2012•2013
FACULTEIT BEDRIJFSECONOMISCHE WETENSCHAPPEN
master in de verkeerskunde: mobiliteitsmanagement
(Interfacultaire opleiding)

Masterproef

An analysis of disease-related personal, socio-demographic and trip-related characteristics influencing the reporting rate of data collection methods during a travel survey

Promotor :
Prof. dr. Davy JANSSENS

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Masterproef voorgedragen tot het bekomen van de graad van master in de verkeerskunde , afstudeerrichting mobiliteitsmanagement

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AN ANALYSIS OF DISEASE-RELATED PERSONAL, SOCIO-DEMOGRAPHIC AND TRIP-RELATED CHARACTERISTICS INFLUENCING THE REPORTING RATE OF DATA COLLECTION METHODS DURING A TRAVEL SURVEY

ABSTRACT

Recent research indicates that trips, made during a travel survey, are often underreported in the deployed data collection methods. The present study contributes to the field by determining whether disease-related physical, cognitive or psychological impairments, as well as socio-demographic and trip-related factors, contributed significantly to changes in reporting by persons with various disability severities. 108 persons with Multiple Sclerosis (MS) were classified into three subgroups determined by their ambulatory dysfunction: mild (n=51), moderate (n=27) and severe (n=30) MS. The respondents had to fill in a travel diary and carry a GPS logger during seven consecutive days. Clinical tests and questionnaires were applied to gain information about their disability characteristics, and to investigate their impact to the data-quality. The results of the study indicate that GPS devices were a good addition for the diary data especially for the underreported trips to home. The higher the physical impairments, the better the respondents filled in the diary and the worse they made use of the GPS logger. Only the reporting rate of the GPS by the moderate MS subgroup, had a significant correlation with the clinical tests. Socio-demographic characteristics, such as education and number of persons in the household, were the best predictors for the reporting rate of the diary, the trip goal predicted the reporting rate of the GPS the best. During a travel survey applied to persons with disabilities the use of both methods is recommended, as this combination delivers better data-quality than when only one method would have been used.

SAMENVATTING

Recent onderzoek toont aan dat verplaatsingen, gemaakt tijdens een verplaatsingsonderzoek, regelmatig ondergerapporteerd worden in de aangewende datacollectiemethoden. De huidige studie draagt bij tot het onderzoeksveld door te bepalen of fysieke, cognitieve of psychische aandoeningen ten gevolge van een beperking, dan wel socio-demografische en verplaatsingsgerelateerde factoren leiden tot significante verschillen in rapporteren tussen personen met uiteenlopende beperkingen. 108 personen met Multiple Sclerose (MS) werden op basis van hun fysieke status ingedeeld in drie subgroepen: mild (n=51), gemiddeld (n=27) en gevorderd (n=30) MS. De respondenten dienden gedurende zeven opeenvolgende dagen een verplaatsingsdagboekje in te vullen en een GPS-logger met hen mee te dragen. Tevens werden ook klinische testen en vragenlijsten afgelegd om informatie te verzamelen over de karakteristieken van de beperking en de impact hiervan op de specifieke en relatieve datakwaliteit. Verplaatsingen naar huis werden regelmatig vergeten in het verplaatsingsdagboekje, ze werden echter wel goed geregistreerd in de GPS-logger. De GPS was bijgevolg een goede aanvullende methode. Hoe groter de fysieke beperking van de respondent, hoe beter het verplaatsingsdagboekje ingevuld was en hoe slechter de GPS gebruikt werd. Opmerkelijk was dat de klinische testen alleen een significante correlatie hadden met het gebruik van de GPS door de gemiddelde MS subgroep. Socio-demografische karakteristieken, zoals opleidingsniveau en het aantal personen in het huishouden, voorspelden hoe goed het verplaatsingsdagboekje ingevuld werd. Het doel van de verplaatsing voorspelde dan weer hoe goed de respondent de verplaatsingsgegevens registreerde aan de hand van de GPS. Het gebruik van beide datacollectiemethoden tijdens een verplaatsingsonderzoek bij personen met een beperking is aanbevolen, omdat een combinatie een betere kwaliteit van de verplaatsingsgegevens aanbiedt, dan wanneer slechts één datacollectiemethode gebruikt wordt.

AN ANALYSIS OF DISEASE-RELATED PERSONAL, SOCIO-DEMOGRAPHIC AND TRIP-RELATED CHARACTERISTICS INFLUENCING THE REPORTING RATE OF DATA COLLECTION METHODS DURING A TRAVEL SURVEY

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Number of words: 10 300
Number of tables: 5

ABSTRACT

Recent research indicates that trips, made during a travel survey, are often underreported in the deployed data collection methods. The present study contributes to the field by determining whether disease-related physical, cognitive or psychological impairments, as well as socio-demographic and trip-related factors, contributed significantly to changes in reporting by persons with various disability severities. 108 persons with Multiple Sclerosis (MS) were classified into three subgroups determined by their ambulatory dysfunction: mild (n=51), moderate (n=27) and severe (n=30) MS. The respondents had to fill in a travel diary and carry a GPS logger during seven consecutive days. Clinical tests and questionnaires were applied to gain information about their disability characteristics, and to investigate their impact to the data-quality. The results of the study indicate that GPS devices were a good addition for the diary data especially for the underreported trips to home. The higher the physical impairments, the better the respondents filled in the diary and the worse they made use of the GPS logger. Only the reporting rate of the GPS by the moderate MS subgroup, had a significant correlation with the clinical tests. Socio-demographic characteristics, such as education and number of persons in the household, were the best predictors for the reporting rate of the diary, the trip goal predicted the reporting rate of the GPS the best. During a travel survey applied to persons with disabilities the use of both methods is recommended, as this combination delivers better data-quality than when only one method would have been used.

INTRODUCTION

There are various data collection methods to analyze the travel behaviour of people, all these methods with their own benefits and drawbacks.

The most common forms of data collection methods are travel diaries, which exist in a paper (PAPI) or a computer assistant version on the computer of the researcher or respondent or via internet (CADAC). The PAPI version has the advantage that it is very cheap although the papers cannot be reused. Another benefit of travel diaries is that several data is collected that other (automatic) collection methods cannot gather automatically like activity type or travel companions and detailed information concerning the transport mode such as the respondent was car driver or passenger. However, this method makes use of reported facts which makes it possible that there is missing or incorrect information and the quality of the data consequently decreases. Moreover, the data-analysis is very intensive and time consuming *[1]*. Also the lay-out, wording, user friendliness and type of questions can have some influence on the research questions *[2]*. Research shows that a combination of different data collection methods is the best way to reach different demographic groups so that there is no underrepresentation *[3]*. For this reason, GPS loggers are often combined with travel diaries *[4]*. They register the departure and destination, time, distance, route, speed and height of a trip. The data-quality is higher than travel diaries because the data is registered automatically. Also the respondent burden and the work intensity of the researcher decrease. Furthermore the GPS loggers make it possible to investigate travel information which cannot be asked directly because the answer can be subjective, such as "Which transport mode do you use for distances smaller than 10 kilometre?", were the respondent probably does not know by heart the distance of the trip *[4]*. However, the GPS also has some drawbacks like no registration when there is no GPS-signal, an empty battery, when the GPS was forgotten at home or was switched off for privacy reasons. The most important disadvantage is that there is no

information about the undertaken activity or transport mode, although these variables deliver useful information in the context of activity-based models *[3]*. Personal digital assistants (PDA) and mobile phones or smartphones can combine the previously data collection methods. The quality of the data increases and the information is directly electronically available *[5]*. PDA-systems are more expensive than GPS loggers *[6]* and have the same drawbacks as GPS-systems *[7]*. Mobile phones and smartphones have the advantage that they are mostly in possession of the respondents, so they are a cheap data collection method because the researchers do not have to buy additional measuring instruments. The mobile phone or smartphone can be equipped with software which makes it possible to indicate when there are some mistakes by filling in the diary, so the respondent can modify the data. Besides, the respondents are used to charge and carry their mobile phones and smartphones with them during a trip *[8]*. However, the accuracy of GPS-data collected by mobile phones or smartphones is lower than those of the conventional GPS loggers *[9]*. Other disadvantages of this method are that not everyone is in the possession of a smartphone and also the display can be really small and consequently be difficult to read *[9]*. A pedometer can measure the vertical acceleration, speed and the number of steps per day and hour of the respondent *[10]*. A combination with GPS-data gives a large potential for researchers to understand complex interactions between an individual and the environment *[11]*. Cheap pedometers provide bad and unreliable information, while medical pedometers provide an accuracy of 98% but they are very expensive. The data is objective, can be registered automatically and the pedometers do not have to be charged, which make them suitable for a travel survey for persons with disabilities *[12]*. Unfortunately, for a travel behaviour research this system is only useful in combination with other data collection methods because there is no information collected concerning departure and arrival or activity type.

There are some variables influencing the reporting rate of a data collection method. Bricka et al (2010) examined the differences in reporting between GPS-data and conventional travel diaries. The study showed that GPS loggers were more suitable for younger respondents (students or recently graduated), heavy travellers (workers who travel as part of their job, busy volunteers and others) and respondents who made a lot of non-motorized trips. Travel diaries were better suited for elderly and retirees respondents, as well as for respondents who made a lot of leisurely travel *[13]*. The study of Bakker & van Hal already indicated that persons with disabilities made more leisure and shopping trips than persons without disabilities *[14]*. A recent research from Jin et al (2012) studied the causes of misreporting between computer aided telephone interviews (CATI) and GPS-data. Variables like trip purpose, trip duration, size of the household, amount of vehicles, income, time of day and day of the week were playing an important role. Men were more likely to misreport than female, but female forgot more trips with an activity duration of less than 15 minutes. Mandatory trips (e.g. work/education/escorting) were better reported than non-mandatory trips (shopping/maintenance). Trips that were made alone, were almost similar for the two data collection methods. Public transport trips, rail and subway trips were consistent between the two methods, but bus trips showed large deviations, particularly for part-time workers. Trips made during mid-day and PM peak periods were more likely to be misreported than AM peak and night periods. Short duration trips (less than 15 minutes) were more likely to be underreported than longer duration trips (longer than 60 minutes). Households with five or more members overreported AM peak periods and underreported mid-day and PM peak periods. These households also showed more differences between the two data collection methods than smaller households. Households with three or more vehicles had the same results. At least households with low (less than $50K/€38K) and high (more than $200K/€153K) incomes were significantly misreporting their trips *[15]*.

Socio-demographic characteristics also affect the travel behaviour of the respondents. The gender of the respondent was a significant factor for differences in travel behaviour. According to a Flemish survey, men made more trips than women and made mainly trips by car especially as car driver. Women made more trips as car passenger, by foot or by bus and they made more trips concerning shopping and day care *[16]*. Both genders made a quarter of their trips by foot or by bike and two third of their trips by car with a majority as car driver *[16]*. Also demographic characteristics had an important influence on travel behaviour. Respondents aged 65 years or older made only half as much trips as persons between 18 and 64 years old *[17]*. Furthermore the family situation and income had some influence on the travel behaviour, especially factors like children, employment and retirement. Research shows that households without children but with students, unemployed or part-time working people made more use of non-motorised vehicles than other households. Families with children were more depending on the car than families without children. They were in the possession of bikes but used them mainly for recreational trips. Households with persons on retirement and high incomes made the least trips with non-motorised vehicles *[18]*. Moreover the educational level had a positive influence on the number of trips a person made. This could be explained by the fact that education is related with the age, employment, statute and income. The goal of most trips was shopping, work trips and trips for recreation *[16]*. Characteristics of the environment such as population

density, public transport facilities and diversity also influenced the modal split. The use of the car was higher in rural and suburban areas than the use of public transport, cycling or walking *[19]*.

A French research executed between 2007 and 2008 showed that persons with disabilities made less and shorter trips than persons without disabilities. Moreover, these persons made use of specific transport modes that persons without disabilities did not use. Thirty three percent of the persons with disabilities travelled by foot (or wheelchair) while these travel modes were only 19% by persons without disabilities. This high rate may be due to the fact that persons with disabilities made shorter trips close to home. Another reason was that other transport modes were inaccessible for the respondents whereby they were forced to make trips by foot or by use of their ambulatory devices *[20]*. Persons with disabilities also made less use of cars than persons without restraints, however persons with disabilities made more trips as car passenger than persons without disabilities. Health problems could be the reason why they did not have a driver licence anymore. The higher the disability degree, the higher was the chance that they did not drive a car by themselves *[20]*. Persons without disabilities used public transport almost 1,4 times more than persons with disabilities. The 'National Travel Survey' of France between 2007 and 2008 showed that 42% of the persons without disabilities made a trip for less than 100 kilometres with public transport, compared with 27% off persons with disabilities. The biggest problem for persons with disabilities by using public transport was the accessibility to get from and in the public transport vehicle *[20]*. In 2004 a travel survey was performed in the Netherlands where half of the respondents had some disabilities. Sixteen percent of the respondents with difficulties could only move with the aid of other people and 20% needed sometimes the aid of other people. More than 60% did not need an auxiliary, 17% used a walking frame, 10% a wheelchair, 7% crutches and 5% a walking stick. Almost 2,6% of the respondents had an adapted car. The research showed that persons with disabilities made less work trips than persons without disabilities, respectively 7 and 14 %, but that persons with disabilities made more leisure and shopping trips than persons without disabilities. In most cases this were substitutions for work and education trips. Persons with disabilities also made more trips in the context of their health problems like trips to the doctor, pharmacy and physiotherapist. Also the number of trips per day per person was smaller than for persons without impairments. During the research 48% of the persons with disabilities stayed at home, while this was only 28% in the group of persons without disabilities. Persons with disabilities made on average trips of 36 minutes, while healthy people made on average trips of 53 minutes *[14]*.

However, previous research indicated that the ambulatory dysfunction influenced the travel behaviour of the respondents during a travel survey *[21]*, there is not much research concerning the reporting rate (and associating data-quality) of data collection methods applied to persons with various disability severities. It is not clear which data collection methods are suitable for persons with disabilities and which they cannot or would not use because of disease-related problems. This study aimed to find out which data collection system, travel diaries or GPS loggers, was more convenient to use in a travel survey conducted to persons with disabilities. Therefore the differences between the data of travel diaries and the GPS-data were researched, to illustrate whether there are variations between the two data collection methods. The study contributes to the field by determining in detail whether disease-related psychological, cognitive or physical impairments, as well as socio-demographic and environmental factors, contributed significantly to changes in reporting by persons with various disability severities. The variations in reporting will be analyzed based on variables that seemed to be important according to the literature review, which are: research day, time, duration, activity type, distance, transport mode, travel companions, planned or spontaneous and single or chain trip.

METHODOLOGY

Participants

One hundred and eight persons, 41 men and 67 women, with Multiple Sclerosis (MS) completed a travel survey between Mai 2011 and July 2012 in the study area of Flanders (Belgium). MS is a chronicle and progressive inflammatory of the central nervous system, by which the effects are different for every patient. Most symptoms consist of walking difficulties, tiredness, coordination problems, cognitive changes, spasticity, sensory disorders and eye problems *[22]*. Multiple Sclerosis is one of the most common neurological diseases among young adults in Western countries *[21]*. The disease Multiple Sclerosis was chosen because of the wide range of age groups with various symptoms who differ from person to person. Besides persons with Multiple Sclerosis have a young age (average age in this study = 52) which results in an adapted travel behaviour and life quality due to MS *[21]*. The study was conducted in accordance with the ethical standards from the Declaration of Helsinki *[23]* and approved by the ethical committees of Hasselt University, Antwerp University Hospital (UZA) and National MS

Centre Melsbroek (NMSC). The respondents were recruited in the existing network of persons with disabilities of previous studies via researchers of the REVAL Rehabilitation Research Institute (PHL, UHasselt), by neurologists of UZA and NMSC, and during information sessions in fitness centres and local MS support groups. All the respondents gave written informed consent and participated voluntarily. They had to make a minimum of one trip each week, but were excluded if they were bedridden, or had a relapse or related corticosteroid treatment within one month before the study and/or additional non MS-related health problems restricting outdoor travel behaviour. Respondents were classified into three subgroups: mild, moderate and severe MS. This classification was based on the Disease Steps (DS) describing ambulatory dysfunction, determined by Hohol et al. *[24]*. The mild MS subgroup (n= 51) contained the respondents with DS ≤ 2 having no to mild symptoms or constraints and persons with moderate restrictions which influenced their gait pattern, but they did not require ambulation aids. The moderate MS subgroup (DS 3-5, n= 27) included respondents who used occasionally or continuously an unilateral support to walk 25 feet. The severe MS subgroup (DS ≥ 6, n=30) existed of respondents who made use of bilateral support or a manual or electric wheelchair/scooter. The amount of the three subgroups was respectively 51, 27 and 30 respondents. Table 1 gives an overview of the socio-demographic characteristics of the respondents by subgroup.

TABLE 1 Socio-demographic characteristics of the respondents by subgroup

Variable	**Mild MS (n=51)***	**Moderate MS (n=27)**	**Severe MS (n=30)**	**Total (n=108)**
Gender (m/f)	16/35	13/14	12/18	41/67
Age (22-34/35-44/45-59/60-82)	7/15/26/2	1/4/13/9	0/5/11/14	8/24/50/25
Education (primary/secondary/higher)	3/25/22	1/17/9	4/19/7	8/61/38
Work situation (not working/half-time/full-time/)	31/10/9	22/5/0	28/1/1	81/16/10
Income (< €1000/€1000-2500/€2500-5000/> €5000/unknown)	0/20/21/1/8	0/10/10/0/7	1/12/5/0/12	1/42/36/1/27
Number of members in household (alone/2-4/≥5)	5/37/8	3/0/24	10/18/2	18/55/34
Cars in household (0/1/2 or more)	4/24/22	2/22/3	7/16/7	13/62/32
Driving ability (no/feeling uncertain/yes)	7/4/39	5/4/18	18/2/10	30/10/67
Ambulatory device (none/unilateral/bilateral/manual wheelchair/electric wheelchair or scooter)	41/6/1/2/1	5/9/0/6/7	0/1/2/9/18	46/16/3/17/ 26

*(*The characteristics of one respondent with mild MS were unknown)*

Experimental design and outcome measures

There were two individual contact moments with the respondents. During the first contact moment clinical tests were taken to know physical, cognitive and psychosocial features of the respondents. They also needed to fill in some questions concerning their health condition and socio-demographic characteristics. As well the activity and travel measures were explained to the respondents. Afterwards the respondents had to full in a travel diary (PAPI) during seven consecutive days and at the same time they had to carry a GPS logger during every trip they made. There was a manual and permanent helpline available for the respondents. The second contact moment was used to return the completed travel diary and questionnaires and the GPS logger. To find differences in reporting rate between travel diaries and GPS loggers, it is important to know that a trip means an outdoor displacement between two locations with a clear activity motive that could be reached by the use of one or more travel modes *[21]*. The activity-related travel diary collected information concerning date and time, travel mode, activity type, travel companions, location and planning of the trips. The GPS logger (747A+ 66-Channel GPS Trip Recorder (TranSystem Inc., Hsinchu, Taiwan)) could determine the current location of the respondent by using signals from satellites and register this coordinates. The GPS also registered the travel speed which was used to determine the travel mode (for trips which were only recorded in the GPS). The information of the GPS logger was used to control the travel diary data and to calculate the distance of the trip. The outcome measures that were applied, were: research day, weekday, departure time trip and activity, activity and trip duration, distance, activity type, transport mode, travel companions, planned or spontaneous trips and single or chain trips. Further, there were also some clinical tests examined. Two tests investigated the physical possibilities of the respondents; the 25 Feet Walk Test (T25FW) and the 9 Hole Peg Test (9HPT). During the T25FW the respondents needed to walk 25 feet (with their usual assistive devices) as quickly as possible. The 9HPT investigated the mobility of the upper limbs

by replacing 9 small pins in a plastic bin *[25]*. Two cognitive tests were applied. The Trail Making Test (TMT) examined the visual attention and task switching of the respondents. They had to combine 25 numbers or letters as quickly as possible in ascending order *[26]*. The Paced Visual Serial Addition Test (PVSAT) was a measure of attention and information processing speed. During the test, the respondents were shown a number every three seconds, than they needed to calculated and say aloud the sum of the second last number *[27]*. The health condition was tested by the Short Form (36) Health Survey (SF-36), which tested the health-related quality of life by using the respondent's opinions regarding their health condition *[28]*. Another health condition test was the Frenchay Activities Index (FAI) who examined the instrumental activities of daily living (IADL) to assess functional status by asking how many times activities were performed *[29]*. The Modified Fatigue Impact Scale (MFIS) rated how fatigue (on the cognitive, physical or psychosocial level) impacted the live of the respondents *[26]*. Finally, the Hospital Anxiety and Depression scales (HADS) was applied to assess feelings of anxiety and depression *[30]*.

