Greece	134	7	7	0	1.72	0.101	1.172	1.374	1
Bulgaria	72	7	7	0	2.39	0.187	1.588	2,523	22
Romania	597	34	34	0	2.06	0.116	2.830	8.010	0
Serbia	205	3	3	0	1.48	0.054	0.777	0.604	0
North Macedonia	189	7	7	0	2.53	0.126	1.737	3.016	2
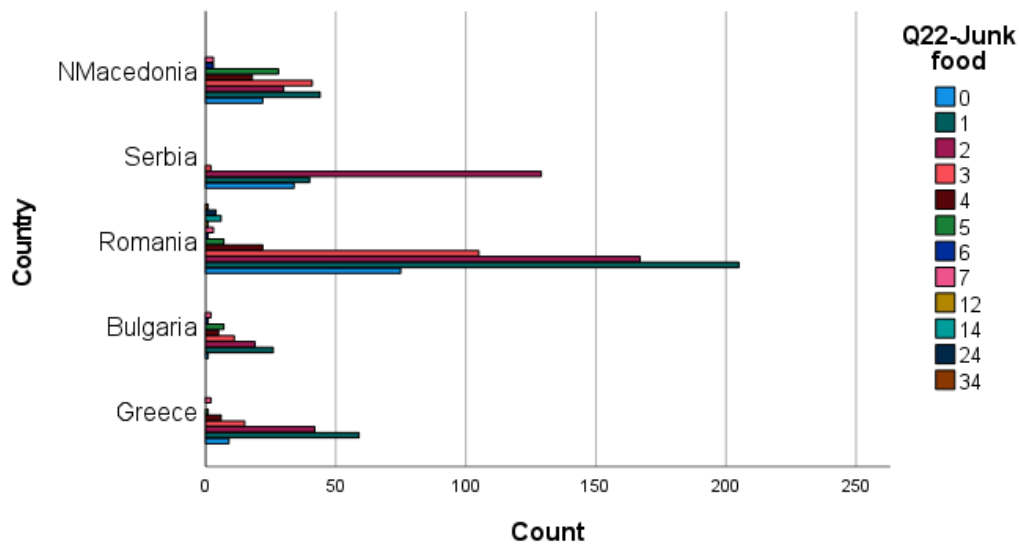
Figure 67. Consumption of junk food per country

4.4. WELL-BEING QUESTIONNAIRE

Wellbeing of the participants including their emotions, self – perception and feelings were identified using Warwick – Edinburg Mental Well – being Scale (WEMWBS). aimed to identify was applied. It`s a self- reported Likert scale where participants reflected their feelings at 14 different statements related to overall well – being, choosing from following categories: none of the time, rarely, some of the time, often, all of the time.

Analysing the results from all participants, in all 14 statements the highest percent of participants reported "often", except for the statement "I am interested in new things", where majority of participants, or 40% reported that they are interested in new things all of the time. Majority of participants reported to feel often optimistic (42%), useful (47%), interested in other people (43%), have a good feeling about themselves (33%), feel confident (39%), loved (39%) and cheerful (43%), followed by second largest group of choices "all of the time" for all the listed statements. These answers indicate on positive feeling about themselves and positive wellbeing. For the statement, "I have energy to spare", 35% reported often and 29% reported some of the time; 39% of participants often are relaxed, while 15% rarely feel this way meaning that participants deal with different level of energy and time to recharge it which can be a result of different reasons and happenings in life. Similar results are obtained for statements "I have been dealing with problems well" and "I have been thinking clear" where 45% and 48% accordingly feel this way often and 25% and 24% accordingly rarely feel like this. Differences between participants are noted for their feeling about them self and feeling close to other people. From all participants, 33% declare that often feel good about themselves, 30% rarely feel good about themselves and 22% feel good all the time. On the side of feeling close to other people, 40% declare that they feel this way often, 27% rarely and 22% feel close to other people all the time (Table 57). Results per item per country are presented at Figures 67 to 80.

Table 57. Results for self – reported well - being.

	none of the time	rarely	Some of the time	Often	All of the time	Total
Optimistic						
Greece	5	22	40	54	14	135
Bulgaria	1	5	20	39	29	94
Romania	15	34	164	225	159	597
Serbia	0	0	31	143	31	205
North Macedonia	4	13	50	56	68	191
Total	25	74	305	517	301	1222
Useful						
Greece	4	20	33	52	26	135
Bulgaria	1	2	28	45	18	94
Romania	11	53	180	215	138	597
Serbia	0	0	0	169	36	205
North Macedonia	1	10	38	96	46	191
Total	17	85	279	577	264	1222
Relaxed						
Greece	25	42	33	25	10	135
Bulgaria	1	21	32	29	11	94
Romania	26	105	228	148	90	597
Serbia	0	0	9	196	0	205
North Macedonia	5	19	71	76	20	191
Total	57	187	373	474	131	1222
Interested						
Greece	2	4	12	59	58	135
135Bulgaria	0	3	17	41	33	94

Romania	8	20	107	186	276	597
Serbia	0	0	0	177	28	205
North Macedonia	2	19	68	64	38	191
Total	12	46	204	527	433	1222

Energy

Greece	8	14	43	45	25	135
Bulgaria	1	7	19	39	28	94
Romania	59	156	210	123	49	597
Serbia	0	2	0	170	33	205
North Macedonia	4	29	84	48	26	191
Total	72	208	356	425	161	1222