Statistical analysis

After the respondents completed the travel survey, the data of the travel diaries was implemented manually in a database. Afterwards these trips, registered in the travel diaries, were compared manually (and complemented) with the GPS-logs by the use of the software program 'GPS Photo Tagger version 1.2.4. (iTravel-Tech Inc)'. As such, the final database consisted of all the trips the respondents made during the travel survey, also the trips that were forgotten in the diary or GPS. Every trip indicated if it was registered in the diary, the GPS logger, both data collection instruments or not registered. All statistical calculations were conducted by using the statistical software program 'SPSS statistics version 20' (Chicago, IL) for Windows. Not only descriptive statistics were calculated, also significant differences between the outcome measures, the MS subgroups and data collection methods. To investigate significant differences, non-parametric tests were applied because the Shapiro-Wilk test indicated non-normal distributions of most variables. Variations between the three MS subgroups in relation to the outcome measures (e.g. day, time, activity type, transport mode) were examined by the non-parametric Mann-Whitney test for independent samples to find out between which two MS subgroups the difference was significant. The Wilcoxon test was applied to determine differences in reporting by the total MS group between two outcome measures per data collection method (e.g. "Was research day 1 better filled in the diary than research day 2?"). Bivariate Spearman rank correlation coefficients were calculated to assess the level of association among the number of trips and clinical tests, socio-demographic characteristics and trip-related factors by which a correlation of below 0,30 was considered as poor, 0,30-0,50 as low, 0,50-0,70 as moderate, 0,70-0,89 as high, and above 0,90 as very high *[31]*. Finally, the multiple regression was calculated to determine the most predictive outcome measures for the reporting rate of the travel diary and GPS. All the statistical analysis were significant at a level of 5% confidence interval.

RESULTS

Baseline results

On average the total MS group made 0,79 trips per day concerning the travel diary alone, 0,48 trips concerning the GPS alone and 2,65 trips per day concerning both data collection methods. The mild MS subgroup registered on average 3,38 trips per day in the travel diary and GPS. The moderate MS subgroup reported 2,35 trips per day and the severe MS subgroup 1,68 trips per day. The number of trips per day (registered in both data collection methods) was significantly different between the three MS subgroups. Hence, the higher the physical impairments, the fewer trips the respondents made.

Differences between travel diaries and GPS loggers

Table 2 provides the percentages of the average number of trips per day by MS subgroup and data collection method. The table indicates that the majority of the trips was reported in both data collection methods. The GPS recorded the fewest number of trips. The moderate MS subgroup had with 70,2 % the best similarity among the travel diary and the GPS logger, while the severe MS subgroup had the worst similarity (only 65,3 %). The travel diary was better filled in by the severe MS subgroup than the two other subgroups. Hence, the higher the disease status, the better the travel diary was filled in. Nevertheless the mild and moderate MS subgroups better recorded their trips by the GPS than the severe MS subgroup. It appeared that travel diaries were more useful when the physical impairments increased. Between the mild and moderate MS subgroup there was a small difference concerning the reporting rate of the travel diary. The difference between those two subgroups concerning the

reporting rate of the GPS could be neglected. All the percentages of the data collection methods per subgroups were not significantly different (at a level of 5% confidence interval).

TABLE 2 Average number of trips (in %) per day by data collection method and subgroup

Data collection method	Mild MS (n=51)	Moderate MS (n=27)	Severe MS (n=30)	Total MS (n=108)
Diary	18,4 %	18,4 %	29 %	21,3 %
GPS	13,7 %	11,4 %	5,7 %	10,9 %
Diary&GPS	68 %	70,2 %	65,3 %	67,8 %
Reporting rate diary	86,4 %	88,6 %	94,3 %	89,1 %
Reporting rate GPS	81,7 %	81,6 %	71 %	78,7 %

Table 3 represents the reporting rate (in %) per outcome measure distributed per data collection method and classified by MS subgroup. The travel diary was significantly better filled in the first research day than the other research days (for the total MS subgroup). Trips made on Monday were significantly better reported in the diary and GPS by the severe MS subgroup than the mild MS subgroup. Persons with moderate MS recorded on Saturday better their trips by the GPS than the severe MS subgroup.

Further trips made during the morning (between 6h and 12h) and during the evening (between 16h and 20h) were better recorded in the GPS by the mild than the severe MS subgroup. Also trips recorded by the GPS during the afternoon (between 12h and 16h) were superior reported by the moderate than the severe MS subgroup. Nevertheless the reporting rate for both data collection methods by the total MS group, was significantly better for trips made during the morning and noon than trips made during the late afternoon and evening. Trips with a duration between 31 and 60 minutes were significantly well filled in the travel diary by the severe MS subgroup. Persons with moderate MS filled in the diary superior than the other respondents for small trip durations (between one and ten minutes). Trips with a duration between one and 20 minutes were significantly better recorded in the GPS, than trips with a duration between 31 and 60 minutes. GPS-recorded trips with an activity duration less than 30 minutes were significantly better reported than trips with a duration between 31 and 120 minutes and more than two hours. The mild and moderate MS subgroup recorded well trips with a distance between 10,1 and 50 kilometres in the GPS. This severe MS subgroup did not recorded any trip higher than 10,1 kilometre in the GPS. Short trips (with a distance smaller than 0,5 kilometre) were significantly better filled in the travel diary than trips with a distance between 2,1 and 50 kilometre. GPS-recorded trips with a distance between 0,6 and 10 kilometre were significantly better reported than other GPS-recorded trip distances.

Work and education related trips were always filled in the travel diary. Persons with mild MS reported superior their trips to leisure activities in both data collection methods than persons with moderate MS. Trips due to personal care were significantly better filled in the travel diary than trips for shopping or services. The GPS recorded significantly better trips to homewards than trips to other activities (except trips to work or education). Car passenger performed trips were significantly better reported in the travel diary and GPS than trips by bike. When the moderate MS subgroup made trips as car passenger, they significantly better recorded their trips in the GPS than the mild and severe MS subgroup. The outcome measure car contains the trips who were only recorded in the GPS and it was not clear whether the trips were made as car driver or passenger. Trips made by a(n) (electric) wheelchair or electric scooter were significantly better filled in the travel diary by the severe than the moderate MS subgroup. Trips made alone were significantly better filled in the travel diary by the mild than the moderate MS subgroup. The moderate MS subgroup made significantly more spontaneous GPS-recorded trips, than the mild MS subgroup. Finally, the moderate MS subgroup significantly better filled in single trips in the travel diary than the mild MS subgroup.

Briefly, trips made during the morning and mandatory trips were better reported. The smaller the trip and activity duration, the better the trips were recorded in the GPS and the worse they were filled in the travel diary. Trips to homewards were better recorded in the GPS than trips with another goal and the lower the disability degree, the better trips made alone, were filled in the diary.

TABLE 3 Reporting rate (in %) per outcome measure and MS subgroup

		Mild (n=51)			Moderate (n=27)			Severe (n=30)			Total MS (n=108)			Diary			GPS			Diary & GPS		
		Diary	GPS	DG	Diary	GPS	DG	Diary	GPS	DG	Diary	GPS	DG	MW			MW			MW		
		Reporting rate (in %)												1-2	1-3	2-3	1-2	1-3	2-3	1-2	1-3	2-3
	Number of trips	18,4	13,7	68,0	18,4	11,4	70,2	29,0	5,7	65,3	21,3	10,9	67,8	0,81	0,28	0,43	0,75	0,06	0,06	0,86	0,79	0,84
Research day	day 1	24,2	7,0	68,7	35,3	5,1	59,6	42,7	7,3	50,0	31,7	6,6	61,6	0,36	0,06	0,50	0,56	0,65	0,88	0,49	0,06	0,37
	day 2	16,5	11,2	72,3	15,6	9,9	74,5	25,0	3,7	71,2	18,2	9,2	72,7	0,21	0,89	0,25	0,82	0,10	0,19	0,60	0,51	0,94
	day 3	16,0	17,1	67,0	22,6	12,4	65,0	33,3	5,3	61,3	21,5	13,3	65,2	0,95	0,37	0,43	0,34	0,05	0,29	0,90	0,72	0,68
	day 4	22,0	11,2	66,8	11,8	14,4	73,8	27,5	8,2	64,3	20,7	11,3	68,0	0,13	0,91	0,34	0,50	0,61	0,30	0,46	0,94	0,64
	day 5	22,5	13,3	64,2	7,4	15,1	77,5	23,1	6,6	70,3	19,7	11,9	68,4	0,10	0,78	0,24	0,52	0,44	0,17	0,29	0,52	0,96
	day 6	25,6	10,9	63,5	21,6	14,4	64,0	17,7	7,0	75,3	23,1	11,1	65,8	0,44	0,40	0,86	0,96	0,88	0,95	0,77	0,27	0,51
	day 7	23,3	13,9	62,7	22,1	12,9	65,0	17,6	3,8	78,6	21,6	11,1	67,3	0,60	0,55	0,98	0,68	0,17	0,45	0,67	0,09	0,38
Week day	Monday	31,2	6,1	62,7	24,6	10,1	65,3	15,4	2,8	81,8	25,6	6,1	68,3	0,45	0,07	0,43	0,61	0,43	0,26	0,67	**0,03***	0,15
	Tuesday	23,4	12,9	63,7	31,9	8,0	60,1	28,4	16,7	57,8	26,7	12,4	61,5	0,73	0,70	0,92	0,45	0,82	0,35	0,85	0,66	0,78
	Wednesday	17,7	15,6	66,7	12,3	13,6	74,1	18,3	4,3	77,4	16,4	12,5	71,1	0,22	0,60	0,56	0,79	0,06	0,13	0,30	0,13	0,75
	Thursday	19,0	9,6	71,4	16,0	7,2	76,8	36,5	4,5	59,0	22,0	7,9	70,2	0,27	0,11	0,05	0,46	0,21	0,60	0,33	0,20	0,10
	Friday	19,0	16,0	65,0	16,4	8,5	75,1	30,3	5,9	63,8	21,1	11,7	67,2	0,22	0,83	0,34	0,21	0,06	0,55	0,18	0,83	0,39
	Saturday	18,5	12,5	69,0	20,4	20,1	59,5	34,1	3,8	62,2	23,0	12,1	64,9	0,96	0,23	0,31	0,16	0,14	**0,01****	0,22	0,68	0,64
	Sunday	22,6	12,1	65,3	19,4	17,8	62,8	27,4	9,7	62,9	23,2	12,6	64,2	0,73	0,92	0,70	0,72	0,98	0,74	0,85	0,95	0,87
Departure time trip	06h-08h	29,8	11,7	58,6	8,3	0,0	91,7	50,0	0,0	50,0	29,5	7,3	63,2	0,16	0,49	0,15	0,32	0,32	1,00	0,07	0,85	0,15
	08h-10h	25,2	8,3	66,4	30,2	2,6	67,1	37,4	2,9	59,7	28,9	5,9	65,2	0,27	0,37	0,92	0,12	0,16	0,94	0,74	0,50	0,73
	10h-12h	17,5	12,2	70,4	20,8	5,7	73,5	26,5	3,1	70,4	20,6	8,2	71,2	0,47	0,65	0,92	0,13	**0,02***	0,45	0,62	0,50	0,75
	12h-14h	16,3	12,6	71,1	12,9	7,4	79,7	31,3	2,0	66,7	19,2	8,5	72,2	0,43	0,45	0,17	0,26	**0,02***	0,22	0,32	0,79	0,64
	14h-16h	16,6	13,1	70,3	19,0	15,2	65,8	24,3	5,4	70,3	19,1	11,7	69,1	0,94	0,55	0,70	0,51	0,43	0,16	0,50	0,93	0,52
	16h-18h	18,5	16,9	64,6	24,2	12,0	63,8	31,3	5,4	63,3	23,3	12,7	64,1	0,52	0,46	0,82	0,58	**0,03***	0,13	0,88	0,86	0,89
	18h-20h	23,8	16,6	59,6	23,2	19,2	57,7	27,5	11,1	61,5	24,4	16,1	59,5	0,54	0,90	0,71	0,71	0,65	0,58	0,81	0,86	0,77
	20h-22h	10,7	26,3	63,1	9,8	18,1	72,1	32,7	10,3	57,1	15,0	20,8	64,2	0,83	0,15	0,17	0,65	0,33	0,67	0,53	0,56	0,29
	22h-06h	24,7	19,8	55,6	29,6	11,1	59,3	30,8	6,4	62,8	27,4	14,3	58,3	0,87	0,88	0,97	0,35	0,30	0,87	0,81	0,60	0,94
	Unknown	55,8	30,0	14,2	45,0	25,0	30,0	68,5	5,6	25,9	56,2	24,5	19,3	0,43	0,60	0,28	0,63	0,84	0,25	0,21	0,39	1,00
Duration trip (min)	1-10	23,0	14,9	62,2	15,7	14,5	69,8	22,6	8,2	69,3	20,9	13,2	65,9	**0,03***	0,47	0,38	0,71	0,16	0,35	0,20	0,29	0,71
	11-20	14,7	13,1	72,2	19,9	16,6	63,6	25,0	7,7	67,3	18,4	12,8	68,8	0,39	0,26	0,65	0,18	0,39	0,05	0,13	0,65	0,58
	21-30	13,9	15,6	70,6	17,1	5,5	77,4	20,6	5,7	73,7	16,3	10,7	73,0	0,43	0,61	0,96	0,12	0,07	0,71	0,56	0,60	0,97
	31- 60	13,4	6,3	80,3	6,8	6,7	86,5	29,0	2,5	68,5	15,6	5,5	78,9	0,49	**0,03***	**0,02***	0,47	0,39	0,17	0,65	0,13	0,10
	>=61	35,0	1,7	63,3	17,5	7,5	75,0	15,4	0,0	84,6	22,7	2,7	74,6	0,46	0,18	0,52	0,38	0,30	0,10	0,71	0,18	0,30
	Unknown	60,0	24,4	15,6	73,5	6,3	20,2	51,1	0,0	48,9	61,3	12,6	26,1	0,56	0,70	0,41	0,34	0,05	0,14	0,76	0,11	0,26
Duration activity (min)	<=30	15,4	16,9	67,7	10,6	16,2	73,1	20,5	10,6	68,9	15,2	15,3	69,5	0,22	0,65	0,24	0,75	0,15	0,12	0,64	0,72	0,95
	31-60	20,6	12,7	66,7	18,5	4,7	76,9	27,4	1,9	70,7	21,6	8,0	70,4	0,55	0,95	0,72	0,19	0,06	0,45	0,22	0,34	0,92
	61-120	19,7	6,5	73,8	23,5	0,7	75,8	21,2	1,7	77,1	21,0	3,9	75,1	0,77	0,71	0,70	0,08	0,29	0,48	0,65	0,43	0,87
	120-240	24,9	8,1	67,0	19,0	10,2	70,8	29,0	15,9	55,1	24,7	10,6	64,7	0,55	0,91	0,70	0,67	0,44	0,78	0,83	0,46	0,39
	>=241	21,3	1,7	77,0	38,9	6,7	54,4	45,8	0,0	54,2	32,7	2,4	64,9	0,26	0,12	0,72	0,61	0,43	0,27	0,14	0,16	0,98
	Unknown	57,2	10,4	32,4	42,2	28,9	28,9	40,1	12,7	47,2	50,1	13,9	36,0	0,39	0,24	0,87	0,17	0,72	0,44	0,88	0,29	0,60