Problems

Greece	5	24	55	41	10	135
Bulgaria	2	3	19	40	30	94
Romania	7	45	171	245	129	597
Serbia	30	32	5	138	0	205
North Macedonia	3	12	56	85	34	191
Total	47	116	305	550	203	1222

Thinking

Greece	10	16	45	50	14	135
Bulgaria	2	4	25	36	27	94
Romania	16	56	176	221	128	597
Serbia	0	0	0	205	0	205
North Macedonia	3	12	44	68	64	191
Total	31	88	290	580	233	1222

Goodfeeling

Greece	11	16	48	45	15	135
Bulgaria	4	6	22	35	27	94
Romania	23	59	184	184	147	597
Serbia	0	0	79	78	48	205
North Macedonia	1	9	38	63	80	191
Total	39	90	371	405	317	1222

Feeling close

Greece	6	18	40	57	14	135
Bulgaria	0	4	19	46	25	94
Romania	20	75	192	169	141	597
Serbia	0	0	28	155	22	205
North Macedonia	4	11	45	61	70	191
Total	30	108	324	488	272	1222

Confident

Greece	11	28	36	48	12	135
Bulgaria	1	8	22	40	23	94
Romania	16	54	168	200	159	597
Serbia	0	0	29	136	40	205
North Macedonia	2	10	45	53	81	191
Total	30	100	300	477	315	1222

Mind

Greece	1	9	39	47	39	135
Bulgaria	1	2	19	37	35	94
Romania	16	31	148	201	201	597
Serbia	0	0	80	77	48	205
North Macedonia	1	7	32	55	96	191
Total	19	49	318	417	419	1222