		Mild (n=51)			Moderate (n=27)			Severe (n=30)			Total MS (n=108)			Diary			GPS			Diary & GPS		
		Diary	GPS	DG	Diary	GPS	DG	Diary	GPS	DG	Diary	GPS	DG	MW			MW			MW		
		Reporting rate (in %)												1-2	1-3	2-3	1-2	1-3	2-3	1-2	1-3	2-3
Distance (km)	0-0,5	34,1	7,5	58,4	34,2	1,0	64,8	28,6	2,8	68,5	32,8	4,7	62,5	0,81	0,64	0,88	0,15	0,41	0,51	0,45	0,36	0,92
	0,6-2	19,9	20,9	59,2	20,1	13,8	66,1	16,9	10,9	72,2	19,4	16,9	63,7	0,64	0,30	0,66	0,19	0,29	0,88	0,37	0,18	0,51
	2,1-10	17,2	15,6	67,2	13,1	14,7	72,2	29,0	7,6	63,4	19,1	13,4	67,5	0,23	0,64	0,19	0,83	0,10	0,10	0,44	0,86	0,55
	10,1-50	14,4	12,3	73,4	14,0	7,9	78,1	36,4	0,0	63,6	19,2	8,5	72,3	0,86	0,05	0,11	0,92	**0,01****	**0,01****	0,59	0,57	0,31
	>50,1	25,0	0,0	75,0	19,4	5,6	75,0	31,3	0,0	68,8	24,0	2,0	74,0	1,00	0,50	0,60	0,25	1,00	0,50	0,70	0,50	0,87
	Unknow	0,0	0,0	100,0	0,0	0,0	100,0	50,0	0,0	50,0	16,7	0,0	83,3	1,00	0,32	0,32	1,00	1,00	1,00	1,00	0,32	0,32
Activity	Work/Education	31,7	0,0	68,3	0,0	0,0	100,0	33,3	0,0	66,7	26,3	0,0	73,7	**0,03***	0,70	**0,01****	1,00	1,00	1,00	**0,03***	0,70	**0,01****
	Shopping/services	16,5	2,6	80,9	12,5	0,0	87,5	34,2	1,1	64,7	19,6	1,5	78,9	0,41	0,12	0,05	0,20	0,76	0,29	0,27	0,17	**0,04***
	Leisure	16,2	1,4	82,4	25,9	6,1	68,0	28,8	2,1	69,2	21,6	2,8	75,7	0,13	0,10	0,83	0,08	0,56	0,37	**0,04***	0,06	0,86
	Social	30,0	1,8	68,2	22,0	4,6	73,4	26,7	3,5	69,8	27,2	2,9	69,9	0,48	0,61	0,89	0,34	0,84	0,39	0,99	0,82	0,95
	Personal care	24,0	0,9	75,0	31,2	1,7	67,2	37,4	0,0	62,6	29,5	0,9	69,6	0,22	0,26	0,87	0,67	0,46	0,32	0,25	0,28	0,95
	Walking	31,2	3,0	65,8	12,5	10,0	77,5	17,2	0,0	82,8	23,0	4,0	73,0	0,10	0,25	0,65	0,93	0,31	0,32	0,18	0,13	0,89
	Bring/get	27,1	4,6	68,3	24,6	0,0	75,4	37,5	0,0	62,5	27,3	3,1	69,6	0,78	0,74	0,64	0,20	0,45	1,00	0,50	0,89	0,64
	Other	50,0	0,0	50,0	0,0	0,0	100,0	60,0	0,0	40,0	35,6	0,0	64,4	0,18	0,62	0,05	1,00	1,00	1,00	0,18	0,62	0,05
	Home	19,3	13,1	67,6	20,5	11,4	68,1	31,1	5,2	63,7	22,8	10,6	66,7	0,23	0,32	0,86	0,51	0,10	0,31	0,73	0,73	0,97
Transport mode	Car driver/Motor	22,1	1,6	76,0	16,9	5,4	77,3	14,2	1,1	84,7	19,4	2,5	77,9	0,50	0,41	0,84	0,45	0,40	0,23	0,89	0,37	0,45
	Car passenger	21,7	0,0	78,3	20,8	9,2	70,0	32,5	0,8	64,2	24,3	2,4	72,7	0,99	0,20	0,25	**0,00****	0,17	**0,03***	0,17	0,15	0,81
	Car	0,0	96,0	4,0	0,0	79,2	20,8	0,0	88,9	11,1	0,0	90,8	9,2	/	/	/	0,15	0,32	0,65	0,15	0,32	0,65
	Cyclist	26,5	13,6	54,6	31,7	8,3	60,0	0,0	100,0	0,0	26,3	16,4	53,2	0,49	0,39	0,28	0,68	0,09	0,11	0,87	0,22	0,15
	Pedestrian	31,2	4,3	64,2	25,3	2,2	71,5	21,4	20,0	58,6	28,3	5,4	65,9	0,41	0,25	0,65	0,93	0,68	0,66	0,34	0,79	0,77
	Public transport	41,7	18,2	40,2	4,8	11,7	80,2	66,7	0,0	33,3	35,9	13,6	49,6	0,22	0,50	0,20	0,89	0,33	0,24	0,13	0,74	0,28
	Wheelchair,scooter	0,0	0,0	0,0	0,0	16,7	83,3	33,5	3,3	63,2	22,9	7,5	69,5	/	/	**0,00****	/	/	0,52	/	/	0,05
	Disabled transport	0,0	0,0	100,0	50,0	0,0	50,0	47,5	0,0	52,5	43,0	0,0	57,0	0,32	0,31	1,00	1,00	1,00	1,00	0,32	0,31	1,00
	Unknown	7,7	28,4	14,9	22,2	48,1	0,0	40,6	18,8	15,6	18,1	31,0	11,5	0,31	0,23	0,78	0,22	0,45	0,13	0,12	0,95	0,12
Plan	Planned	23,1	5,0	71,9	20,6	7,3	72,1	31,3	2,3	66,3	24,6	4,9	70,5	0,10	0,23	0,76	0,17	0,69	0,36	0,46	0,46	0,89
	Spontaneous	24,4	3,3	72,3	15,0	6,5	78,4	21,0	3,1	75,8	21,2	4,3	74,6	0,17	0,73	0,37	**0,01****	0,09	0,24	0,89	0,61	0,64
	Unknown	8,2	73,0	18,8	8,0	66,7	25,3	10,8	42,0	47,2	8,9	62,6	28,5	0,97	0,55	0,64	0,37	0,24	0,10	0,46	0,13	0,07
Sort	Single	25,2	12,1	62,6	33,4	12,3	54,4	32,6	3,8	63,6	26,8	8,7	64,5	**0,03***	0,89	0,16	0,30	0,39	0,87	0,70	0,34	0,31
	Chain	14,2	17,9	67,9	16,8	33,4	49,8	18,4	11,1	70,6	14,8	16,9	68,3	0,76	0,60	0,45	0,08	0,76	0,19	0,15	0,77	0,10

*(DG= Diary&GPS, MW= Mann-Whitney test, significant *p<0,05; **p<0,01)*

Influencing factors

Bivariate correlations

Bivariate correlations were made to assess the influence among clinical, socio-demographic and trip-related outcome measures and the average number of trips (in %) per data collection method. The clinical tests had almost no influence on the reporting rate of the travel diary and GPS, since only in the moderate MS subgroup a significant relationship (positive and negative) was found between the reporting rate of the GPS and the 25FWT, SF36 mental test and the HADS-anxiety test. The more meters a respondent with moderate MS could walk in one second, the less trips the respondent made were recorded by the GPS. But the better a respondent with moderate MS scored on the SF36-mental test, the better the trips were recorded in the GPS. When the respondent had a high score on the HADS-anxiety test, the trips were not good recorded in the GPS.

The socio-demographic outcome measures age, education, work situation and the number of persons in the household had an influence on the reporting rate of the travel diary and GPS. The higher the education of the respondents of the moderate, severe and total MS (sub)group, the better the travel diary was filled in. The same was true for the work situation of the respondents of the mild and total MS (sub)group. The more the respondent worked per week (not working, half-time or full-time), the better the travel diary was filled in. The more persons in the household of the mild and total MS (sub)group, the worse the travel diary was filled in and the worse the GPS was completed for the moderate MS subgroup. The age of this last MS subgroup had a negative influence on the total trips recorded in the GPS. The higher the age, the more they forgot to take the GPS with them during trips.

Finally, some trip-related outcome measures influenced the reporting rate of the travel diary and GPS. The more trips respondents of the severe and total MS (sub)group made, the worse the travel diary was filled in. Trips made by the mild MS subgroup between 14h and 16h were significantly good recorded in the GPS. But trips made by the severe MS subgroup between 18h and 20h were not good filled in the travel diary. Trips to work and trips made as car passenger were significantly good filled in the travel diary by the mild MS subgroup. But the same subgroup forgot to record trips with the GPS which were made by public transport or trips to social activities. Trips to services were significantly good registered in the travel diary by the moderate MS subgroup. In the travel diary, trips with the goal of walking or biking for leisure, trips for bringing or getting someone and trips to homewards were significantly not good filled in the travel diary by the total MS group. The same was true for trips that were made by bike. Like the mild MS subgroup, also the total MS group did not recorded well trips made by public transport in the GPS. Trips that were made alone were significantly not good recorded in the GPS by the total MS group.

TABLE 4 Bivariate correlation analysis among percentage number of trips and influencing factors by subgroup

	Reporting rate of the diary				Reporting rate of the GPS			
	Mild MS	**Moderate MS**	**Severe MS**	**Total MS**	**Mild MS**	**Moderate MS**	**Severe MS**	**Total MS**
OUTCOME MEASURE	**Average number of trips in %**				**Average number of trips in %**			
Clinical								
25FWT (m/s)	0,24	0,05	-0,05	-0,09	-0,05	**-0,57****	-0,01	0,01
9HPT-R (s)	-0,18	0,12	0,04	0,02	-0,08	0,27	-0,01	0,01
9HPT-L (s)	-0,26	-0,08	-0,07	-0,03	-0,01	0,22	0,14	0,04
TMT-A (s)	-0,25	-0,17	0,03	-0,06	0,07	0,36	-0,23	-0,03
TMT-B (s)	-0,12	-0,37	0,01	-0,07	0,07	0,01	-0,28	-0,11
PVSAT (n)	0,03	-0,06	0,10	-0,01	-0,01	-0,05	0,25	0,10
SF36 - Physical	0,09	-0,20	-0,24	-0,16	-0,02	-0,29	-0,18	-0,03
SF36 - Mental	0,02	-0,02	0,16	0,07	-0,20	**0,48***	0,07	0,05
HADS - Fear	0,14	0,10	0,00	0,07	-0,03	**-0,45***	-0,02	-0,11
HADS - Depression	0,05	0,13	0,19	0,16	-0,07	0,02	0,05	-0,04
HADS - Total	0,10	0,08	0,09	0,12	-0,05	-0,30	0,04	-0,07
MFIS - Physical	-0,07	0,29	0,03	0,03	0,17	-0,06	-0,04	0,04
MFIS - Cognitive	-0,05	0,20	-0,03	-0,01	0,18	-0,19	-0,17	-0,06
MFIS - Psychological	0,01	0,33	-0,05	0,07	0,12	-0,04	0,14	0,08
MFIS - Total	-0,06	0,22	0,04	0,03	0,23	-0,14	-0,13	0,00
Socio-demographic								
Gender	-0,14	0,08	-0,03	-0,08	0,08	-0,14	0,02	0,01
Age	0,13	0,17	0,00	0,02	0,10	**-0,54****	0,04	-0,02
Education	0,07	**0,49****	**0,51****	**0,23***	-0,01	0,07	0,04	0,06
Work	**0,35***	0,17	0,26	**0,22***	-0,04	0,07	-0,06	0,02
Number of persons in household	**-0,29***	0,17	-0,31	**-0,23***	0,05	**-0,49****	0,06	-0,01
Number of cars in household	-0,06	-0,08	0,11	-0,05	0,11	0,10	0,01	0,10
Income	0,08	0,16	-0,12	0,03	-0,09	-0,20	0,08	-0,07
Driving ability	0,01	-0,07	0,01	-0,08	0,14	-0,09	0,04	0,07
Ambulatory device	0,02	-0,02	0,07	0,03	0,51	-0,07	0,31	0,14
Trip-related								
Average number of trips	-0,19	-0,03	**-0,37***	**-0,22***	0,01	-0,05	0,03	0,05
Start time trip between 14h-16h	-0,19	0,08	0,14	-0,04	**0,30***	0,22	0,02	0,18
Start time trip between 18h-20h	0,05	-0,17	**-0,37***	-0,16	-0,01	0,09	-0,18	-0,04
Trips to work	**0,42****	0,13	0,18	0,14	-0,17	-0,07	0,02	-0,02
Trips to services	0,14	**0,40***	0,11	0,16	0,23	0,21	0,11	**0,19***
Trips to leisure activities	-0,10	0,01	0,07	-0,03	0,08	-0,18	0,04	-0,01
Trips to social activities	0,11	-0,19	-0,28	-0,11	**-0,29***	0,01	-0,09	-0,16
Trips to health care	0,10	0,13	0,15	0,16	0,17	-0,26	-0,24	-0,10
Trips for walking	-0,22	-0,23	-0,27	**-0,23***	0,04	0,03	0,06	0,04
Trips for bring and get	-0,27	-0,17	0,02	**-0,23***	0,20	-0,27	0,11	0,10
Trips to home	-0,26	-0,27	-0,32	**-0,27****	-0,03	0,03	0,19	0,03
Car driver/Motor	0,25	-0,25	-0,01	-0,02	0,25	-0,22	0,23	0,13
Car passenger	**0,31***	0,04	0,01	0,14	-0,24	0,34	0,14	0,04
Car	**-0,80****	**-0,49****	**-0,65****		0,05	0,07	0,27	0,14
Cyclist	-0,25	-0,10	-0,19	**-0,27****	-0,10	-0,08	0,18	-0,03
Pedestrian	0,06	0,33	-0,18	0,00	-0,13	-0,25	0,14	-0,08
Public transport	0,13	0,15	0,09	0,08	**-0,32***	-0,23	-0,18	**-0,26****
Wheelchair, electric scooter	/	0,09	-0,08	0,10	/	0,21	-0,14	-0,03
Disabled transport	0,18	-0,26	0,17	0,15	-0,20	0,00	-0,05	-0,13
Trips made alone	-0,08	0,16	0,06	0,01	-0,21	-0,24	-0,25	**-0,22***
Trips made with others	-0,04	0,23	-0,22	-0,01	-0,17	-0,04	-0,23	-0,16

*(Significant correlation coefficient, *p<0,05; **p<0,01)*

Regression

Table 5 presents the multiple regression analysis for the reporting rate of the travel diary and GPS. The number of persons in the household was a good predictor for the reporting rate of the travel diary. Also trip-related outcome measures were good predictors. Clinical tests were no good predictors for the reporting rate of the travel diary and GPS. The reporting rate of the travel diary could be best predicted (for 27%) for the mild MS subgroup by means of the number of persons in the household and trips made as car passenger. For the reporting rate of the GPS the best prediction contained 42% for the moderate MS subgroup by using the HADS-anxiety test and the age of the respondent. The reporting rate of the travel diary by the total MS group (Y= 1,14 + (-0,04 * number of persons in the household) + (-0,37 * trips to homewards)) could be predicted for 22%. The reporting rate of the GPS (Y= 0,7 + (0,31 * trips to services)) could only be predicted for 5% by means of trips made to services.

TABLE 5 Multiple regression analysis of the reporting rate of the travel diary and GPS per MS subgroup

	Reporting rate of the diary																Reporting rate of the GPS															
	Mild MS				Moderate MS				Severe MS				Total MS				Mild MS				Moderate MS				Severe MS				Total MS			
Outcome measures	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**	**β**	**SE**	**t**	**p**
Clinical																																
HADS-Anxiety																					-0,02	0,01	-2,57	0,02*								
Socio-demographic																																
Age																					-0,01	0,00	-2,67	0,02*								
Education									0,03	0,01	2,74	0,01**																				
Number of persons in household	-0,06	0,02	-3,34	>0,001 **									-0,04	0,01	-3,67	< 0,001 **																
Trip-related																																
Start time between 14h and 16h																	0,53	0,2	2,27	0,03*												
Trips to services																													0,31	0,14	2,17	0,03*
Trips to social																	-0,85	0,25	-3,49	0,00**												
Trips to home													-0,37	0,15	-2,50	0,01**																
Transport mode: car passenger	0,26	0,12	2,11	0,04*																												
Overall model																																
R^2	0,27				/				0,22				0,16				0,27				0,42				/				0,05			
Adjusted R^2	0,24				/				0,18				0,14				0,23				0,38				/				0,04			
β constant	1,00				/				0,82				1,14				0,81				15,62				/				0,70			
SE	0,06				/				0,05				0,06				0,05				5,49				/				0,05			
p	<0,001				/				<0,001				<0,001				<0,001				>0,001				/				<0,001			

*(R^2, predictive value; β, estimate; SE, standard error; significant *p<0,05; **p<0,01)*

DISCUSSION

This study aimed to find out which data collection system, travel diaries or GPS loggers, was more convenient to use in a travel survey conducted to persons with disabilities. The present study indicated that the majority of the trips, made by persons with MS, were registered in both data collection methods (as well travel diary as GPS), while the smallest amount of trips were recorded by the GPS only. The severe MS subgroup completed the travel diary the best, but they forgot to record the most trips by their GPS. The results for the mild MS subgroup were the opposite, they mostly forgot to fill in the travel diary but recorded the trips by the GPS better. Hence, GPS loggers seemed to be more suitable for persons with mild MS, than for persons with severe MS. It is remarkable that the severe MS subgroup made better use of the travel diary, since we expected that the severe MS subgroup would fill in the travel diary worse due to their (hand) impairments. However, it is possible that the travel diary was filled in better by the severe MS subgroup thanks to household members who helped the respondents filling in the diary. The first research day less trips were recorded by the GPS compared to the other research days, which may be due to the fact that most of the respondents received the GPS logger on the first research day after they had already made some trips, which they filled in the travel diary. The present research showed that the smaller the trip and activity duration, the better the trips were recorded in the GPS and the worse they were filled in the travel diary. The literature confirmed that short duration trips (less than 15 minutes) were more likely to be underreported than longer duration trips (longer than 60 minutes) *[15]*. Trips to work or school were always filled in the travel diary, while trips for personal care were better filled in than trips for shopping or services. Hence, mandatory trips were filled in well in the travel diary, which is consistent with the previous studies *[15]*. Trips to homewards were significantly better recorded by the GPS than trips to other activities. As such, GPS loggers were ideal data collection methods for completing the travel diary data. Trips made as a car passenger were significantly better reported than trips made by bike. This may be due to the fact that trips made by bicycle were usually short trip distances, which were (as already said) more likely to be underreported.

Also for the bivariate correlations there were some findings. It was interesting (but unexpected) that the clinical tests had no influence on the reporting rate of the travel diary. Only the reporting rate of the GPS for the moderate MS subgroup was influenced by clinical tests as the 25FWT, the SF36-mental test and the HADS-anxiety test. Hence, clinical tests were not the most important influencing factor concerning the reporting rate of the travel diary and GPS, which is not in line with our expectations, as it was expected that clinical tests would affect the reporting rate of the travel diary and GPS. As a result, the study pointed out that the differences in reporting rate of the data collection methods between the different subgroups were dependent on their variations in socio-demographic characteristics and trip-related factors, and not dependent on the scores of the clinical tests. The literature showed that the age of the respondents had a significantly negative influence on the trips recorded by the GPS *[13]*. The study confirmed this finding for the moderate MS subgroup. As such, GPS loggers were less suitable for elderly respondents with moderate MS. Previous studies also indicated that a travel diary was more suitable for elderly respondents and GPS loggers for younger respondents *[13]*. The number of persons in the household had a significantly negative influence on filling in the travel diary for the mild and total MS (sub)group and on the GPS recording rate of the moderate MS subgroup. This is consistent with the literature which stated that households with five or more members showed overreporting during AM peak periods and underreporting during mid-day and PM peak periods *[15]*. Nevertheless, the study was not fully consistent with the literature because there was no relationship between the reporting rate of the data collection methods and the gender of the respondent, the number of cars and the income of the household *[15]*. This may be due to the fact that the respondents had a lower number of cars and a lower income than persons with no disabilities.

Trip-related outcome measures also had an influence on the reporting rate of the data collection methods. However, the present and previous studies did not agree to each other concerning the trip start time. According to the present research, trips made between 14h and 16h were good recorded in the GPS by the mild MS subgroup, and trips made between 18h and 20h were not filled in well in the diary by the severe MS subgroup. The literature pointed out that trips made during mid-day and PM peak periods were more likely to be misreported than AM peak periods *[15]*. It is possible that the differences were due to the tiredness of the respondents during mid-day and PM peak periods, which resulted in forgetting to fill in the travel diary. Previous studies also indicated that non-mandatory trips were not good reported probably due to the fact that they were made spontaneously *[15]*. The present study confirmed this finding for trips with the goal of walking or biking for leisure, trips for bringing or getting someone and trips to homewards. Those trips were significantly filled in worse in the travel diary by the total MS group. Trips travelled by public transport were

not recorded properly by the GPS by the mild and total MS subgroup, this is consistent with the literature *[15]*. The present study showed that trips made alone were filled in significantly better in the travel diary by the mild MS subgroup but they were not well recorded in the GPS by the total MS group. This was not consistent with previous studies *[15]*. Hence, GPS loggers were more likely to be forgotten by persons with disabilities who travelled alone.