Feeling love

Greece	4	13	26	53	39	135
Bulgaria	1	5	19	32	37	94
Romania	26	51	109	163	248	597
Serbia	0	0	1	181	23	205
North Macedonia	0	15	21	52	103	191
Total	31	84	176	481	450	1222
Interested in new						
Greece	0	10	27	52	46	135
Bulgaria	0	1	7	24	62	94
Romania	13	28	122	205	229	597
Serbia	0	0	34	109	62	205
North Macedonia	3	13	38	45	92	191
Total	16	52	228	435	491	1222
Cheerful						
Greece	5	24	42	47	17	135
Bulgaria	1	3	18	43	29	94
Romania	15	49	175	193	165	597
Serbia	0	0	1	179	25	205
North Macedonia	1	5	36	57	92	191
Total	22	81	272	519	328	1222
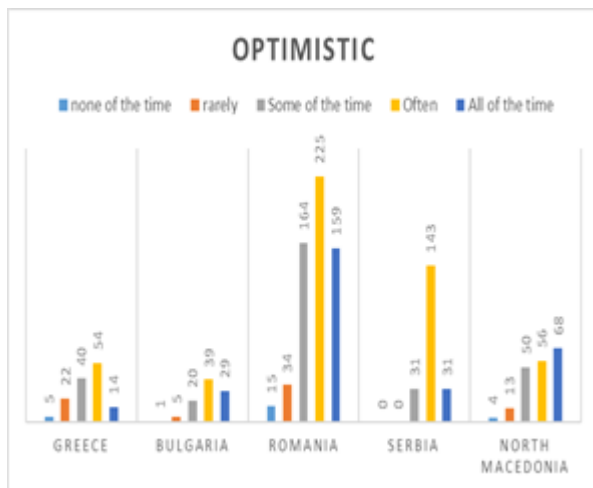
Figure 67. Answers for Optimistic per country
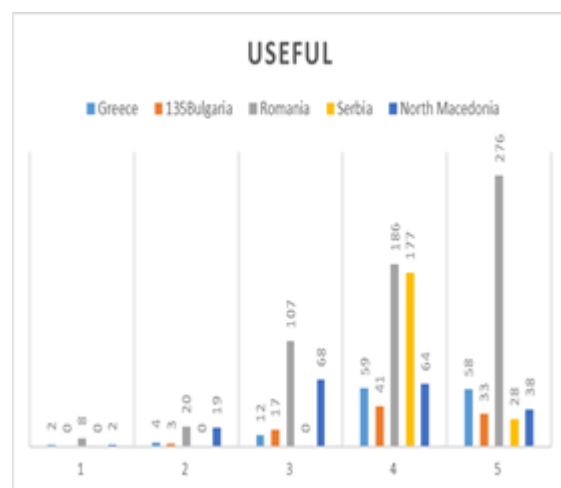
Figure 68. Answers for Useful per country
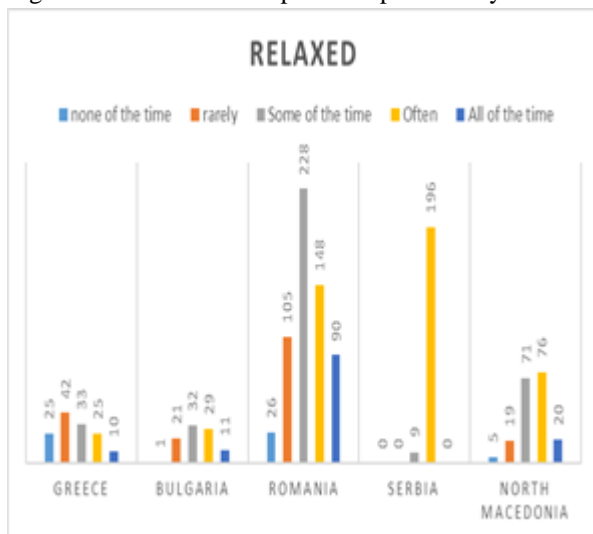
Figure 69. Answers for Relaxed per country
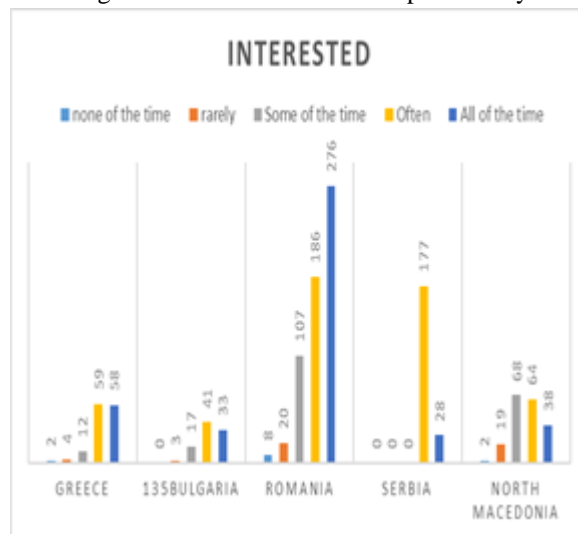
Figure 70. Answers for Interested per country
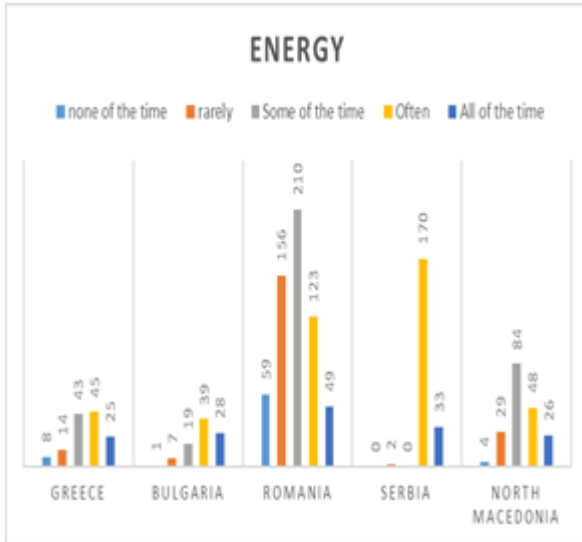
Figure 71. Answers for Energy per country
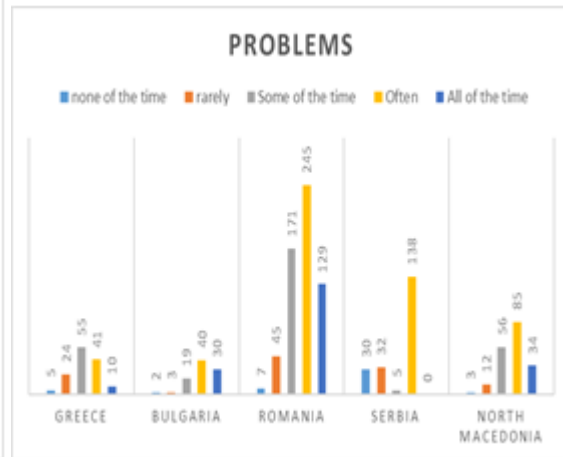
Figure 72. Answers for Problems per country

Figure 73. Answers for Thinking per country

Figure 74. Answers for Good feeling per country

Figure 75. Answers for feeling close per country

Figure 76. Answers for Confident per country

Figure 77. Answers for Make up own mind per country

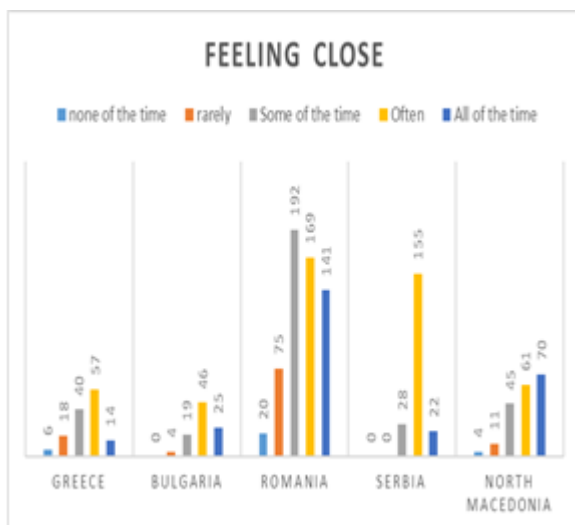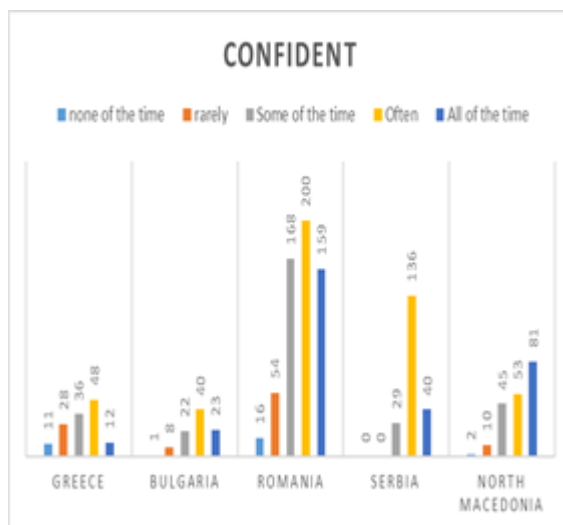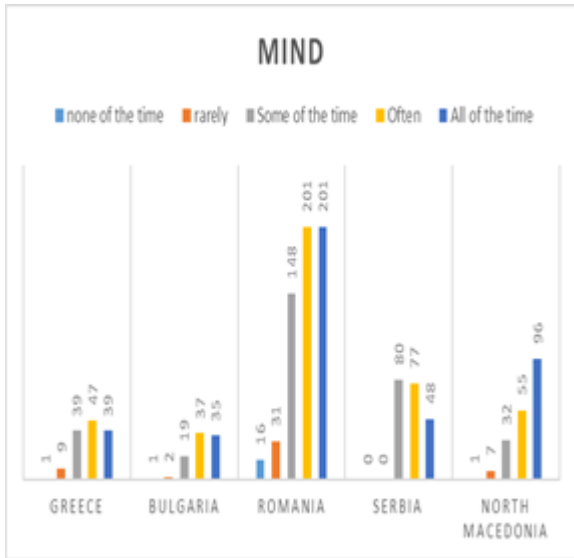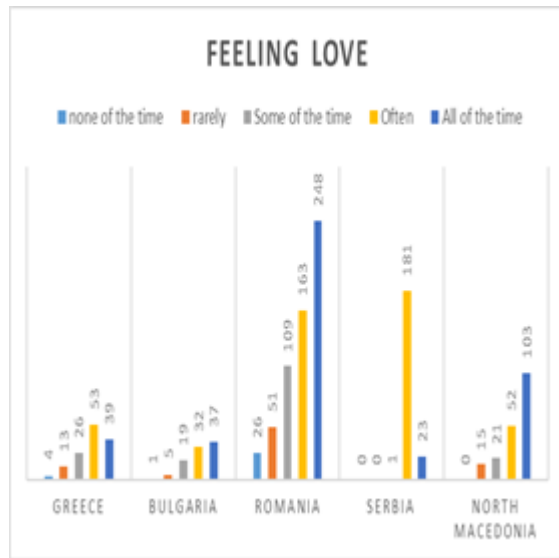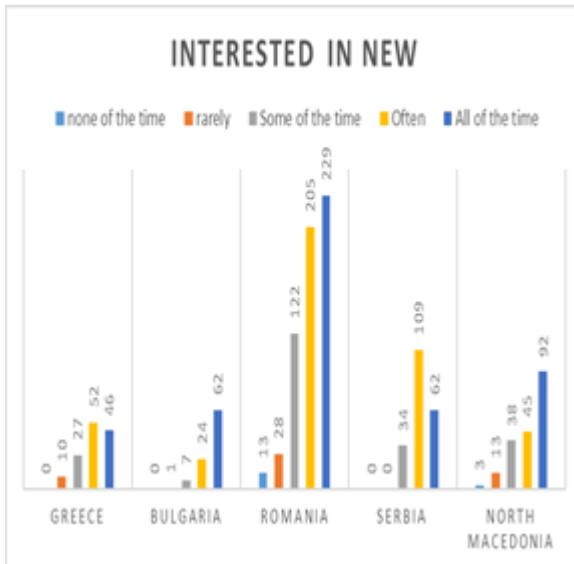Figure 78. Answers for Feeling love per country

Figure 79. Answers for Interested in new things per country
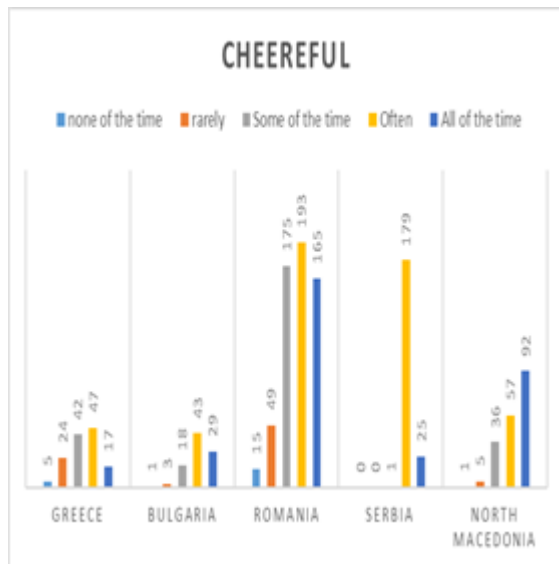
Figure 80. Answers for Cheerful per country

5.0. CONCLUSION

Presented REPORT gives insides of data analyses and results obtained from research study conducted in the frames of FIT BALKANS project. The aim of the research study was to identify the initial state of participants related to their level of physical activity and wellbeing, eating habits, facilities of the neighbourhood for active transport and physical activity, personal status etc. The study was conducted in period May – September 2023 in all five project countries, following same research protocol. The study include 1220 women at the age between 18 and 30 years old, from five different cities in Greece (Athens), Bulgaria (Plovdiv), Romania (Bucharest), Serbia (Nis) and North Macedonia (Sthip). The structure of participants was following: 135 participants (11%) from Greece, 92 (7%), from Bulgaria, 597 (49%) Romania, 205 (17%), Serbia and 191 (16%) from North Macedonia. Romania has the youngest sample with average age of 20.3 while Serbia has the oldest sample with an average age of 26.8. The youngest participant in the survey is 17 years old from Greece while the oldest is 38 years old and is Bulgarian. In terms of occupation, 58% were students and 39% were employed. In terms of health status, participants identified themselves as fair health (55%), in good health (30%) and in very good health (14%).