As a result of these findings, it is recommended to choose (a) data collection method(s) depending on the aim of the research, the trip-related characteristics (if known in advance) and the respondents disability degree. The higher the disability degree, the better the travel diary will be used. However, a combination of both data collection methods always delivered more travel data which increases the quality. Household members and/or travel companions could help the respondents filling in the travel diary or help them remember to take the GPS logger with them. Therefore it is important to inform them about the travel survey.

CONCLUSION

The study indicated that the higher the disability degree, the worse the data of both data collection methods was similar to each other. This misreporting seemed to be due to a combination of personal, socio-demographic and trip-related characteristics and not due to the clinical tests scores. The research showed that the travel diary was more suitable when the physical impairments increased, also for mandatory trips and trips made alone. The GPS logger was preferred during trips to homewards, small trips and trips with a short activity duration. The study pointed out that during a travel survey applied to persons with disabilities, a data collection method could be preferred depending on the aim of the study, the trip-related characteristics and the respondents disability degree. Nevertheless a combination of both data collection methods is recommended since a combination delivered better quality of travel data than when only one data collection method was used. Personal, socio-demographic and trip-related characteristics influenced the reporting rate. The data-quality could be increased by informing the household members or travel companions about the travel survey.

LIMITATIONS AND FUTURE RESEARCH

Nevertheless the study also contained some limitations which need to be considered in future research. Due to the small sample size, the reporting rate of some outcome measures contained small percentages. Hence, findings must be treated carefully because they might not be generalized to the global MS population. The travel survey made use of cross-sectional data and not longitudinal data, which makes it impossible to follow up on the respondents disabilities over a period of time. Because the study is conducted in the transportation area, the MS subgroups were based on the physical status of the respondents, so the results of this study could be used during other travel surveys in the transportation area which are focussed on the physical accessibility of persons with disabilities. Other classifications, such as cognitive status or health condition, could have delivered different results which can be conducted in future research. The respondents in this study also wore medical pedometers during the seven research days. The data acquired by using medical pedometers could also be compared to the data gained by the travel diary and GPS. It gives the researchers the opportunity to examine the physical status of respondents with disabilities and the accessibility of places. The pedometers provide reliable information due to the high accuracy rate and the long battery life. Also other data collection methods (e.g. personal digital assistants (PDA), smartphones, ...) could be useful for future research concerning travel survey conducted to persons with disabilities.

ACKNOWLEDGEMENT

The authors wish to thank all the respondents in this study, their family members and/or companion for their voluntary participation.

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ANNEX 1 Number of trips per outcome measure and MS subgroup

	Mild MS (n=51)				Moderate MS (n=27)				Severe MS (n=30)				Total (n=108)			
	D	G	DG	Tot	D	G	DG	Tot	D	G	DG	Tot	D	G	DG	Tot
Number of trips	346	255	1153	1754	117	69	445	631	147	35	354	536	610	359	1952	2921
Research day																
day1	50	16	158	224	26	4	55	85	34	7	39	80	110	27	252	389
day2	47	46	223	316	15	10	80	105	19	4	51	74	81	60	354	495
day3	40	68	188	296	26	13	70	109	18	4	43	65	84	85	301	470
day4	61	36	175	272	11	15	76	102	25	7	57	89	97	58	308	463
day5	50	33	157	240	5	12	60	77	15	5	52	72	70	50	269	389
day6	51	22	119	192	16	13	51	80	12	5	45	62	79	40	215	334
day7	40	39	130	209	14	5	53	72	15	3	73	91	69	47	256	372
Week day																
Monday	61	15	130	206	23	7	59	89	14	3	72	89	98	25	261	384
Tuesday	55	35	165	255	26	7	48	81	22	9	34	65	103	51	247	401
Wednesday	45	52	187	284	16	12	83	111	15	5	100	120	76	69	370	515
Thursday	53	32	195	280	16	8	82	106	21	4	52	77	90	44	329	463
Friday	58	67	188	313	11	11	85	107	28	5	54	87	97	83	327	507
Saturday	30	32	169	231	14	15	57	86	23	3	44	70	67	50	270	387
Sunday	36	23	108	167	7	12	31	50	17	6	39	62	60	41	178	279
Departure time trip																
06h-08h	12	4	36	52	1	0	14	15	3	0	4	7	16	4	54	74
08h-10h	48	28	148	224	23	3	56	82	19	1	38	58	90	32	242	364
10h-12h	52	33	180	265	17	9	85	111	25	5	66	96	94	47	331	472
12h-14h	42	31	187	260	15	5	64	84	14	2	48	64	71	38	299	408
14h-16h	45	43	197	285	17	15	73	105	26	6	64	96	88	64	334	486
16h-18h	51	40	188	279	19	12	78	109	23	6	62	91	93	58	328	479
18h-20h	61	40	127	228	12	13	41	66	14	7	38	59	87	60	206	353
20h-22h	14	24	64	102	3	9	24	36	7	5	15	27	24	38	103	165
22h-06h	9	9	23	41	4	1	7	12	5	2	14	21	18	12	44	74
Unknown	12	3	3	18	6	2	3	11	11	1	5	17	29	6	11	46
Start time activity																
06h-08h	7	2	29	38	0	0	2	2	0	0	3	3	7	2	34	43
08h-10h	32	20	109	161	17	2	53	72	14	0	26	40	63	22	188	273
10h-12h	37	21	114	172	11	4	48	63	21	2	39	62	69	27	201	297
12h-14h	23	15	109	147	11	2	41	54	8	2	26	36	42	19	176	237
14h-16h	26	27	127	180	10	7	48	65	19	4	43	66	55	38	218	311
16h-18h	31	21	102	154	7	10	40	57	8	2	28	38	46	33	170	249
18h-20h	40	18	71	129	7	9	27	43	10	4	20	34	57	31	118	206
20h-22h	7	7	25	39	0	5	8	13	2	4	4	10	9	16	37	62
22h-06h	1	4	5	10	1	0	0	1	1	0	3	4	3	4	8	15
Unknown	16	24	9	49	5	3	3	11	5	4	5	14	26	31	17	74
Duration trip (min)																
1-10	205	163	638	1006	45	32	194	271	60	21	140	221	310	216	972	1498
11-20	53	57	281	391	33	24	122	179	40	11	96	147	126	92	499	717
21-30	22	20	110	152	15	5	61	81	12	2	54	68	49	27	225	301
31- 60	26	8	106	140	5	4	49	58	12	1	36	49	43	13	191	247
>=61	7	1	14	22	4	2	14	20	2	0	19	21	13	3	47	63
Unknown	3	6	4	13	15	2	5	22	30	0	9	39	48	8	18	74
Duration activity (min)																
<=30	80	107	335	522	18	29	116	163	14	10	58	82	112	146	509	767
31-60	40	18	102	160	12	4	63	79	19	2	35	56	71	24	200	295
61-120	29	10	110	149	17	1	42	60	14	2	49	65	60	13	201	274
120-240	22	5	72	99	7	3	30	40	11	4	25	40	40	12	127	179
>=241	15	1	62	78	7	1	15	23	10	0	19	29	32	2	96	130
Unknown	34	18	19	71	8	4	4	16	20	4	11	35	62	26	34	122
Distance (km)																
0-0,5	82	17	129	228	26	1	44	71	58	3	66	127	166	21	239	426
0,6-2	75	77	277	429	33	16	94	143	18	15	73	106	126	108	444	678
2,1-10	126	131	486	743	33	40	191	264	46	17	152	215	205	188	829	1222
10,1-50	57	30	244	331	20	11	101	132	21	0	55	76	98	41	400	539
>50,1	6	0	16	22	5	1	14	20	3	0	7	10	14	1	37	52
Unknown	0	0	1	1	0	0	1	1	1	0	1	2	1	0	3	4

Activity																
Work/Education	38	0	72	110	0	0	15	15	1	0	2	3	39	0	89	128
Shopping/services	51	4	242	297	15	0	90	105	20	1	43	64	86	5	375	466
Leisure	17	1	81	99	13	4	43	60	14	1	42	57	44	6	166	216
Social	50	3	86	139	15	3	48	66	25	2	39	66	90	8	173	271
Personal care	18	1	48	67	17	1	29	47	20	0	30	50	55	2	107	164
Walking	16	6	62	84	2	3	15	20	4	0	28	32	22	9	105	136
Bring/get	22	5	96	123	7	0	23	30	2	0	7	9	31	5	126	162
Other	6	0	9	15	0	0	4	4	2	0	4	6	8	0	17	25
Home	110	89	452	651	49	27	174	250	59	13	147	219	218	129	773	1120
Transport mode																
Car driver/Motor	173	14	613	800	70	13	221	304	14	1	89	104	257	28	923	1208
Car passenger	65	0	222	287	18	10	110	138	43	2	83	128	126	12	415	553
Car	0	168	6	174	0	28	5	33	0	15	3	18	0	211	14	225
Cyclist	17	14	86	117	8	2	17	27	0	2	0	2	25	18	103	146
Pedestrian	73	23	194	290	12	2	42	56	5	2	19	26	90	27	255	372
Public transport	10	4	20	34	2	3	27	32	3	0	2	5	15	7	49	71
Manual wheelchair, electric wheelchair, electric scooter	0	0	0	0	0	3	22	25	65	10	140	215	65	13	162	240
Disabled&adapted transport	0	0	4	4	1	0	1	2	10	0	8	18	11	0	13	24
Unknown	8	32	8	48	6	8	0	14	7	3	10	20	21	43	18	82
Company																
Alone	192	19	593	804	63	14	228	305	53	2	178	233	308	35	999	1342
With other people	116	11	483	610	43	9	174	226	58	1	138	197	219	23	795	1037
Unknown	38	225	77	340	11	46	43	100	36	32	38	106	83	301	158	542
Planning																
Planned	265	51	899	1215	93	33	327	453	111	9	273	393	469	93	1499	2061
Spontaneous	64	12	224	300	18	8	99	125	11	2	36	49	93	22	359	474
Unknown	17	192	30	239	6	28	19	53	25	24	45	94	48	244	94	386
Single/chain																
Single	213	116	634	963	75	30	238	343	104	17	251	372	392	163	1123	1678
Chain	130	139	519	788	42	39	207	288	43	18	103	164	215	196	829	1240

(D= diary; G= GPS; DG= diary&GPS; Tot= total)

ANNEX 2 Baseline results per outcome measure of the mild MS subgroup

	Mild MS (n=51)			
	Diary	**GPS**	**Diary&GPS**	**Total**
Number of trips	3,85 ± 3,54 (0-18)	2,83 ± 3,91 (0-18)	11,78 ± 5,70 (0-22)	6,16 ± 2,05 (2-12)
Research day				
day1	0,98 ± 1,33 (0-6)	0,31 ± 0,68 (0-3)	3,10 ± 2,43 (0-9)	4,39 ± 2,57 (0-10)
day2	0,92 ± 1,62 (0-9)	0,90 ± 1,85 (0-8)	4,37 ± 2,65 (0-9)	6,20 ± 2,98 (0-15)
day3	0,78 ± 1,21 (0-6)	1,33 ± 2,49 (0-13)	3,69 ± 2,53 (0-9)	5,80 ± 3,32 (0-16)
day4	1,20 ± 1,97 (0-8)	0,71 ± 1,57 (0-7)	3,43 ± 2,71 (0-9)	5,33 ± 3,25 (0-14)
day5	0,98 ± 1,97 (0-9)	0,65 ± 1,38 (0-6)	3,08 ± 2,61 (0-10)	4,71 ± 3,04 (0-14)
day6	1 ± 1,64 (0-8)	0,43 ± 1,03 (0-5)	2,33 ± 1,93 (0-7)	3,76 ± 2,28 (0-11)
day7	0,78 ± 1,27 (0-5)	0,76 ± 1,75 (0-7)	2,55 ± 2,03 (0-6)	4,10 ± 2,52 (0-8)
Week day				
Monday	1,20 ± 1,72 (0-7)	0,29 ± 0,76 (0-4)	2,55 ± 2,13 (0-7)	4,04 ± 2,37 (0-11)
Tuesday	1,08 ± 1,90 (0-9)	0,69 ± 1,49 (0-7)	3,24 ± 2,45 (0-9)	5 ± 2,79 (0-12)
Wednesday	0,88 ± 1,52 (0-8)	1,02 ± 1,91 (0-8)	3,67 ± 2,56 (0-8)	5,57 ± 3,16 (0-15)
Thursday	1,04 ± 1,67 (0-8)	0,63 ± 1,28 (0-6)	3,82 ± 2,53 (0-9)	5,49 ± 2,72 (0-11)
Friday	1,14 ± 1,79 (0-9)	1,31 ± 2,53 (0-13)	3,69 ± 2,69 (0-10)	6,14 ± 3,36 (0-16)
Saturday	0,59 ± 1,10 (0-5)	0,63 ± 1,59 (0-8)	3,31 ± 2,80 (0-9)	4,53 ± 2,90 (0-10)
Sunday	0,71 ± 1,29 (0-6)	0,45 ± 1,19 (0-6)	2,12 ± 1,93 (0-7)	3,27 ± 2,55 (0-11)
Departure time trip				
06h-08h	0,24 ± 0,51 (0-2)	0,08 ± 0,34 (0-2)	0,71 ± 1,38 (0-5)	1,02 ± 1,67 (0-5)
08h-10h	0,94 ± 1,27 (0-5)	0,55 ± 1,67 (0-10)	2,90 ± 2,61 (0-10)	4,39 ± 3,59 (0-17)
10h-12h	1,02 ± 1,88 (0-9)	0,65 ± 1,20 (0-5)	3,53 ± 2,87 (0-14)	5,20 ± 3,52 (0-15)
12h-14h	0,82 ± 1,45 (0-8)	0,61 ± 1,17 (0-5)	3,67 ± 3,10 (0-12)	5,10 ± 3,65 (0-13)
14h-16h	0,88 ± 1,56 (0-8)	0,84 ± 1,69 (0-7)	3,86 ± 3,69 (0-18)	5,59 ± 4,26 (0-18)
16h-18h	1,00 ± 1,46 (0-6)	0,78 ± 1,70 (0-10)	3,69 ± 3,16 (0-16)	5,47 ± 3,86 (0-17)
18h-20h	1,20 ± 1,92 (0-8)	0,78 ± 1,65 (0-8)	2,49 ± 2,28 (0-10)	4,47 ± 3,07 (0-13)
20h-22h	0,27 ± 0,80 (0-4)	0,47 ± 1,29 (0-7)	1,25 ± 1,96 (0-9)	2,00 ± 2,68 (0-11)
22h-06h	0,18 ± 0,43 (0-2)	0,18 ± 0,48 (0-2)	0,45 ± 0,70 (0-2)	0,80 ± 1,04 (0-4)
Unknown	0,24 ± 0,84 (0-5)	0,06 ± 0,24 (0-1)	0,06 ± 0,24 (0-1)	0,35 ± 1,04 (0-6)
Start time activity				
06h-08h	0,14 ± 0,40 (0-2)	0,04 ± 0,20 (0-1)	0,57 ± 1,15 (0-5)	0,75 ± 1,32 (0-5)
08h-10h	0,63 ± 0,89 (0-3)	0,39 ± 1,61 (0-11)	2,14 ± 1,99 (0-7)	3,16 ± 2,85 (0-16)
10h-12h	0,73 ± 1,20 (0-6)	0,41 ± 0,92 (0-5)	2,24 ± 1,87 (0-8)	3,37 ± 2,31 (0-9)
12h-14h	0,45 ± 0,92 (0-5)	0,29 ± 0,64 (0-3)	2,14 ± 1,90 (0-6)	2,88 ± 2,16 (0-8)
14h-16h	0,51 ± 0,95 (0-5)	0,53 ± 1,17 (0-5)	2,49 ± 2,29 (0-9)	3,53 ± 2,69 (0-11)
16h-18h	0,61 ± 1,22 (0-5)	0,41 ± 0,88 (0-4)	2 ± 1,99 (0-10)	3,02 ± 2,32 (0-10)
18h-20h	0,78 ± 1,47 (0-8)	0,35 ± 0,69 (0-3)	1,39 ± 1,61 (0-7)	2,53 ± 2,17 (0-10)
20h-22h	0,14 ± 0,35 (0-1)	0,14 ± 0,60 (0-4)	0,49 ± 0,95 (0-4)	0,76 ± 1,44 (0-6)
22h-06h	0,02 ± 0,14 (0-1)	0,08 ± 0,27 (0-1)	0,10 ± 0,30 (0-1)	0,20 ± 0,45 (0-2)
Unknown	0,31 ± 0,93 (0-5)	0,47 ± 2,30 (0-15)	0,18 ± 0,71 (0-4)	0,96 ± 2,92 (0-18)
Duration trip (min)				
1-10	4,02 ± 3,96 (0-18)	3,20 ± 5,48 (0-26)	12,51 ± 8,76 (0-32)	19,73 ± 11,02 (1-46)
11-20	1,04 ± 1,79 (0-8)	1,12 ± 2,11 (0-12)	5,51 ± 3,77 (0-15)	7,67 ± 3,97 (1-6)
21-30	0,43 ± 0,78 (0-3)	0,39 ± 0,70 (0-2)	2,16 ± 2,14 (0-9)	2,98 ± 2,44 (0-11)
31- 60	0,51 ± 1,39 (0-7)	0,16 ± 0,54 (0-3)	2,08 ± 2,09 (0-9)	2,75 ± 2,39 (0-9)
>=61	0,14 ± 0,45 (0-2)	0,02 ± 0,14 (0-1)	0,27 ± 0,78 (0-4)	0,43 ± 1,01 (0-5)
Unknown	0,65 ± 1,95 (0-12)	0,12 ± 0,38 (0-2)	0,08 ± 0,27 (0-1)	0,84 ± 2,09 (0-12)
Duration activity (min)				
<=30	1,57 ± 2,32 (0-11)	2,10 ± 3,32 (0-12)	6,57 ± 4,83 (0-19)	10,24 ± 6,09 (0-22)
31-60	0,78 ± 1,39 (0-7)	0,35 ± 0,69 (0-3)	2,00 ± 1,69 (0-6)	3,14 ± 2,09 (0-8)
61-120	0,57 ± 0,90 (0-5)	0,20 ± 0,45 (0-2)	2,16 ± 1,56 (0-6)	2,92 ± 1,74 (0-7)
120-240	0,43 ± 0,76 (0-4)	0,10 ± 0,30 (0-1)	1,41 ± 1,56 (0-6)	1,94 ± 1,64 (0-7)
>=241	0,29 ± 0,73 (0-4)	0,02 ± 0,14 (0-1)	1,22 ± 1,78 (0-8)	1,53 ± 1,88 (0-8)
Unknown	0,67 ± 1,21 (0-6)	0,35 ± 1,31 (0-7)	0,37 ± 1,06 (0-6)	1,39 ± 2,74 (0-13)
Distance (km)				
0-0,5	1,61 ± 2,76 (0-10)	0,33 ± 1,32 (0-9)	2,53 ± 4,42 (0-20)	4,47 ± 6,78 (0-30)
0,6-2	1,47 ± 1,97 (0-8)	1,51 ± 2,51 (0-12)	5,43 ± 5,82 (0-26)	8,41 ± 7,23 (0-30)
2,1-10	2,47 ± 3,11 (0-13)	2,57 ± 4,44 (0-21)	9,53 ± 5,90 (0-27)	14,57 ± 7,58 (2-37)
10,1-50	1,12 ± 2,22 (0-12)	0,59 ± 1,08 (0-4)	4,78 ± 3,99 (0-17)	6,49 ± 4,39 (0-18)
>50,1	0,12 ± 0,48 (0-2)	0 ± 0 (0-0)	0,31 ± 0,76 (0-3)	0,43 ± 0,85 (0-3)
Unknown	0 ± 0 (0-0)	0 ± 0 (0-0)	0,02 ± 0,14 (0-1)	0,02 ± 0,14 (0-1)