One of the aspects that were analysed in the study was the habits for transportation and possibilities of the neighbourhood. Participants from all countries reported high accessibility to cars, which increase with age. Highest accessibility to bicycle is reported for participants in Bulgaria and for motorcycles for participants from North Macedonia. Considering that transportation modes depend on infrastructure, the report also presented the opportunities of the cities and options for active transport. Information's are shared for Athens, Budapest and Stip and are missing for Plovdiv and Nis.

The report also presents information for available walking and cycling network in cities included in the project. In the majority of the countries, the respondents agree on the existence of shortcuts for walking with the highest number of positive answers to be reported in Bulgaria with a share of 81.05% agreeing with the statement. In contrast, 60% of Serbians believe that there is no enough shortcuts for walking. The existence of alternative walking paths is also different. Serbian respondents believe that they have a limited number of alternative paths, while the majority of North Macedonian respondents believes that they have a sufficient number of alternative paths. While for walking the results are mixed, the Balkans cities, there is an agreement on the absence of alternative paths for cycling in all countries. Overall, 70% of the respondents believe that there are not many different cycling alternatives in their neighbourhood. In terms of available paths for walking and cycling, 71% of the respondents from all participating countries find their neighbourhoods pleasant for walking while opinions for cycling are divided. Most positive opinions are noted for Bulgaria and lowest for Greece. Closely related to this is the urban greenery as one aspect that makes walking and cycling pleasant. Upon this question, the average, the respondents believe that there are green areas and decorative trees along the roads of the neighbourhood. Differences are obtained related to available pedestrian zoned and trails in neighbourhood which is expected and understandable. Safety aspects were also investigated. The results are mixed in the majority of the participating countries with almost equal share of agreement and disagreement. The only exceptions are Serbia and Bulgaria, where the respondents feel more insecure living their bicycles locked in their neighbourhood. Respondents agree that traffic does not affects their safety while walking but affects their safety during cycling. In all countries, respondents are extremely confident that it is also safe to move through their cities both during the day and during the night.

When it comes to commuting trips, most used modes of transport for non – commuting trips are walking and use of car, while for commuting trips the public transport and cars are most dominant. Yet, differences occurs depending from the cities and the available transportation moods in public transport.

Another aspect that we were interested was physical activity level of the participants. It was determined using the short version of IPAQ questioner. The results suggest that participants are engaged in vigorous physical activity 2 days per week and average 58 minutes during active days with large difference between countries and selected options. Analysed per countries, in average, most time in vigorous PA during active days spends participants from Serbia, followed by participants from North Macedonia, Bulgaria, Romania and Greece as less active. Following the recommendations from WHO, the participants in our study, does not meet the required criteria.

Two days per week and 56 minutes during active days in average, participants in our study spends in moderate physical activity including activities such as carrying light loads, bicycling at a regular pace, doubles in tennis and walking. Following the minutes spend in moderate activity, the mean value for minutes spend in Moderate PA is as follows: 33 minutes per day in Greece, 52 minutes in Bulgaria, 33 in Romania, 76 minutes in Serbia and 124 minutes in North Macedonia. Walking is one of the easiest and most frequent forms of physical activity across all generation and this is confirmed with the results obtained in our study. Namely, the average number of days that participants walk at least 10 minutes in time is 6 days in week and in average 71 minute per day during active days.

Physical activity level is negatively related with screen time and sitting time. In this regard, it was identified that participants in our study in average spend 209 minutes per day in sitting or more than 3 hours per day. In terms of screen time, an average time of 350 minutes is noted for our participants. The rang of reported minutes for screen time during weekdays varies from several minutes up to more than 10 hours. During weekends, the average time spent in front of the screen is 245 minutes or 4 hours. Obtained results suggest that time spend in front of the screen is much longer than time spent in physical activity, and this has negative effect on overall health and well – being. Therefore, in 2020 WHO came up with recommendation and action plan for reducing screen time and sedentary behaviour and promote PA and movement (WHO, 2020).

Nutrition habits are important aspect of health. Therefore, the questions for nutrition habits were also included in our research. The majority of participants identified their nutrition habits as healthy or very health, they have two or three meals per day and consume 5 – 7 glasses of water per day or 8 and more glasses water per day. Junk food is consumed once or twice per week by 32% and 31% of the participants accordingly. These results suggest on generally good nutrition habits and awareness of importance of healthy eating.