Activity				
Work/Education	0,76 ± 1,69 (0-10)	0 ± 0 (0-0)	1,44 ± 1,78 (0-5)	2,20 ± 2,34 (0-10)
Shopping/services	1,02 ± 1,88 (0-11)	0,08 ± 0,34 (0-2)	4,84 ± 3,93 (0-18)	5,94 ± 4,34 (0-19)
Leisure	0,34 ± 1,00 (0-6)	0,02 ± 0,14 (0-1)	1,62 ± 1,79 (0-8)	1,98 ± 2,02 (0-9)
Social	1 ± 1,62 (0-7)	0,06 ± 0,24 (0-1)	1,72 ± 1,75 (0-7)	2,78 ± 2,77 (0-11)
Personal care	0,36 ± 0,66 (0-3)	0,02 ± 0,14 (0-1)	0,96 ± 0,99 (0-4)	1,34 ± 1,27 (0-5)
Walking	0,32 ± 0,68 (0-3)	0,12 ± 0,72 (0-5)	1,24 ± 2,59 (0-10)	1,68 ± 3,23 (0-12)
Bring/get	0,44 ± 0,79 (0-3)	0,10 ± 0,36 (0-2)	1,92 ± 3,02 (0-13)	2,46 ± 3,70 (0-18)
Other	0,12 ± 0,72 (0-5)	0 ± 0 (0-0)	0,18 ± 1,14 (0-8)	0,30 ± 1,33 (0-8)
Home	2,20 ± 2,40 (0-10)	1,78 ± 3,62 (0-17)	9,04 ± 5,37 (0-21)	13,02 ± 5,53 (2-27)
Transport mode				
Car driver/Motor	3,68 ± 5,64 (0-33)	0,41 ± 0,99 (0-5)	12,51 ± 9,78 (0-36)	15,75 ± 11,03 (0-40)
Car passenger	1,38 ± 2,81 (0-17)	0 ± 0 (0-0)	4,53 ± 4,66 (0-20)	5,63 ± 5,95 (0-25)
Car	0 ± 0 (0-0)	4,94 ± 6,89 (0-26)	0,12 ± 0,39 (0-2)	3,41 ± 6,22 (0-26)
Cyclist	0,36 ± 0,92 (0-5)	0,41 ± 0,78 (0-2)	1,76 ± 3,59 (0-13)	2,33 ± 4,09 (0-15)
Pedestrian	1,55 ± 2,65 (0-10)	0,68 ± 3,26 (0-19)	3,96 ± 6,47 (0-28)	5,73 ± 9,27 (0-36)
Public transport	0,21 ± 0,62 (0-3)	0,12 ± 0,41 (0-2)	0,41 ± 1,29 (0-6)	0,67 ± 1,58 (0-8)
Manual wheelchair, electric wheelchair, electric scooter	0 ± 0 (0-0)	0 ± 0 (0-0)	0 ± 0 (0-0)	0 ± 0 (0-0)
Disabled&adapted transport	0 ± 0 (0-0)	0 ± 0 (0-0)	0,08 ± 0,57 (0-4)	0,08 ± 0,56 (0-4)
Unknown	0,17 ± 0,76 (0-5)	0,94 ± 2,70 (0-15)	0,16 ± 0,62 (0-4)	1,49 ± 2,88 (0-15)
Company				
Alone	4,09 ± 4,86 (0-28)	0,56 ± 1,02 (0-4)	12,10 ± 7,65 (0-40)	15,84 ± 9,48 (0-53)
With other people	2,47 ± 2,98 (0-14)	0,32 ± 0,64 (0-2)	9,86 ± 7,01 (0-25)	12,02 ± 7,83 (0-25)
Unknown	0,81 ± 2,45 (0-15)	6,62 ± 8,34 (0-34)	1,57 ± 3,83 (0-22)	7,22 ± 11,42 (0-59)
Planning				
Planned	5,64 ± 5,97 (0-33)	1,50 ± 1,67 (0-6)	18,35 ± 9,55 (2-40)	24,16 ± 10,75 (0-53)
Spontaneous	1,36 ± 2,25 (0-8)	0,35 ± 0,54 (0-2)	4,57 ± 4,48 (0-16)	5,96 ± 5,70 (0-18)
Unknown	0,36 ± 1,45 (0-9)	5,65 ± 7,47 (0-27)	0,61 ± 1,57 (0-8)	4,96 ± 8,12 (0-30)
Single/chain				
Single	4,53 ± 3,54 (0-14)	3,41 ± 5,26 (0-24)	12,94 ± 8,54 (0-38)	19,37 ± 10,99 (2-51)
Chain	2,77 ± 5,10 (0-25)	4,09 ± 4,47 (0-16)	10,59 ± 7,09 (0-28)	15,61 ± 8,64 (0-38)

(Mean ± standard deviation (range))

ANNEX 3 Baseline results per outcome measure of the moderate MS subgroup

	Moderate MS (n=27)			
	Diary	**GPS**	**Diary&GPS**	**Total**
Number of trips	2,59 ± 2,07 (0-9)	1,65 ± 1,66 (0-6)	8,74 ± 4,09 (3-20)	4,33 ± 1,53 (2-9)
Research day				
day1	0,96 ± 1,16 (0-4)	0,15 ± 0,36 (0-1)	2,04 ± 1,89 (0-7)	3,15 ± 1,56 (0-7)
day2	0,56 ± 1,28 (0-5)	0,37 ± 0,69 (0-2)	2,96 ± 2,35 (0-9)	3,89 ± 2,26 (0-9)
day3	0,96 ± 1,79 (0-6)	0,48 ± 0,89 (0-3)	2,59 ± 2,24 (0-8)	4,04 ± 2,44 (0-10)
day4	0,41 ± 0,75 (0-2)	0,56 ± 0,89 (0-3)	2,81 ± 2,04 (0-8)	3,78 ± 2,33 (0-10)
day5	0,19 ± 0,56 (0-2)	0,44 ± 0,89 (0-3)	2,22 ± 2,29 (0-8)	2,85 ± 2,63 (0-8)
day6	0,59 ± 1,22 (0-5)	0,48 ± 1,25 (0-5)	1,89 ± 2,08 (0-8)	2,96 ± 2,17 (0-8)
day7	0,52 ± 1,19 (0-5)	0,19 ± 0,48 (0-2)	1,96 ± 2,18 (0-6)	2,67 ± 2,04 (0-12)
Week day				
Monday	0,85 ± 1,61 (0-6)	0,26 ± 0,59 (0-2)	2,19 ± 2,15 (0-6)	3,30 ± 2,25 (0-8)
Tuesday	0,96 ± 1,48 (0-5)	0,26 ± 0,66 (0-3)	1,78 ± 1,67 (0-6)	3 ± 1,64 (0-6)
Wednesday	0,59 ± 1,31 (0-5)	0,44 ± 0,80 (0-3)	3,07 ± 2,02 (0-8)	4,11 ± 1,95 (0-8)
Thursday	0,59 ± 1,39 (0-6)	0,30 ± 0,67 (0-2)	3,04 ± 2,58 (0-9)	3,93 ± 2,54 (0-9)
Friday	0,41 ± 0,69 (0-2)	0,41 ± 0,80 (0-2)	3,15 ± 2,09 (0-8)	3,96 ± 2,19 (0-10)
Saturday	0,52 ± 0,89 (0-2)	0,56 ± 0,89 (0-3)	2,11 ± 2,24 (0-8)	3,19 ± 2,47 (0-10)
Sunday	0,26 ± 0,59 (0-2)	0,44 ± 1,25 (0-5)	1,15 ± 1,61 (0-5)	1,85 ± 1,97 (0-6)
Departure time trip				
06h-08h	0,04 ± 0,19 (0-1)	0 ± 0 (0-0)	0,52 ± 1,16 (0-5)	0,56 ± 1,19 (0-5)
08h-10h	0,85 ± 1,03 (0-3)	0,11 ± 0,58 (0-3)	2,07 ± 2,34 (0-8)	3,04 ± 2,93 (0-10)
10h-12h	0,63 ± 0,74 (0-2)	0,33 ± 0,78 (0-3)	3,15 ± 2,54 (0-11)	4,11 ± 2,90 (0-12)
12h-14h	0,56 ± 1,09 (0-4)	0,19 ± 0,40 (0-1)	2,37 ± 1,21 (0-5)	3,11 ± 1,63 (0-7)
14h-16h	0,63 ± 1,04 (0-4)	0,56 ± 0,85 (0-3)	2,7 ± 2,35 (0-7)	3,89 ± 2,67 (0-10)
16h-18h	0,70 ± 0,82 (0-3)	0,44 ± 0,75 (0-3)	2,89 ± 2,28 (0-9)	4,04 ± 2,34 (0-9)
18h-20h	0,44 ± 0,70 (0-2)	0,48 ± 0,94 (0-4)	1,52 ± 1,78 (0-6)	2,44 ± 2,28 (0-7)
20h-22h	0,11 ± 0,32 (0-1)	0,33 ± 0,88 (0-4)	0,89 ± 1,09 (0-4)	1,33 ± 1,73 (0-8)
22h-06h	0,15 ± 0,46 (0-2)	0,04 ± 0,19 (0-1)	0,26 ± 0,53 (0-2)	0,44 ± 0,75 (0-3)
Unknown	0,22 ± 0,80 (0-3)	0,07 ± 0,27 (0-1)	0,11 ± 0,42 (0-2)	0,41 ± 1,25 (0-5)
Start time activity				
06h-08h	0 ± 0 (0-0)	0 ± 0	0,07 ± 0,27 (0-1)	0,07 ± 0,27 (0-1)
08h-10h	0,63 ± 0,84 (0-3)	0,07 ± 0,39 (0-2)	1,96 ± 1,81 (0-6)	2,67 ± 2,09 (0-7)
10h-12h	0,41 ± 0,80 (0-3)	0,15 ± 0,46 (0-2)	1,78 ± 1,70 (0-7)	2,33 ± 2,08 (0-8)
12h-14h	0,41 ± 0,75 (0-2)	0,07 ± 0,27 (0-1)	1,52 ± 1,16 (0-5)	2,00 ± 1,39 (0-5)
14h-16h	0,37 ± 0,57 (0-2)	0,26 ± 0,71 (0-3)	1,78 ± 1,58 (0-6)	2,41 ± 1,76 (0-6)
16h-18h	0,26 ± 0,53 (0-2)	0,37 ± 0,57 (0-2)	1,48 ± 1,45 (0-5)	2,11 ± 1,60 (0-5)
18h-20h	0,26 ± 0,53 (0-2)	0,33 ± 0,68 (0-2)	1 ± 1,24 (0-4)	1,59 ± 1,58 (0-5)
20h-22h	0 ± 0 (0-0)	0,19 ± 0,62 (0-3)	0,3 ± 0,61 (0-2)	0,48 ± 1,09 (0-5)
22h-06h	0,04 ± 0,19 (0-1)	0 ± 0 (0-0)	0 ± 0 (0-0)	0,04 ± 0,19 (0-1)
Unknown	0,19 ± 0,48 (0-2)	0,11 ± 0,42 (0-2)	0,11 ± 0,42 (0-2)	0,41 ± 1,08 (0-5)
Duration trip (min)				
1-10	1,67 ± 2,63 (0-10)	1,19 ± 1,96 (0-8)	7,19 ± 5,64 (0-22)	10,04 ± 7,26 (1-28)
11-20	1,22 ± 1,65 (0-6)	0,89 ± 1,09 (0-4)	4,52 ± 3,19 (0-12)	6,63 ± 3,39 (1-15)
21-30	0,56 ± 0,89 (0-3)	0,19 ± 0,56 (0-2)	2,26 ± 2,57 (0-10)	3 ± 2,92 (0-10)
31- 60	0,19 ± 0,56 (0-2)	0,15 ± 0,36 (0-1)	1,81 ± 1,73 (0-6)	2,15 ± 1,94 (0-7)
>=61	0,15 ± 0,46 (0-2)	0,07 ± 0,27 (0-1)	0,52 ± 094 (0-4)	0,74 ± 1,20 (0-4)
Unknown	0,56 ± 1,34 (0-5)	0,07 ± 0,27 (0-1)	0,19 ± 0,56 (0-2)	0,81 ± 1,80 (0-7)
Duration activity (min)				
<=30	0,67 ± 1,14 (0-5)	1,07 ± 1,36 (0-5)	4,3 ± 3,22 (1-16)	6,04 ± 4,10 (1-22)
31-60	0,44 ± 0,70 (0-2)	0,15 ± 0,36 (0-1)	2,33 ± 1,69 (0-5)	2,93 ± 1,73 (0-6)
61-120	0,63 ± 1,12 (0-5)	0,04 ± 0,19 (0-1)	1,56 ± 1,19 (0-4)	2,22 ± 1,74 (0-6)
120-240	0,26 ± 0,53 (0-2)	0,11 ± 0,32 (0-1)	1,11 ± 1,28 (0-5)	1,48 ± 1,48 (0-5)
>=241	0,26 ± 0,45 (0-1)	0,04 ± 0,19 (0-1)	0,56 ± 0,89 (0-3)	0,85 ± 0,95 (0-3)
Unknown	0,30 ± 0,87 (0-4)	0,15 ± 0,46 (0-2)	0,15 ± 0,36 (0-1)	0,59 ± 1,42 (0-5)
Distance				
0-0,5	0,96 ± 2,18 (0-10)	0,04 ± 0,19 (0-1)	1,63 ± 2,24 (0-6)	2,63 ± 3,26 (0-12)
0,6-2	1,22 ± 2,24 (0-10)	0,59 ± 1,08 (0-4)	3,48 ± 2,91 (0-10)	5,30 ± 3,99 (0-17)
2,1-10	1,22 ± 1,91 (0-9)	1,48 ± 2,03 (0-7)	7,07 ± 4,72 (1-18)	9,78 ± 5,02 (1-20)
10,1-50	0,74 ± 1,23 (0-4)	0,41 ± 0,89 (0-4)	3,74 ± 4,55 (0-15)	4,89 ± 5,39 (0-18)
>50,1	0,19 ± 0,62 (0-3)	0,04 ± 0,19 (0-1)	0,55 ± 0,94 (0-4)	0,74 ± 1,23 (0-4)
Unknown	0 ± 0 (0-0)	0 ± 0 (0-0)	0,04 ± 0,19 (0-1)	0,04 ± 0,19 (0-1)

Activity				
Work/Education	0 ± 0 (0-0)	0 ± 0 (0-0)	0,56 ± 1,28 (0-6)	0,56 ± 1,28 (0-6)
Shopping/services	0,56 ± 1,01 (0-4)	0 ± 0 (0-0)	3,33 ± 2,02 (0-9)	3,89 ± 2,22 (0-10)
Leisure	0,48 ± 0,80 (0-3)	0,15 ± 0,46 (0-2)	1,59 ± 1,85 (0-7)	2,22 ± 2,17 (0-7)
Social	0,56 ± 0,85 (0-2)	0,11 ± 0,32 (0-1)	1,78 ± 1,97 (0-8)	2,44 ± 2,34 (0-9)
Personal care	0,63 ± 0,79 (0-2)	0,04 ± 0,19 (0-1)	1,07 ± 1,00 (0-3)	1,74 ± 1,38 (0-5)
Walking	0,07 ± 0,27 (0-1)	0,11 ± 0,58 (0-3)	0,56 ± 1,05 (0-4)	0,74 ± 1,23 (0-4)
Bring/get	0,26 ± 0,66 (0-3)	0 ± 0 (0-0)	0,85 ± 1,41 (0-5)	1,11 ± 1,63 (0-5)
Other	0 ± 0 (0-0)	0 ± 0 (0-0)	0,15 ± 0,46 (0-2)	0,15 ± 0,46 (0-2)
Home	1,81 ± 1,50 (0-5)	1,00 ± 2,06 (0-8)	6,44 ± 3,78 (0-15)	9,26 ± 3,61 (4-18)
Transport mode				
Car driver/Motor	3,04 ± 4,30 (0-16)	0,65 ± 1,42 (0-5)	8,19 ± 9,04 (0-38)	11,30 ± 11,36 (0-44)
Car passenger	0,78 ± 1,04 (0-3)	0,5 ± 1 (0-4)	4,07 ± 4,98 (0-18)	5,11 ± 5,55 (0-21)
Car	0 ± 0 (0-0)	1,4 ± 1,85 (0-6)	0,19 ± 0,48 (0-2)	1,22 ± 1,78 (0-6)
Cyclist	0,35 ± 1,03 (0-4)	0,1 ± 0,45 (0-2)	0,63 ± 1,78 (0-8)	1 ± 2,5 (0-8)
Pedestrian	0,52 ± 0,85 (0-2)	0,1 ± 0,31 (0-1)	1,56 ± 2,50 (0-10)	2,11 ± 3,12 (0-12)
Public transport	0,09 ± 0,29 (0-1)	0,15 ± 0,49 (0-2)	1 ± 2,75 (0-13)	1,22 ± 3,09 (0-14)
Manual wheelchair, electric wheelchair, electric scooter	0 ± 0 (0-0)	0,15 ± 0,67 (0-3)	0,81 ± 2,45 (0-12)	0,93 ± 2,48 (0-12)
Disabled&adapted transport	0,04 ± 0,21 (0-1)	0 ± 0 (0-0)	0,04 ± 0,19 (0-1)	0,07 ± 0,39 (0-2)
Unknown	0,26 ± 0,75 (0-3)	0,4 ± 0,68 (0-2)	0 ± 0 (0-0)	0,70 ± 1,41 (0-6)
Company				
Alone	2,74 ± 3,00 (0-14)	0,7 ± 1,26 (0-4)	8,44 ± 6,86 (0-29)	11,37 ± 7,91 (0-36)
With other people	1,87 ± 2,01 (0-7)	0,45 ± 0,94 (0-4)	6,44 ± 5,13 (0-23)	8,52 ± 5,48 (0-26)
Unknown	0,48 ± 0,79 (0-2)	2,3 ± 2,13 (0-7)	1,59 ± 2,34 (0-8)	3,78 ± 3,65 (0-11)
Planning				
Planned	4,04 ± 3,87 (0-17)	1,65 ± 2,37 (0-10)	12,11 ± 7,08 (1-29)	16,89 ± 8,80 (3-35)
Spontaneous	0,78 ± 1,20 (0-4)	0,4 ± 0,82 (0-3)	3,67 ± 4,13 (0-18)	4,67 ± 4,68 (0-20)
Unknown	0,26 ± 0,86 (0-3)	1,40 ± 2,01 (0-7)	0,70 ± 2,02 (0-8)	2,11 ± 3,20 (0-11)
Single/chain				
Single	3,26 ± 2,56 (0-10)	1,50 ± 2,67 (0-9)	8,81 ± 5,33 (0-19)	12,96 ± 6,78 (2-26)
Chain	1,83 ± 3,77 (0-17)	1,95 ± 1,36 (0-6)	7,67 ± 6,25 (0-20)	10,70 ± 7,34 (0-27)