Last part from the study was the well – being questioner aimed to identify participants self-perception of their emotions and feelings. Majority of participants reported to feel often optimistic (42%), useful (47%), interested in other people (43%), have a good feeling about themselves (33%), feel confident (39%), loved (39%) and cheerful (43%), followed by second largest group of choices "all of the time" for all the listed statements. Most of participants deal with different level of energy and time to recharge it which can be a result of different reasons and happenings in life. Differences between participants are noted for their feeling about them self and feeling close to other people. From all participants, 33% declare that often feel good about themselves, 30% rarely feel good about themselves and 22% feel good all the time.

Presented results give an overview of the general state in different aspects of the participants life referring to their health, well-being and physical activity level. It helps us to identify the weak points in all countries and aspects that needs to be improved. This is the starting point for the further actions in the project as a baseline to identify where the change is most needed.

Detailed analyses and comparison between different aspects included in the research and between countries should be done in terms to identify the relations between different aspects that identify quality and healthy life.

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Paluch, A.E., Bajpai, S., Bassett, D.R., Carnethon, M.R., Ekelund, U. et al. (2022). Daily steps and all-cause mortality: a meta-analysis of 15 international cohorts. *The Lancet Public Health,7(3): e219* DOI: 10.1016/S2468-2667(21)00302-9

WHO (2018). Guidelines on physical activity and sedentary behavior.

APPENDIX

Table 1: Minutes spent in vigorous physical activity.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	267	21.8	21.9	21.9
	1	4	.3	.3	22.2
	2	7	.6	.6	22.8
	3	4	.3	.3	23.1
	4	4	.3	.3	23.4
	5	9	.7	.7	24.2
	6	4	.3	.3	24.5
	7	2	.2	.2	24.7
	10	25	2.0	2.0	26.7
	15	21	1.7	1.7	28.4
	17	2	.2	.2	28.6
	20	28	2.3	2.3	30.9
	25	4	.3	.3	31.2
	27	1	.1	.1	31.3
	30	147	12.0	12.0	43.3
	35	1	.1	.1	43.4
	40	19	1.6	1.6	45.0
	45	13	1.1	1.1	46.0
	50	8	.7	.7	46.7
	55	3	.2	.2	46.9
	60	312	25.5	25.6	72.5
	70	5	.4	.4	72.9
	75	4	.3	.3	73.2
	80	5	.4	.4	73.6
	85	1	.1	.1	73.7
	90	34	2.8	2.8	76.5
	100	16	1.3	1.3	77.8
	120	203	16.6	16.6	94.4
	129	1	.1	.1	94.5
	130	2	.2	.2	94.7
	150	1	.1	.1	94.8
	160	8	.7	.7	95.4
	180	30	2.5	2.5	97.9
	200	1	.1	.1	98.0
	240	12	1.0	1.0	98.9
	250	1	.1	.1	99.0
	280	1	.1	.1	99.1
	300	7	.6	.6	99.7
	360	4	.3	.3	100.0
	Total	1221	99.9	100.0	
Missing	System	1	.1		
Total		1222	100.0		

Table 2. Minutes spend in moderate physical activity.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	261	21.4	21.4	21.4
	1	11	.9	.9	22.3
	2	9	.7	.7	23.0
	3	15	1.2	1.2	24.3
	4	6	.5	.5	24.8
	5	11	.9	.9	25.7
	6	4	.3	.3	26.0
	7	3	.2	.2	26.2
	10	29	2.4	2.4	28.6
	15	34	2.8	2.8	31.4
	17	1	.1	.1	31.5
	20	53	4.3	4.3	35.8
	25	7	.6	.6	36.4
	29	2	.2	.2	36.6
	30	176	14.4	14.4	51.0
	34	1	.1	.1	51.1
	40	94	7.7	7.7	58.8
	45	30	2.5	2.5	61.2
	50	9	.7	.7	62.0
	56	1	.1	.1	62.0
	60	239	19.6	19.6	81.6
	69	1	.1	.1	81.7
	70	6	.5	.5	82.2
	80	8	.7	.7	82.9
	85	1	.1	.1	83.0
	90	10	.8	.8	83.8
	100	18	1.5	1.5	85.2
	110	1	.1	.1	85.3
	120	81	6.6	6.6	92.0
	130	1	.1	.1	92.0
	150	3	.2	.2	92.3
	160	2	.2	.2	92.5
	180	26	2.1	2.1	94.6
	200	4	.3	.3	94.9
	210	2	.2	.2	95.1
	240	13	1.1	1.1	96.1
	245	1	.1	.1	96.2
	250	1	.1	.1	96.3
	300	10	.8	.8	97.1
	350	1	.1	.1	97.2
	360	23	1.9	1.9	99.1
	420	4	.3	.3	99.4
	480	2	.2	.2	99.6
	490	1	.1	.1	99.7
	500	1	.1	.1	99.8
	540	1	.1	.1	99.8
	600	2	.2	.2	100.0
	Total	1220	99.8	100.0	
Missing	System	2	.2		
Total		1222	100.0		

Table 3. Minutes spent in walking.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	1.4	1.4	1.4
	1	1	.1	.1	1.5
	2	1	.1	.1	1.6
	5	19	1.6	1.6	3.1
	6	3	.2	.2	3.4
	7	9	.7	.7	4.1
	10	26	2.1	2.2	6.3
	12	1	.1	.1	6.4
	13	1	.1	.1	6.5
	15	73	6.0	6.0	12.5
	17	2	.2	.2	12.7
	20	63	5.2	5.2	17.9
	21	1	.1	.1	18.0
	22	1	.1	.1	18.0
	25	8	.7	.7	18.7
	30	241	19.7	20.0	38.7
	35	40	3.3	3.3	42.0
	37	1	.1	.1	42.1
	40	68	5.6	5.6	47.7
	44	1	.1	.1	47.8
	45	28	2.3	2.3	50.1
	50	50	4.1	4.1	54.2
	55	3	.2	.2	54.5
	60	187	15.3	15.5	70.0
	65	20	1.6	1.7	71.6
	69	1	.1	.1	71.7
	70	8	.7	.7	72.4
	75	1	.1	.1	72.4
	80	8	.7	.7	73.1
	89	1	.1	.1	73.2
	90	38	3.1	3.1	76.3
	100	26	2.1	2.2	78.5
	110	3	.2	.2	78.7
	120	101	8.3	8.4	87.1
	140	8	.7	.7	87.7
	150	8	.7	.7	88.4
	160	2	.2	.2	88.6
	170	1	.1	.1	88.7
	180	50	4.1	4.1	92.8
	200	13	1.1	1.1	93.9
	210	15	1.2	1.2	95.1
	240	18	1.5	1.5	96.6
	250	5	.4	.4	97.0
	270	1	.1	.1	97.1
	280	2	.2	.2	97.3
	300	23	1.9	1.9	99.2
	320	2	.2	.2	99.3
	330	1	.1	.1	99.4
	360	2	.2	.2	99.6
	370	1	.1	.1	99.7
	420	1	.1	.1	99.8
	480	2	.2	.2	99.9
	600	1	.1	.1	100.0
	Total	1208	98.9	100.0	
Missing	System	14	1.1		
Total		1222	100.0		

Table 4. Minutes spend in sitting.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	.8	.8	.8
	2	2	.2	.2	1.0
	4	1	.1	.1	1.1
	10	33	2.7	2.7	3.8
	13	1	.1	.1	3.9
	15	6	.5	.5	4.4
	20	26	2.1	2.1	6.5
	23	1	.1	.1	6.6
	25	2	.2	.2	6.8
	30	77	6.3	6.4	13.1
	34	1	.1	.1	13.2
	35	2	.2	.2	13.4
	40	26	2.1	2.1	15.5
	45	5	.4	.4	15.9
	50	9	.7	.7	16.7
	55	1	.1	.1	16.7
	60	107	8.8	8.8	25.6
	68	1	.1	.1	25.7
	70	5	.4	.4	26.1
	80	7	.6	.6	26.7
	90	19	1.6	1.6	28.2
	95	1	.1	.1	28.3
	100	39	3.2	3.2	31.5
	120	228	18.7	18.8	50.3
	129	1	.1	.1	50.4
	130	58	4.7	4.8	55.2
	140	3	.2	.2	55.4
	142	1	.1	.1	55.5
	150	5	.4	.4	55.9
	160	1	.1	.1	56.0
	171	2	.2	.2	56.2
	180	50	4.1	4.1	60.3
	200	21	1.7	1.7	62.0
	210	5	.4	.4	62.5
	240	71	5.8	5.9	68.3
	250	2	.2	.2	68.5
	257	1	.1	.1	68.6
	260	1	.1	.1	68.6
	270	2	.2	.2	68.8
	280	1	.1	.1	68.9
	300	70	5.7	5.8	74.7
	342	2	.2	.2	74.8
	350	3	.2	.2	75.1
	360	116	9.5	9.6	84.7
	400	17	1.4	1.4	86.1
	420	25	2.0	2.1	88.1
	430	1	.1	.1	88.2
	440	1	.1	.1	88.3
	450	2	.2	.2	88.4
	480	47	3.8	3.9	92.3
	500	22	1.8	1.8	94.1
	540	5	.4	.4	94.6
	600	41	3.4	3.4	97.9
	660	1	.1	.1	98.0
	700	6	.5	.5	98.5
	720	1	.1	.1	98.6
	800	1	.1	.1	98.7
	840	13	1.1	1.1	99.8
	900	3	.2	.2	100.0
	Total	1212	99.2	100.0	