(Mean ± standard deviation (range))

ANNEX 4 Baseline results per outcome measure of the severe MS subgroup

	Severe MS (n=30)			
	Diary	**GPS**	**Diary&GPS**	**Total**
Number of trips	2,88 ± 3,09 (0-15)	0,8 ± 1,13 (0-4)	6,35 ± 4,72 (0-19)	3,34 ± 1,92 (0-8)
Research day				
day1	1,17 ± 1,42 (0-5)	0,24 ± 0,64 (0-2)	1,34 ± 1,40 (0-4)	2,76 ± 1,66 (0-6)
day2	0,66 ± 1,23 (0-4)	0,14 ± 0,44 (0-2)	1,76 ± 1,79 (0-6)	2,55 ± 2,21 (0-8)
day3	0,62 ± 1,15 (0-5)	0,14 ± 0,44 (0-2)	1,48 ± 1,75 (0-5)	2,24 ± 2,10 (0-6)
day4	0,86 ± 1,64 (0-5)	0,24 ± 0,58 (0-2)	1,97 ± 2,58 (0-11)	3,07 ± 3,37 (0-16)
day5	0,52 ± 1,21 (0-5)	0,17 ± 0,47 (0-2)	1,79 ± 1,90 (0-8)	2,48 ± 1,94 (0-8)
day6	0,41 ± 1,12 (0-5)	0,17 ± 0,47 (0-2)	1,55 ± 2,10 (0-7)	2,14 ± 2,61 (0-10)
day7	0,52 ± 1,02 (0-4)	0,10 ± 0,31 (0-1)	2,52 ± 2,26 (0-8)	3,14 ± 2,37 (0-9)
Week day				
Monday	0,48 ± 1,02 (0-4)	0,10 ± 0,31 (0-1)	2,48 ± 1,96 (0-7)	3,07 ± 2,03 (0-7)
Tuesday	0,76 ± 1,30 (0-4)	0,31 ± 0,66 (0-2)	1,21 ± 1,62 (0-8)	2,24 ± 2,08 (0-8)
Wednesday	0,52 ± 1,18 (0-5)	0,17 ± 0,54 (0-2)	3,45 ± 8,20 (0-45)	4,14 ± 8,31 (0-46)
Thursday	0,72 ± 1,07 (0-4)	0,14 ± 0,44 (0-2)	1,79 ± 2,13 (0-8)	2,66 ± 2,32 (0-8)
Friday	0,97 ± 1,64 (0-5)	0,17 ± 0,47 (0-2)	1,86 ± 2,00 (0-7)	3 ± 2,27 (0-9)
Saturday	0,79 ± 1,40 (0-5)	0,10 ± 0,41 (0-2)	1,52 ± 1,57 (0-4)	2,41 ± 1,84 (0-6)
Sunday	0,59 ± 1,35 (0-5)	0,21 ± 0,49 (0-2)	1,34 ± 1,82 (0-7)	2,14 ± 2,31 (0-10)
Departure time trip				
06h-08h	0,10 ± 0,31 (0-1)	0 ± 0 (0-0)	0,13 ± 0,43 (0-2)	0,23 ± 0,50 (0-2)
08h-10h	0,63 ± 1,25 (0-6)	0,03 ± 0,18 (0-1)	1,27 ± 1,78 (0-6)	1,93 ± 2,27 (0-7)
10h-12h	0,83 ± 1,72 (0-7)	0,17 ± 0,59 (0-3)	2,20 ± 2,64 (0-10)	3,2 ± 3,57 (0-12)
12h-14h	0,47 ± 0,68 (0-2)	0,07 ± 0,25 (0-1)	1,60 ± 1,81 (0-6)	2,13 ± 1,81 (0-6)
14h-16h	0,87 ± 2,00 (0-10)	0,20 ± 0,41 (0-1)	2,13 ± 1,83 (0-6)	3,20 ± 2,52 (0-10)
16h-18h	0,77 ± 1,14 (0-4)	0,21 ± 0,61 (0-3)	2,07 ± 2,29 (0-9)	3,03 ± 2,57 (0-12)
18h-20h	0,47 ± 0,86 (0-3)	0,23 ± 0,50 (0-2)	1,27 ± 1,64 (0-5)	1,97 ± 2,25 (0-8)
20h-22h	0,23 ± 0,63 (0-3)	0,17 ± 0,53 (0-2)	0,50 ± 0,86 (0-3)	0,90 ± 1,35 (0-4)
22h-06h	0,17 ± 0,46 (0-2)	0,07 ± 0,25 (0-1)	0,47 ± 0,90 (0-4)	0,70 ± 1,02 (0-4)
Unknown	0,37 ± 1,50 (0-8)	0,03 ± 0,18 (0-1)	0,17 ± 0,75 (0-4)	0,57 ± 1,96 (0-9)
Start time activity				
06h-08h	0 ± 0 (0-0)	0 ± 0 (0-0)	0,10 ± 0,40 (0-2)	0,10 ± 0,40 (0-2)
08h-10h	0,47 ± 1,17 (0-6)	0 ± 0 (0-0)	0,87 ± 1,20 (0-4)	1,33 ± 1,79 (0-7)
10h-12h	0,70 ± 1,32 (0-6)	0,07 ± 0,25 (0-1)	1,30 ± 1,56 (0-5)	2,07 ± 1,95 (0-7)
12h-14h	0,27 ± 0,52 (0-2)	0,07 ± 0,25 (0-1)	0,87 ± 1,07 (0-3)	1,20 ± 1,21 (0-4)
14h-16h	0,63 ± 1,67 (0-8)	0,13 ± 0,35 (0-1)	1,43 ± 1,41 (0-5)	2,20 ± 2,04 (0-8)
16h-18h	0,27 ± 0,52 (0-2)	0,07 ± 0,25 (0-1)	0,93 ± 1,51 (0-6)	1,27 ± 1,64 (0-7)
18h-20h	0,33 ± 0,66 (0-3)	0,13 ± 0,35 (0-1)	0,67 ± 1,16 (0-4)	1,13 ± 1,50 (0-5)
20h-22h	0,07 ± 0,25 (0-1)	0,13 ± 0,43 (0-2)	0,13 ± 0,43 (0-2)	0,33 ± 0,80 (0-4)
22h-06h	0,03 ± 0,18 (0-1)	0 ± 0 (0-0)	0,10 ± 0,31 (0-1)	0,13 ± 0,35 (0-1)
Unknown	0,17 ± 0,46 (0-2)	0,13 ± 0,35 (0-1)	0,17 ± 0,46 (0-2)	0,47 ± 0,82 (0-3)
Duration trip (min)				
1-10	2,00 ± 4,17 (0-20)	0,70 ± 1,42 (0-6)	4,67 ± 5,13 (0-20)	7,37 ± 7,77 (0-26)
11-20	1,33 ± 2,44 (0-10)	0,37 ± 0,77 (0-3)	3,20 ± 3,42 (0-13)	4,9 ± 4,59 (0-16)
21-30	0,40 ± 0,86 (0-4)	0,07 ± 0,25 (0-1)	1,80 ± 2,36 (0-8)	2,27 ± 2,46 (0-9)
31- 60	0,40 ± 0,62 (0-2)	0,03 ± 0,18 (0-1)	1,20 ± 1,58 (0-7)	1,63 ± 1,90 (0-9)
>=61	0,07 ± 0,25 (0-1)	0 ± 0 (0-0)	0,63 ± 0,96 (0-3)	0,70 ± 0,95 (0-3)
Unknown	1,00 ± 3,38 (0-17)	0 ± 0 (0-0)	0,30 ± 0,84 (0-4)	1,30 ± 3,51 (0-17)
Duration activity (min)				
<=30	0,47 ± 0,63 (0-2)	0,33 ± 0,76 (0-3)	1,93 ± 2,42 (0-10)	2,73 ± 3,13 (0-12)
31-60	0,63 ± 2,19 (0-12)	0,07 ± 0,25 (0-1)	1,17 ± 1,49 (0-5)	1,87 ± 2,85 (0-14)
61-120	0,47 ± 1,11 (0-5)	0,07 ± 0,25 (0-1)	1,63 ± 1,99 (0-8)	2,17 ± 2,49 (0-10)
120-240	0,37 ± 0,77 (0-3)	0,13 ± 0,35 (0-1)	0,83 ± 1,12 (0-4)	1,33 ± 1,27 (0-5)
>=241	0,33 ± 0,55 (0-2)	0 ± 0 (0-0)	0,63 ± 1,19 (0-5)	0,97 ± 1,22 (0-5)
Unknown	0,67 ± 2,11 (0-10)	0,13 ± 0,43 (0-2)	0,37 ± 0,81 (0-3)	1,17 ± 2,39 (0-11)
Distance				
0-0,5	1,93 ± 5,25 (0-26)	0,10 ± 0,40 (0-2)	2,5 ± 4,77	4,23 ± 8,11 (0-33)
0,6-2	0,60 ± 1,48 (0-6)	0,50 ± 1,11 (0-4)	2,81 ± 3,69	3,53 ± 5,10 (0-21)
2,1-10	1,53 ± 2,19 (0-8)	0,57 ± 1,04 (0-4)	5,73 ± 5,26	7,17 ± 5,62 (0-20)
10,1-50	0,7 ± 1,12 (0-5)	0 ± 0 (0-0)	2,12 ± 3,04	2,53 ± 3,19 (0-14)
>50,1	0,10 ± 0,40 (0-2)	0 ± 0 (0-0)	0,27 ± 0,78	0,33 ± 0,92 (0-4)
Unknown	0,03 ± 0,18 (0-1)	0 ± 0 (0-0)	0,04 ± 0,2	0,07 ± 0,37 (0-2)

Activity				
Work/Education	0,03 ± 0,19 (0-1)	0 ± 0 (0-0)	0,07 ± 0,37 (0-2)	0,10 ± 0,56 (0-3)
Shopping/services	0,69 ± 0,89 (0-3)	0,03 ± 0,19 (0-1)	1,48 ± 1,68 (0-6)	2,21 ± 1,92 (0-8)
Leisure	0,48 ± 0,99 (0-4)	0,03 ± 0,19 (0-1)	1,45 ± 1,84 (0-6)	1,97 ± 2,13 (0-6)
Social	0,86 ± 2,01 (0-9)	0,07 ± 0,37 (0-2)	1,34 ± 1,80 (0-7)	2,28 ± 3,05 (0-12)
Personal care	0,69 ± 1,39 (0-7)	0 ± 0 (0-0)	1,03 ± 1,18 (0-4)	1,72 ± 1,81 (0-8)
Walking	0,14 ± 0,44 (0-2)	0 ± 0 (0-0)	0,97 ± 1,94 (0-7)	1,10 ± 2,18 (0-9)
Bring/get	0,07 ± 0,26 (0-1)	0 ± 0 (0-0)	0,24 ± 0,95 (0-5)	0,31 ± 1,00 (0-5)
Other	0,07 ± 0,26 (0-1)	0 ± 0 (0-0)	0,14 ± 0,74 (0-4)	0,21 ± 0,94 (0-5)
Home	2,03 ± 2,61 (0-11)	0,45 ± 0,99 (0-4)	5,07 ± 4,36 (0-15)	7,55 ± 5,08 (0-20)
Transport mode				
Car driver/Motor	0,54 ± 1,03 (0-4)	0,08 ± 0,28 (0-1))	3,30 ± 4,94 (0-18)	3,47 ± 5,46 (0-19)
Car passenger	1,65 ± 2,80 (0-12)	0,15 ± 0,56 (0-2)	3,07 ± 3,26 (0-8)	4,27 ± 4,09 (0-14)
Car	0 ± 0 (0-0)	1,15 ± 1,52 (0-4)	0,11 ± 0,42 (0-2)	0,60 ± 1,43 (0-6)
Cyclist	0 ± 0 (0-0)	0,15 ± 0,56 (0-2)	0 ± 0 (0-0)	0,07 ± 0,37 (0-2)
Pedestrian	0,19 ± 0,80 (0-4)	0,15 ± 0,56 (0-2)	0,70 ± 2,60 (0-13)	0,87 ± 2,71 (0-14)
Public transport	0,12 ± 0,43 (0-2)	0 ± 0 (0-0)	0,07 ± 0,39 (0-2)	0,17 ± 0,53 (0-2)
Manual wheelchair, electric wheelchair, electric scooter	2,5 ± 5,57 (0-26)	0,77 ± 1,42 (0-5)	5,19 ± 9,67 (0-36)	7,17 ± 12,49 (0-42)
Disabled&adapted transport	0,38 ± 0,94 (0-4)	0 ± 0 (0-0)	0,30 ± 0,61 (0-2)	0,60 ± 1,16 (0-5)
Unknown	0,27 ± 0,78 (0-3)	0,23 ± 0,60 (0-2)	0,37 ± 1,74 (0-9)	0,97 ± 2,59 (0-12)
Company				
Alone	2,04 ± 3,36 (0-13)	0,15 ± 0,38 (0-1)	6,59 ± 8,85 (0-35)	7,77 ± 10,09 (0-40)
With other people	2,23 ± 2,76 (0-12)	0,08 ± 0,28 (0-1)	5,11 ± 4,20 (0-15)	6,57 ± 4,68 (0-17)
Unknown	1,38 ± 5,49 (0-28)	2,46 ± 2,03 (0-6)	1,41 ± 2,62 (0-11)	3,83 ± 6,74 (0-35)
Planning				
Planned	4,27 ± 5,87 (0-28)	0,69 ± 0,86 (0-3)	10,11 ± 8,89 (0-36)	13,3 ± 10,88 (0-44)
Spontaneous	0,42 ± 1,10 (0-4)	0,15 ± 0,56 (0-2)	1,33 ± 2,43 (0-9)	1,63 ± 3,21 (0-13)
Unknown	0,96 ± 2,96 (0-13)	1,85 ± 1,77 (0-6)	1,67 ± 2,76 (0-11)	3,23 ± 4,31 (0-15)
Single/chain				
Single	4,00 ± 3,36 (0-14)	1,31 ± 1,65 (0-6)	9,30 ± 6,76 (1-26)	12,60 ± 8,14 (0-34)
Chain	1,65 ± 4,15 (0-18)	1,38 ± 1,45 (0-5)	3,81 ± 3,94 (0-16)	5,53 ± 5,71 (0-21)

(Mean ± standard deviation (range))

ANNEX 5 Baseline results per outcome measure of the total MS group

	Total (n=108)			
	Diary	**GPS**	**Diary&GPS**	**Total**
Number of trips	3,26 ± 3,13 (0-18)	1,97 ± 2,99 (0-18)	9,51 ± 5,54 (0-22)	4,92 ± 2,24 (0-12)
Researchday				
day1	1,03 ± 1,31 (0-6)	0,25 ± 0,6 (0-3)	2,36 ± 2,18 (0-9)	3,64 ± 2,23 (0-10)
day2	0,76 ± 1,44 (0-9)	0,56 ± 1,38 (0-8)	3,31 ± 2,60 (0-9)	4,63 ± 3,04 (0-15)
day3	0,79 ± 1,35 (0-6)	0,79 ± 1,86 (0-13)	2,81 ± 2,44 (0-9)	4,39 ± 3,18 (0-16)
day4	0,91 ± 1,67 (0-8)	0,54 ± 1,22 (0-7)	2,88 ± 2,57 (0-11)	4,33 ± 3,21 (0-16)
day5	0,65 ± 1,55 (0-9)	0,47 ± 1,09 (0-6)	2,51 ± 2,40 (0-10)	3,64 ± 2,85 (0-14)
day6	0,74 ± 1,42 (0-8)	0,37 ± 0,98 (0-5)	2,01 ± 2,02 (0-8)	3,12 ± 2,43 (0-11)
day7	0,64 ± 1,18 (0-5)	0,44 ± 1,28 (0-7)	2,39 ± 2,13 (0-8)	3,48 ± 2,42 (0-12)
Weekday				
Monday	0,92 ± 1,55 (0-7)	0,23 ± 0,62 (0-4)	2,44 ± 2,08 (0-7)	3,59 ± 2,28 (0-11)
Tuesday	0,96 ± 1,64 (0-9)	0,48 ± 1,14 (0-7)	2,33 ± 2,25 (0-9)	3,75 ± 2,64 (0-12)
Wednesday	0,71 ± 1,38 (0-8)	0,64 ± 1,45 (0-8)	3,46 ± 4,68 (0-45)	4,81 ± 4,94 (0-46)
Thursday	0,84 ± 1,46 (0-8)	0,41 ± 0,99 (0-6)	3,07 ± 2,56 (0-9)	4,33 ± 2,82 (0-11)
Friday	0,91 ± 1,56 (0-9)	0,78 ± 1,88 (0-13)	3,06 ± 2,48 (0-10)	4,74 ± 3,13 (0-16)
Saturday	0,63 ± 1,14 (0-5)	0,47 ± 1,22 (0-8)	2,52 ± 2,49 (0-9)	3,62 ± 2,68 (0-10)
Sunday	0,56 ± 1,18 (0-6)	0,38 ± 1,06 (0-6)	1,66 ± 1,86 (0-7)	2,61 ± 2,42 (0-11)
Departure time trip				
06h-08h	0,15 ± 0,41 (0-2)	0,04 ± 0,23 (0-2)	0,5 ± 1,15 (0-5)	0,68 ± 1,29 (0-5)
08h-10h	0,83 ± 1,20 (0-6)	0,30 ± 1,20 (0-10)	2,24 ± 2,42 (0-10)	3,37 ± 3,26 (0-17)
10h-12h	0,87 ± 1,62 (0-9)	0,44 ± 0,98 (0-5)	3,06 ± 2,76 (0-14)	4,37 ± 3,46 (0-15)
12h-14h	0,66 ± 1,19 (0-8)	0,35 ± 0,87 (0-5)	2,77 ± 2,56 (0-12)	3,78 ± 3,07 (0-13)
14h-16h	0,81 ± 1,58 (0-10)	0,59 ± 1,28 (0-7)	3,09 ± 3,03 (0-18)	4,50 ± 3,62 (0-18)
16h-18h	0,86 ± 1,23 (0-6)	0,54 ± 1,29 (0-10)	3,04 ± 2,80 (0-16)	4,44 ± 3,35 (0-17)
18h-20h	0,81 ± 1,48 (0-8)	0,56 ± 1,27 (0-8)	1,91 ± 2,06 (0-10)	3,27 ± 2,90 (0-13)
20h-22h	0,22 ± 0,66 (0-4)	0,35 ± 1,03 (0-7)	0,95 ± 1,54 (0-9)	1,53 ± 2,19 (0-11)
22h-06h	0,17 ± 0,44 (0-2)	0,11 ± 0,37 (0-2)	0,41 ± 0,72 (0-4)	0,69 ± 0,97 (0-4)
Unknown	0,27 ± 1,05 (0-8)	0,06 ± 0,23 (0-1)	0,10 ± 0,47 (0-4)	0,43 ± 1,39 (0-9)
Start time activity				
06h-08h	0,06 ± 0,28 (0-2)	0,02 ± 0,14 (0-1)	0,31 ± 0,86 (0-5)	0,40 ± 0,99 (0-5)
08h-10h	0,58 ± 0,96 (0-6)	0,20 ± 1,13 (0-11)	1,74 ± 1,83 (0-7)	2,53 ± 2,52 (0-16)
10h-12h	0,64 ± 1,15 (0-6)	0,25 ± 0,70 (0-5)	1,86 ± 1,77 (0-8)	2,75 ± 2,22 (0-9)
12h-14h	0,39 ± 0,78 (0-5)	0,18 ± 0,49 (0-3)	1,63 ± 1,62 (0-6)	2,19 ± 1,89 (0-8)
14h-16h	0,51 ± 1,12 (0-8)	0,35 ± 0,91 (0-5)	2,02 ± 1,95 (0-9)	2,88 ± 2,38 (0-11)
16h-18h	0,43 ± 0,93 (0-5)	0,31 ± 0,69 (0-4)	1,57 ± 1,78 (0-10)	2,31 ± 2,10 (0-10)
18h-20h	0,53 ± 1,12 (0-8)	0,29 ± 0,61 (0-3)	1,09 ± 1,43 (0-7)	1,91 ± 1,95 (0-10)
20h-22h	0,08 ± 0,28 (0-1)	0,15 ± 0,56 (0-4)	0,34 ± 0,76 (0-4)	0,57 ± 1,21 (0-6)
22h-06h	0,03 ± 0,17 (0-1)	0,04 ± 0,19 (0-1)	0,07 ± 0,26 (0-1)	0,14 ± 0,37 (0-2)
Unknown	0,24 ± 0,72 (0-5)	0,29 ± 1,61 (0-15)	0,16 ± 0,58 (0-4)	0,69 ± 2,13 (0-18)
Duration trip (min)				
1-10	2,87 ± 3,87 (0-20)	2 ± 4,10 (0-26)	9 ± 7,92 (0-32)	13,87 ± 10,85 (0-46)
11-20	1,17 ± 1,95 (0-10)	0,85 ± 1,62 (0-12)	4,62 ± 3,64 (0-15)	6,64 ± 4,15 (0-16)
21-30	0,45 ± 0,83 (0-4)	0,25 ± 0,58 (0-2)	2,08 ± 2,30 (0-10)	2,79 ± 2,57 (0-11)
31- 60	0,4 ± 1,05 (0-7)	0,12 ± 0,43 (0-3)	1,77 ± 1,89 (0-9)	2,29 ± 2,19 (0-9)
>=61	0,12 ± 0,40 (0-2)	0,03 ± 0,17 (0-1)	0,44 ± 0,88 (0-4)	0,58 ± 1,04 (0-5)
Unknown	0,72 ± 2,31 (0-17)	0,07 ± 0,30 (0-2)	0,17 ± 0,56 (0-4)	0,96 ± 2,49 (0-17)
Duration activity (min)				
<=30	1,04 ± 1,79 (0-11)	1,35 ± 2,52 (0-12)	4,71 ± 4,34 (0-19)	7,10 ± 5,86 (0-22)
31-60	0,66 ± 1,53 (0-12)	0,22 ± 0,54 (0-3)	1,85 ± 1,68 (0-6)	2,73 ± 2,29 (0-14)
61-120	0,56 ± 1,01 (0-5)	0,12 ± 0,35 (0-2)	1,86 ± 1,62 (0-8)	2,54 ± 1,99 (0-10)
120-240	0,37 ± 0,71 (0-4)	0,11 ± 0,32 (0-1)	1,18 ± 1,39 (0-6)	1,66 ± 1,52 (0-7)
>=241	0,30 ± 0,62 (0-4)	0,02 ± 0,14 (0-1)	0,89 ± 1,47 (0-8)	1,20 ± 1,54 (0-8)
Unknown	0,57 ± 1,45 (0-10)	0,24 ± 0,96 (0-7)	0,31 ± 0,86 (0-6)	1,13 ± 2,38 (0-13)
Distance				
0-0,5	1,54 ± 3,51 (0-26)	0,19 ± 0,94 (0-9)	2,21 ± 4,00 (0-21)	3,94 ± 6,52 (0-33)
0,6-2	1,17 ± 1,94 (0-10)	1,00 ± 1,95 (0-12)	4,11 ± 4,80 (0-26)	6,28 ± 6,31 (0-30)
2,1-10	1,9 ± 2,65 (0-13)	1,74 ± 3,35 (0-21)	7,68 ± 5,71 (0-27)	11,31 ± 7,21 (0-37)
10,1-50	0,91 ± 1,75 (0-12)	0,38 ± 0,89 (0-4)	3,7 ± 4,04 (0-17)	4,99 ± 4,65 (0-18)
>50,1	0,13 ± 0,5 (0-3)	0,01 ± 0,10 (0-1)	0,34 ± 0,8 (0-4)	0,48 ± 0,98 (0-4)
Unknown	0,01 ± 0,1 (0-1)	0 ± 0 (0-0)	0,03 ± 0,17 (0-1)	0,04 ± 0,34 (0-2)

Activity				
Work/Education	0,37 ± 1,21 (0-10)	0 ± 0 (0-0)	0,84 ± 1,51 (0-6)	1,21 ± 1,99 (0-10)
Shopping/services	0,81 ± 1,47 (0-11)	0,05 ± 0,25 (0-2)	3,54 ± 3,31 (0-18)	4,40 ± 3,68 (0-19)
Leisure	0,42 ± 0,95 (0-6)	0,06 ± 0,27 (0-2)	1,57 ± 1,81 (0-8)	2,04 ± 2,07 (0-9)
Social	0,85 ± 1,59 (0-9)	0,08 ± 0,30 (0-2)	1,63 ± 1,81 (0-8)	2,56 ± 2,73 (0-12)
Personal care	0,52 ± 0,95 (0-7)	0,02 ± 0,14 (0-1)	1,01 ± 1,04 (0-4)	1,55 ± 1,46 (0-8)
Walking	0,21 ± 0,55 (0-3)	0,08 ± 0,57 (0-5)	0,99 ± 2,12 (0-10)	1,28 ± 2,58 (0-12)
Bring/get	0,29 ± 0,66 (0-3)	0,05 ± 0,25 (0-2)	1,19 ± 2,35 (0-13)	1,53 ± 2,86 (0-18)
Other	0,08 ± 0,51 (0-5)	0 ± 0 (0-0)	0,16 ± 0,90 (0-8)	0,24 ± 1,06 (0-8)
Home	2,06 ± 2,25 (0-11)	1,22 ± 2,78 (0-17)	7,29 ± 5,01 (0-21)	10,57 ± 5,49 (0-27)
Transport mode				
Car driver/Motor	2,68 ± 4,67 (0-33)	0,42 ± 1,06 (0-5)	8,96 ± 9,31 (0-38)	3,47 ± 5,46 (0-19)
Car passenger	1,31 ± 2,50 (0-17)	0,18 ± 0,63 (0-4)	4,03 ± 4,43 (0-20)	4,27 ± 4,09 (0-14)
Car	0 ± 0 (0-0)	3,15 ± 5,34 (0-26)	0,14 ± 0,42 (0-2)	0,60 ± 1,43 (0-6)
Cyclist	0,26 ± 0,82 (0-5)	0,27 ± 0,67 (0-2)	1 ± 2,73 (0-13)	0,07 ± 0,37 (0-2)
Pedestrian	0,94 ± 2,03 (0-10)	0,4 ± 2,34 (0-19)	2,48 ± 5,01 (0-28)	0,87 ± 2,71 (0-14)
Public transport	0,16 ± 0,51 (0-3)	0,10 ± 0,39 (0-2)	0,48 ± 1,69 (0-13)	0,17 ± 0,53 (0-2)
Manual wheelchair, electric wheelchair, electric scooter	0,68 ± 3,07 (0-26)	0,19 ± 0,76 (0-5)	1,57 ± 5,49 (0-36)	7,17 ± 12,49 (0-42)
Disabled&adapted transport	0,11 ± 0,52 (0-4)	0 ± 0 (0-0)	0,13 ± 0,52 (0-4)	0,60 ± 1,16 (0-5)
Unknown	0,22 ± 0,76 (0-5)	0,64 ± 1,98 (0-15)	0,17 ± 0,98 (0-9)	0,97 ± 2,59 (0-12)
Company				
Alone	3,21 ± 4,16 (0-28)	0,52 ± 1,02 (0-4)	9,70 ± 8,08 (0-40)	12,48 ± 9,83 (0-53)
With other people	2,28 ± 2,70 (0-14)	0,34 ± 0,77 (0-4)	7,72 ± 6,23 (0-25)	9,63 ± 6,89 (0-26)
Unknown	0,86 ± 3,33 (0-28)	4,49 ± 6,46 (0-34)	1,53 ± 3,17 (0-22)	5,42 ± 8,91 (0-59)
Planning				
Planned	4,89 ± 5,51 (0-33)	1,39 ± 1,81 (0-10)	14,55 ± 9,46 (0-40)	19,32 ± 11,30 (0-53)
Spontaneous	0,97 ± 1,81 (0-8)	0,33 ± 0,64 (0-3)	3,49 ± 4,14 (0-18)	4,44 ± 5,16 (0-20)
Unknown	0,50 ± 1,89 (0-13)	3,64 ± 5,82 (0-27)	0,91 ± 2,08 (0-11)	3,77 ± 6,31 (0-30)
Single/chain				
Single	4,08 ± 3,29 (0-14)	2,43 ± 4,17 (0-24)	10,9 ± 7,55 (0-38)	15,89 ± 9,83 (0-51)
Chain	2,24 ± 4,55 (0-25)	2,93 ± 3,51 (0-16)	8,05 ± 6,74 (0-28)	11,58 ± 8,66 (0-38)

(Mean ± standard deviation (range))

ANNEX 6 Results of the Wilcoxon test per data collection method

	DIARY	GPS	DIARY&GPS	Total
	Wilcoxon	Wilcoxon	Wilcoxon	Wilcoxon
Research day				
day 1-2	**0,004****	0,152	**0,004****	0,394
day 1-3	0,054	0,085	0,381	0,402
day 1-4	**0,008****	0,108	0,249	0,170
day 1-5	**0,001****	0,700	0,929	**0,001****
day 1-6	**0,003****	0,645	0,054	**0,001****
day 1-7	**0,002****	0,964	0,567	**0,003****
day 2-1	**0,004****	0,152	**0,004****	0,394
day 2-3	0,368	0,694	**0,019****	0,930
day 2-4	0,835	0,856	0,117	0,835
day 2-5	0,360	0,345	**0,005****	**0,028***
day 2-6	0,851	0,359	**0,000****	**0,012****
day 2-7	0,901	0,067	**0,002****	**0,012****
day 3-1	0,054	0,085	0,381	0,402
day 3-2	0,368	0,694	**0,019****	0,930
day 3-4	0,483	0,867	0,564	0,608
day 3-5	0,122	0,137	0,486	**0,023***
day 3-6	0,283	0,192	**0,004****	**0,003****
day 3-7	0,354	**0,027***	0,254	**0,018****
day 4-1	**0,008****	0,108	0,249	0,170
day 4-2	0,835	0,856	0,117	0,835
day 4-3	0,483	0,867	0,564	0,608
day 4-5	0,165	0,161	0,109	**0,048***
day 4-6	0,710	0,219	**0,006****	**0,018****
day 4-7	0,756	0,071	0,158	0,127
day 5-1	**0,001****	0,700	0,929	**0,001****
day 5-2	0,360	0,345	**0,005****	**0,028***
day 5-3	0,122	0,137	0,486	**0,023***
day 5-4	0,165	0,161	0,109	**0,048***
day 5-6	0,536	0,986	0,074	0,074
day 5-7	0,530	0,643	0,807	0,832
day 6-1	**0,003****	0,645	0,054	**0,001****
day 6-2	0,851	0,359	**0,000****	**0,012****
day 6-3	0,283	0,192	**0,004****	**0,003****
day 6-4	0,710	0,219	**0,006****	**0,018****
day 6-5	0,536	0,986	0,074	0,074
day 6-7	0,956	0,410	0,235	0,754
day 7-1	**0,002****	0,964	0,567	**0,003****
day 7-2	0,901	0,067	**0,002****	**0,012****
day 7-3	0,354	**0,027***	0,254	**0,018****
day 7-4	0,756	0,071	0,158	0,127
day 7-5	0,530	0,643	0,807	0,832
day 7-6	0,956	0,410	0,235	0,754
Week day				
Monday-Tuesday	0,402	0,085	0,423	**0,048***
Monday-Wednesday	0,425	**0,015****	**0,011****	**0,030***
Monday-Thursday	0,952	0,183	0,077	0,064
Monday-Friday	0,320	**0,018****	0,067	**0,003****
Monday-Saturday	0,201	0,178	0,932	0,746
Monday-Sunday	**0,025***	0,309	**0,004****	**0,024***

Tuesday-Monday	0,402	0,085	0,423	**0,048***
Tuesday-Wednesday	0,159	0,291	0,026	0,486
Tuesday-Thursday	0,450	0,865	**0,011****	0,979
Tuesday-Friday	0,871	0,304	0,066	0,082
Tuesday-Saturday	0,069	0,511	0,440	0,070
Tuesday-Sunday	**0,006****	0,450	0,933	**0,001****
Wednesday-Monday	0,425	**0,015****	**0,011****	**0,030***
Wednesday-Tuesday	0,159	0,291	,026	0,486
Wednesday-Thursday	0,349	0,173	,619	0,389
Wednesday-Friday	0,125	0,943	,739	0,247
Wednesday-Saturday	0,490	0,071	,029	**0,018****
Wednesday-Sunday	0,131	0,104	**0,000****	**0,000****
Thursday-Monday	0,952	0,183	0,077	0,064
Thursday-Tuesday	0,450	0,865	**0,011****	0,979
Thursday-Wednesday	0,349	0,173	0,619	0,389
Thursday-Friday	0,372	0,172	0,743	0,148
Thursday-Saturday	0,216	0,606	0,101	**0,035***
Thursday-Sunday	**0,041***	0,659	**0,000****	**0,000****
Friday-Monday	0,320	**0,018****	0,067	**0,003****
Friday-Tuesday	0,871	0,304	0,066	0,082
Friday-Wednesday	0,125	0,943	0,739	0,247
Friday-Thursday	0,372	0,172	0,743	0,148
Friday-Saturday	**0,037***	**0,035***	0,092	**0,000****
Friday-Sunday	**0,004****	,081	**0,000****	**0,000****
Saturday-Monday	0,201	0,178	0,932	0,746
Saturday-Tuesday	0,069	0,511	0,440	0,070
Saturday-Wednesday	0,490	0,071	0,029	**0,018****
Saturday-Thursday	0,216	0,606	0,101	**0,035***
Saturday-Friday	**0,037***	**0,035***	0,092	**0,000****
Saturday-Sunday	0,416	,953	**0,003****	**0,026***
Sunday-Monday	**0,025***	0,309	**0,004****	**0,024***
Sunday-Tuesday	**0,006****	0,450	0,933	**0,001****
Sunday-Wednesday	0,131	0,104	**0,000****	**0,000****
Sunday-Thursday	**0,041***	0,659	**0,000****	**0,000****
Sunday-Friday	**0,004****	0,081	**0,000****	**0,000****
Sunday-Saturday	0,416	0,953	**0,003****	**0,026***
Departure time trip				
06h-08h (1) - 08h-10h (2)	**0,000****	**0,002****	**0,000****	**0,000****
06h-08h (1) - 10h-12h (3)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 12h-14h (4)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 14h-16h (5)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 16h-18h (6)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 18h-20h (7)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 20h-22h (8)	0,216	**0,000****	0,072	**0,000****
06h-08h (1) - 22h-06h (9)	0,573	**0,013****	0,854	0,377
08h-10h (2) - 06h-08h (1)	**0,000****	**0,002****	**0,000****	**0,000****
08h-10h (2) - 10h-12h (3)	0,838	**0,016****	**0,004****	**0,003****
08h-10h (2) - 12h-14h (4)	0,230	0,064	**0,033***	**0,042***
08h-10h (2) - 14h-16h (5)	0,386	**0,001****	**0,005****	**0,001****
08h-10h (2) - 16h-18h (6)	0,283	**0,005****	**0,007****	**0,003****
08h-10h (2) - 18h-20h (7)	0,889	**0,005****	0,419	0,386
08h-10h (2) - 20h-22h (8)	**0,000****	0,182	**0,000****	**0,000****
08h-10h (2) - 22h-06h (9)	**0,000****	0,105	**0,000****	**0,000****

10h-12h (3) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
10h-12h (3) - 08h-10h (2)	0,838	**0,016****	**0,004****	**0,003****
10h-12h (3) - 12h-14h (4)	0,239	0,647	0,711	0,379
10h-12h (3) - 14h-16h (5)	0,300	0,280	0,978	0,873
10h-12h (3) - 16h-18h (6)	0,462	0,745	0,797	0,825
10h-12h (3) - 18h-20h (7)	0,661	0,668	**0,000****	0,144
10h-12h (3) - 20h-22h (8)	**0,000****	0,159	**0,000****	**0,000****
10h-12h (3) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
12h-14h (4) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
12h-14h (4) - 08h-10h (2)	0,230	0,064	**0,033***	**0,042***
12h-14h (4) - 10h-12h (3)	0,239	0,647	0,711	0,379
12h-14h (4) - 14h-16h (5)	0,787	**0,048***	0,372	0,074
12h-14h (4) - 16h-18h (6)	**0,035***	0,321	0,473	**0,044***
12h-14h (4) - 18h-20h (7)	0,360	0,207	**0,001****	0,412
12h-14h (4) - 20h-22h (8)	**0,000****	0,443	**0,000****	**0,000****
12h-14h (4) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
14h-16h (5) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
14h-16h (5) - 08h-10h (2)	0,386	**0,001****	**0,005****	**0,001****
14h-16h (5) - 10h-12h (3)	0,300	0,280	0,978	0,873
12h-14h (4) - 14h-16h (5)	0,787	**0,048***	0,372	0,074
14h-16h (5) - 16h-18h (6)	0,094	0,356	0,955	0,534
14h-16h (5) - 18h-20h (7)	0,566	0,390	**0,000****	0,098
14h-16h (5) - 20h-22h (8)	**0,001****	**0,018****	**0,000****	**0,000****
14h-16h (5) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
16h-18h (6) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
16h-18h (6) - 08h-10h (2)	0,283	**0,005****	**0,007****	**0,003****
16h-18h (6) - 10h-12h (3)	0,462	0,745	0,797	0,825
16h-18h (6) - 12h-14h (4)	**0,035***	0,321	0,473	**0,044***
16h-18h (6) - 14h-16h (5)	0,094	0,356	0,955	0,534
16h-18h (6) - 18h-20h (7)	0,290	0,793	**0,000****	**0,016****
16h-18h (6) - 20h-22h (8)	**0,000****	0,093	**0,000****	**0,000****
16h-18h (6) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
18h-20h (7) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
18h-20h (7)- 08h-10h (2)	0,889	**0,005****	0,419	0,386
18h-20h (7) - 10h-12h (3)	0,661	0,668	**0,000****	0,144
18h-20h (7) - 12h-14h (4)	0,36	0,207	**0,001****	0,412
18h-20h (7) - 14h-16h (5)	0,566	0,390	**0,000****	0,098
18h-20h (7) - 16h-18h (6)	0,290	0,793	**0,000****	**0,016****
18h-20h (7) - 20h-22h (8)	**0,000****	0,058	**0,000****	**0,000****
18h-20h (7) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
20h-22h (8)- 06h-08h (1)	0,216	**0,000****	0,072	**0,000****
20h-22h (8) - 08h-10h (2)	**0,000****	0,182	**0,000****	**0,000****
20h-22h (8) - 10h-12h (3)	**0,000****	0,159	**0,000****	**0,000****
20h-22h (8) - 12h-14h (4)	**0,000****	0,443	**0,000****	**0,000****
20h-22h (8) - 14h-16h (5)	**0,001****	**0,018****	**0,000****	**0,000****
20h-22h (8) - 16h-18h (6)	**0,000****	0,093	**0,000****	**0,000****
20h-22h (8)- 18h-20h (7)	**0,000****	0,058	**0,000****	**0,000****
20h-22h (8) - 22h-06h (9)	0,464	**0,001****	**0,001****	**0,001****
22h-06h (9)- 06h-08h (1)	0,573	**0,013****	0,854	0,377
22h-06h (9)- 08h-10h (2)	**0,000****	0,105	**0,000****	**0,000****
22h-06h (9) - 10h-12h (3)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 12h-14h (4)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 14h-16h (5)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 16h-18h (6)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 18h-20h (7)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 20h-22h (8)	0,464	**0,001****	**0,001****	**0,001****