		Frequency	Percent		
Missing	Syst em	10	.8		
Total		1222	100.0		

Table 5. Minutes spend in screen time during the weekdays.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	.7	.7	.7
	6	1	.1	.1	.8
	7	2	.2	.2	1.0
	10	15	1.2	1.3	2.3
	12	1	.1	.1	2.4
	20	7	.6	.6	3.0
	23	1	.1	.1	3.1
	24	1	.1	.1	3.2
	30	12	1.0	1.1	4.2
	40	2	.2	.2	4.4
	45	4	.3	.4	4.7
	50	2	.2	.2	4.9
	55	1	.1	.1	5.0
	60	65	5.3	5.7	10.7
	70	1	.1	.1	10.8
	72	1	.1	.1	10.9
	75	1	.1	.1	11.0
	80	7	.6	.6	11.6
	90	12	1.0	1.1	12.6
	99	1	.1	.1	12.7
	100	11	.9	1.0	13.7
	120	167	13.7	14.6	28.3
	130	2	.2	.2	28.5
	135	1	.1	.1	28.6
	140	1	.1	.1	28.7
	150	6	.5	.5	29.2
	160	9	.7	.8	30.0
	170	1	.1	.1	30.1
	180	160	13.1	14.0	44.1
	190	1	.1	.1	44.2
	200	31	2.5	2.7	46.9
	210	1	.1	.1	47.0
	220	1	.1	.1	47.1
	232	1	.1	.1	47.2
	240	74	6.1	6.5	53.6
	250	1	.1	.1	53.7
	280	3	.2	.3	54.0
	300	98	8.0	8.6	62.6
	320	3	.2	.3	62.8
	330	1	.1	.1	62.9
	350	2	.2	.2	63.1
	360	103	8.4	9.0	72.1
	400	24	2.0	2.1	74.2
	420	28	2.3	2.5	76.7
	440	1	.1	.1	76.8
	450	6	.5	.5	77.3
	480	55	4.5	4.8	82.1
	500	38	3.1	3.3	85.5
	520	1	.1	.1	85.5
	540	8	.7	.7	86.2
	550	1	.1	.1	86.3
	560	4	.3	.4	86.7
	600	66	5.4	5.8	92.5
	640	1	.1	.1	92.6

650	1	.1	.1	92.6
660	4	.3	.4	93.0
692	1	.1	.1	93.1
700	4	.3	.4	93.4
720	7	.6	.6	94.0
740	1	.1	.1	94.1
750	1	.1	.1	94.2
780	1	.1	.1	94.3
800	1	.1	.1	94.4
840	4	.3	.4	94.7
880	1	.1	.1	94.8
900	5	.4	.4	95.3
1000	6	.5	.5	95.8
1100	1	.1	.1	95.9
1120	2	.2	.2	96.1
1200	12	1.0	1.1	97.1
1260	1	.1	.1	97.2
1300	1	.1	.1	97.3
1400	1	.1	.1	97.4
1500	1	.1	.1	97.5
1800	2	.2	.2	97.6
1920	1	.1	.1	97.7
2000	7	.6	.6	98.3
2100	6	.5	.5	98.9
2500	3	.2	.3	99.1
2520	1	.1	.1	99.2
3000	3	.2	.3	99.5
3250	1	.1	.1	99.6
3360	1	.1	.1	99.6
3500	1	.1	.1	99.7
3600	1	.1	.1	99.8
4500	1	.1	.1	99.9
5000	1	.1	.1	100.0
Total	1141	93.4	100.0	
Missing	System	81	6.6	
Total	1222	100.0		

Table 6. Screen time in minutes during weekends.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	1.1	1.1	1.1
	6	2	.2	.2	1.2
	7	1	.1	.1	1.3
	10	13	1.1	1.1	2.4
	15	2	.2	.2	2.6
	20	6	.5	.5	3.1
	30	12	1.0	1.0	4.1
	40	22	1.8	1.8	5.9
	45	1	.1	.1	6.0
	50	3	.2	.2	6.2
	60	105	8.6	8.7	15.0
	67	1	.1	.1	15.0
	68	1	.1	.1	15.1
	70	9	.7	.7	15.9
	80	84	6.9	7.0	22.8
	90	14	1.1	1.2	24.0
	99	1	.1	.1	24.1
	100	24	2.0	2.0	26.1
	110	1	.1	.1	26.2

120	198	16.2	16.4	42.6
129	1	.1	.1	42.7
130	2	.2	.2	42.9
135	1	.1	.1	42.9
150	13	1.1	1.1	44.0
160	5	.4	.4	44.4
170	1	.1	.1	44.5
180	113	9.2	9.4	53.9
189	2	.2	.2	54.1
195	1	.1	.1	54.2
200	60	4.9	5.0	59.1
210	4	.3	.3	59.5
222	1	.1	.1	59.6
229	1	.1	.1	59.6
230	4	.3	.3	60.0
240	81	6.6	6.7	66.7
250	11	.9	.9	67.6
260	2	.2	.2	67.8
280	10	.8	.8	68.6
300	100	8.2	8.3	76.9
320	1	.1	.1	77.0
330	1	.1	.1	77.1
350	1	.1	.1	77.2
360	56	4.6	4.7	81.8
380	8	.7	.7	82.5
400	25	2.0	2.1	84.6
420	27	2.2	2.2	86.8
430	3	.2	.2	87.0
450	2	.2	.2	87.2
460	2	.2	.2	87.4
480	30	2.5	2.5	89.9
500	15	1.2	1.2	91.1
540	5	.4	.4	91.5
560	1	.1	.1	91.6
600	48	3.9	4.0	95.6
660	2	.2	.2	95.8
700	1	.1	.1	95.8
720	12	1.0	1.0	96.8
800	2	.2	.2	97.0
840	2	.2	.2	97.2
880	1	.1	.1	97.3
900	4	.3	.3	97.6
960	6	.5	.5	98.1
1000	3	.2	.2	98.3
1080	1	.1	.1	98.4
1140	1	.1	.1	98.5
1200	5	.4	.4	98.9
1260	2	.2	.2	99.1
1300	5	.4	.4	99.5
1440	1	.1	.1	99.6
1500	1	.1	.1	99.7
1800	2	.2	.2	99.8
2200	2	.2	.2	100.0
Total	1204	98.5	100.0	
Missing	System	18	1.5	
Total		1222	100.0	

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