Start time activity				
06h-08h (1) - 08h-10h (2)	**0,000****	**0,012****	**0,000****	**0,000****
06h-08h (1) - 10h-12h (3)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 12h-14h (4)	**0,000****	**0,001****	**0,000****	**0,000****
06h-08h (1) - 14h-16h (5)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 16h-18h (6)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 18h-20h (7)	**0,000****	**0,000****	**0,000****	**0,000****
06h-08h (1) - 20h-22h (8)	0,460	**0,007****	0,955	0,199
06h-08h (1) - 22h-06h (9)	0,172	0,141	**0,007****	**0,019****
08h-10h (2) - 06h-08h (1)	**0,000****	**0,012****	**0,000****	**0,000****
08h-10h (2) - 10h-12h (3)	0,726	0,060	0,599	0,158
08h-10h (2) - 12h-14h (4)	**0,045***	0,238	0,972	0,974
08h-10h (2) - 14h-16h (5)	0,259	**0,022***	0,186	0,113
08h-10h (2) - 16h-18h (6)	0,089	**0,008****	0,276	0,903
08h-10h (2) - 18h-20h (7)	0,247	**0,015****	**0,008****	0,803
08h-10h (2) - 20h-22h (8)	**0,000****	0,569	**0,000****	**0,000****
08h-10h (2) - 22h-06h (9)	**0,000****	0,051	**0,000****	**0,000****
10h-12h (3) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
10h-12h (3) - 08h-10h (2)	0,726	0,060	0,599	0,158
10h-12h (3) - 12h-14h (4)	**0,038***	0,479	0,558	0,111
10h-12h (3) - 14h-16h (5)	0,177	0,548	0,317	0,677
10h-12h (3) - 16h-18h (6)	0,089	0,469	0,087	0,182
10h-12h (3) - 18h-20h (7)	0,134	0,439	**0,001****	0,071
10h-12h (3) - 20h-22h (8)	**0,000****	0,112	**0,000****	**0,000****
10h-12h (3) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
12h-14h (4) - 06h-08h (1)	**0,000****	**0,001****	**0,000****	**0,000****
12h-14h (4) - 08h-10h (2)	**0,045***	0,238	0,972	0,974
12h-14h (4) - 10h-12h (3)	**0,038***	0,479	0,558	0,111
12h-14h (4) - 14h-16h (5)	0,480	0,229	0,236	0,117
12h-14h (4) - 16h-18h (6)	0,601	0,122	0,214	0,812
12h-14h (4) - 18h-20h (7)	0,413	0,102	**0,001****	0,809
12h-14h (4) - 20h-22h (8)	**0,002****	0,495	**0,000****	**0,000****
12h-14h (4) - 22h-06h (9)	**0,000****	**0,003****	**0,000****	**0,000****
14h-16h (5) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
14h-16h (5) - 08h-10h (2)	0,259	**0,022***	0,186	0,113
14h-16h (5) - 10h-12h (3)	0,177	0,548	0,317	0,677
14h-16h (5) - 12h-14h (4)	0,480	0,229	0,236	0,117
14h-16h (5) - 16h-18h (6)	0,566	0,844	**0,01****	0,368
14h-16h (5) - 18h-20h (7)	0,861	0,901	**0,000****	0,167
14h-16h (5) - 20h-22h (8)	**0,001****	0,056	**0,000****	**0,000****
14h-16h (5) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
16h-18h (6) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
16h-18h (6) - 08h-10h (2)	0,089	**0,008****	0,276	0,903
16h-18h (6) - 10h-12h (3)	0,089	0,469	0,087	0,182
16h-18h (6) - 12h-14h (4)	0,601	0,122	0,214	0,812
16h-18h (6) - 14h-16h (5)	0,566	0,844	**0,01****	
16h-18h (6) - 18h-20h (7)	0,670	0,993	,077	0,672
16h-18h (6) - 20h-22h (8)	**0,002****	**0,033***	**0,000****	**0,000****
16h-18h (6) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****
18h-20h (7) - 06h-08h (1)	**0,000****	**0,000****	**0,000****	**0,000****
18h-20h (7) - 08h-10h (2)	0,247	**0,015****	**0,008****	0,803
18h-20h (7) - 10h-12h (3)	0,134	0,439	**0,001****	0,071
18h-20h (7) - 12h-14h (4)	0,413	0,102	**0,001****	0,809
18h-20h (7) - 14h-16h (5)	0,861	0,901	**0,000****	0,167
18h-20h (7) - 16h-18h (6)	0,670	0,993	0,077	0,672
18h-20h (7) - 20h-22h (8)	**0,000****	**0,016****	**0,000****	**0,000****
18h-20h (7) - 22h-06h (9)	**0,000****	**0,000****	**0,000****	**0,000****

20h-22h (8) - 06h-08h (1)	0,460	**0,007****	0,955	0,199
20h-22h (8) - 08h-10h (2)	**0,000****	0,569	**0,000****	**0,000****
20h-22h (8) - 10h-12h (3)	**0,000****	0,112	**0,000****	**0,000****
20h-22h (8) - 12h-14h (4)	**0,002****	0,495	**0,000****	**0,000****
20h-22h (8) - 14h-16h (5)	**0,001****	0,056	**0,000****	**0,000****
20h-22h (8) - 16h-18h (6)	**0,002****	**0,033***	**0,000****	**0,000****
20h-22h (8)- 18h-20h (7)	**0,000****	**0,016****	**0,000****	**0,000****
20h-22h (8) - 22h-06h (9)	**0,047***	**0,012****	**0,000****	**0,000****
22h-06h (9) - 06h-08h (1)	0,172	0,141	**0,007****	**0,019****
22h-06h (9)- 08h-10h (2)	**0,000****	0,051	**0,000****	**0,000****
22h-06h (9) - 10h-12h (3)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 12h-14h (4)	**0,000****	**0,003****	**0,000****	**0,000****
22h-06h (9) - 14h-16h (5)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 16h-18h (6)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 18h-20h (7)	**0,000****	**0,000****	**0,000****	**0,000****
22h-06h (9) - 20h-22h (8)	**0,047***	**0,012****	**0,000****	**0,000****
Duration trip (min)				
1-10 (1) - 11-20 (2)	**0,000****	0,072	**0,000****	**0,000****
1-10 (1) - 21-30 (3)	**0,000****	**0,000****	**0,000****	**0,000****
1-10 (1) - 31- 60 (4)	**0,000****	**0,000****	**0,000****	**0,000****
1-10 (1) - >=61 (5)	**0,000****	**0,000****	**0,000****	**0,000****
11-20 (2) - 1-10 (1)	**0,000****	0,072	**0,000****	**0,000****
11-20 (2) - 21-30 (3)	**0,017****	**0,000****	**0,000****	**0,000****
11-20 (2) - 31- 60 (4)	**0,000****	**0,000****	**0,000****	**0,000****
11-20 (2) - >=61 (5)	**0,000****	**0,000****	**0,000****	**0,000****
21-30 (3) - 1-10 (1)	**0,000****	**0,000****	**0,000****	**0,000****
21-30 (3) - 11-20 (2)	**0,017****	**0,000****	**0,000****	**0,000****
21-30 (3) - 31- 60 (4)	0,069	0,102	0,143	**0,005****
21-30 (3) - >=61 (5)	**0,000****	**0,006****	**0,000****	**0,000****
31- 60 (4) - 1-10 (1)	**0,000****	**0,000****	**0,000****	**0,000****
31- 60 (4)- 11-20 (2)	**0,000****	**0,000****	**0,000****	**0,000****
31- 60 (4) - 21-30 (3)	0,069	0,102	0,143	**0,005****
31- 60 (4) - >=61 (5)	0,094	0,154	**0,000****	**0,000****
>=61 (5) - 1-10 (1)	**0,000****	**0,000****	**0,000****	**0,000****
>=61 (5) - 11-20 (2)	**0,000****	**0,000****	**0,000****	**0,000****
>=61 (5) - 21-30 (3)	**0,000****	**0,006****	**0,000****	**0,000****
>=61 (5) - 31- 60 (4)	0,094	0,154	**0,000****	**0,000****
Duration activity (min)				
<=30 (1) - 31-60 (2)	**0,043***	**0,000****	**0,000****	**0,000****
<=30 (1) - 61-120 (3)	**0,007****	**0,000****	**0,000****	**0,000****
<=30 (1) - 120-240 (4)	**0,000****	**0,000****	**0,000****	**0,000****
<=30 (1) - >=241 (5)	**0,000****	**0,000****	**0,000****	**0,000****
31-60 (2) - <=30 (1)	**0,043***	**0,000****	**0,000****	**0,000****
31-60 (2) - 61-120 (3)	0,659	0,156	0,780	0,637
31-60 (2) - 120-240 (4)	0,119	0,407	**0,013****	**0,012****
31-60 (2) - >=241 (5)	**0,049***	**0,001****	**0,000****	**0,000****
61-120 (3) - <=30 (1)	**0,007****	**0,000****	**0,000****	**0,000****
61-120 (3) - 31-60 (2)	0,659	0,156	0,780	0,637
61-120 (3) - 120-240 (4)	0,212	0,599	**0,000****	**0,011****
61-120 (3) - >=241 (5)	**0,048***	**0,016****	**0,000****	**0,000****
120-240 (4) - <=30 (1)	**0,000****	**0,000****	**0,000****	**0,000****
120-240 (4) - 31-60 (2)	0,119	0,407	**0,013****	**0,012****
120-240 (4) - 61-120 (3)	0,212	0,599	**0,000****	**0,011****
120-240 (4) - >=241 (5)	0,635	**0,005****	0,088	**0,009****

>=241 (5) - <=30 (1)	**0,000****	**0,000****	**0,000****	**0,000****
>=241 (5) - 31-60 (2)	**0,049***	**0,001****	**0,000****	**0,000****
>=241 (5) - 61-120 (3)	**0,048***	**0,016****	**0,000****	**0,000****
>=241 (5) - 120-240 (4)	0,635	**0,005****	0,088	**0,009****
Distance				
0-0,5 (1) - 0,6-2 (2)	0,664	**0,000****	**0,000****	**0,004****
0-0,5 (1) - 2,1-10 (3)	**0,003***	**0,000****	**0,000****	**0,000****
0-0,5 (1) - 10,1-50 (4)	0,418	0,065	**0,000****	**0,032***
0-0,5 (1) ->50,1 (5)	**0,000****	**0,013****	**0,000****	**0,000****
0,6-2 (2) - 0-0,5 (1)	0,664	**0,000****	**0,000****	**0,004****
0,6-2 (2) - 2,1-10 (3)	0,368	**0,008****	**0,000****	**0,000****
0,6-2 (2) - 10,1-50 (4)	0,835	**0,002****	0,953	0,283
0,6-2 (2) - >50,1 (5)	0,360	**0,000****	**0,000****	**0,000****
2,1-10 (3) - 0-0,5 (1)	**0,003***	**0,000****	**0,000****	**0,000****
2,1-10 (3) - 0,6-2 (2)	0,368	**0,008****	**0,000****	**0,000****
2,1-10 (3) - 10,1-50 (4)	**0,000****	**0,000****	**0,000****	**0,000****
2,1-10 (3) - >50,1 (5)	**0,000****	**0,000****	**0,000****	**0,000****
10,1-50 (4) - 0-0,5 (1)	0,418	0,065	**0,000****	**0,032***
10,1-50 (4) - 0,6-2 (2)	0,835	**0,002****	0,953	0,283
0,1-50 (4) - 2,1-10 (3)	**0,000****	**0,000****	**0,000****	**0,000****
10,1-50 (4) - >50,1 (5)	**0,000****	**0,000****	**0,000****	**0,000****
>50,1 (5) - 0-0,5 (1)	**0,000****	**0,013****	**0,000****	**0,000****
>50,1 (5)- 0,6-2 (2)	0,360	**0,000****	**0,000****	**0,000****
>50,1 (5) - 2,1-10 (3)	**0,000****	**0,000****	**0,000****	**0,000****
>50,1 (5) - 10,1-50 (4)	**0,000****	**0,000****	**0,000****	**0,000****
Activity				
Work/Education - Shopping/services	**0,000****	0,066	**0,000****	**0,000****
Work/Education - Leisure	**0,000****	**0,039***	0,002**	**0,000****
Work/Education - Social	**0,001****	**0,018****	**0,000****	**0,000****
Work/Education - Personal care	**0,004****	0,180	**0,04***	**0,000****
Work/Education - Walking	0,561	0,109	0,686	0,926
Work/Education - Bring/get	0,532	0,068	0,366	0,245
Work/Education - Other	**0,038***	1,000	**0,000****	**0,000****
Work/Education - Home	**0,000****	**0,000****	**0,000****	**0,000****
Shopping/services - Work/Education	**0,000****	0,066	**0,000****	**0,000****
Shopping/services - Leisure	1,000	0,312	**0,000****	**0,000****
Shopping/services - Social	0,246	0,234	**0,000****	**0,003****
Shopping/services - Personal care	0,454	0,673	**0,000****	**0,000****
Shopping/services - Walking	**0,000****	1,000	**0,000****	**0,000****
Shopping/services - Bring/get	**0,001****	1,000	**0,000****	**0,000****
Shopping/services - Other	**0,000****	0,066	**0,000****	**0,000****
Shopping/services - Home	**0,000****	**0,000****	**0,000****	**0,000****
Leisure - Work/Education	**0,000****	**0,039***	0,002**	**0,000****
Leisure - Shopping/services	1,000	0,312	**0,000****	**0,000****
Leisure - Social	0,246	0,918	0,295	0,337
Leisure - Personal care	0,454	0,292	0,062	**0,013****
Leisure - Walking	**0,000****	0,344	**0,003****	**0,000****
Leisure - Bring/get	**0,001****	0,437	0,021*	**0,000****
Leisure - Other	**0,000****	**0,039***	**0,000****	**0,000****
Leisure - Home	**0,000****	**0,000****	**0,000****	**0,000****
Social - Work/Education	**0,001****	**0,018****	**0,000****	**0,000****
Social - Shopping/services	0,246	0,234	**0,000****	**0,003****
Social - Leisure	0,246	0,918	0,295	0,337
Social - Personal care	0,929	0,149	**0,011****	0,204
Social - Walking	0,000	0,285	**0,000****	**0,000****
Social - Bring/get	**0,018****	0,305	**0,000****	**0,000****
Social - Other	**0,000****	**0,018****	**0,000****	**0,000****
Social - Home	**0,000****	**0,000****	**0,000****	**0,000****
Personal care- Work/Education	**0,004****	0,180	**0,040***	**0,000****

Personal care - Shopping/services	0,454	0,673	**0,000****	**0,000****
Personal care - Leisure	0,454	0,292	0,062	**0,013****
Personal care - Social	0,929	0,149	**0,011****	0,204
Personal care - Walking	**0,000****	0,500	0,070	**0,000****
Personal care - Bring/get	0,012**	0,600	0,129	**0,001****
Personal care - Other	**0,000****	0,180	**0,000****	**0,000****
Personal care - Home	**0,000****	**0,000****	**0,000****	**0,000****
Walking - Work/Education	0,561	0,109	0,686	0,926
Walking - Shopping/services	**0,000****	1,000	**0,000****	**0,000****
Walking - Leisure	**0,000****	0,344	**0,003****	**0,000****
Walking - Social	0,000	0,285	**0,000****	**0,000****
Walking - Personal care	**0,000****	0,500	0,070	**0,000****
Walking - Bring/get	0,190	0,933	0,778	0,366
Walking - Other	0,064	0,109	**0,000****	**0,000****
Walking - Home	**0,000****	**0,000****	**0,000****	**0,000****
Bring/get - Work/Education	0,532	0,068	0,366	0,245
Bring/get - Shopping/services	**0,001****	1,000	**0,000****	**0,000****
Bring/get - Leisure	**0,001****	0,437	0,021*	**0,000****
Bring/get - Social	**0,018****	0,305	**0,000****	**0,000****
Bring/get - Personal care	0,012**	0,600	0,129	**0,001****
Bring/get - Walking	0,190	0,933	0,778	0,366
Bring/get - Other	**0,003****	0,068	**0,000****	**0,000****
Bring/get - Home	**0,000****	**0,000****	**0,000****	**0,000****
Other - Work/Education	**0,038***	1,000	**0,000****	**0,000****
Other - Shopping/services	**0,000****	0,066	**0,000****	**0,000****
Other - Leisure	**0,000****	**0,039***	**0,000****	**0,000****
Other - Social	**0,000****	**0,018****	**0,000****	**0,000****
Other - Personal care	**0,000****	0,180	**0,000****	**0,000****
Other - Walking	0,064	0,109	**0,000****	**0,000****
Other - Bring/get	**0,003****	0,068	**0,000****	**0,000****
Other- Home	**0,000****	**0,000****	**0,000****	**0,000****
Home - Work/Education	**0,000****	**0,000****	**0,000****	**0,000****
Home - Shopping/services	**0,000****	**0,000****	**0,000****	**0,000****
Home - Leisure	**0,000****	**0,000****	**0,000****	**0,000****
Home - Social	**0,000****	**0,000****	**0,000****	**0,000****
Home - Personal care	**0,000****	**0,000****	**0,000****	**0,000****
Home-Walking	**0,000****	**0,000****	**0,000****	**0,000****
Home- Bring/get	**0,000****	**0,000****	**0,000****	**0,000****
Home - Other	**0,000****	**0,000****	**0,000****	**0,000****
Transport mode				
Car driver/Motor (1) - Car passenger (2)	**0,002****	0,257	**0,001****	**0,006****
Car driver/Motor (1) - Car (0)	/	**0,000****	**0,000****	**0,000****
Car driver/Motor (1) - Cyclist (3)	**0,000****	0,661	**0,000****	**0,000****
Car driver/Motor (1) - Pedestrian (4)	**0,000****	0,625	**0,000****	**0,000****
Car driver/Motor (1) - Public transport (7)	**0,000****	0,169	**0,000****	**0,000****
Manual wheelchair, electric wheelchair, electric scooter (8)	**0,000****	0,518	**0,000****	**0,000****
Car driver/Motor (1)- Disabled&adapted transport (9)	**0,000****	**0,001****	**0,000****	**0,000****
Car passenger (2) - Car driver/Motor (1)	**0,002****	0,257	**0,001****	**0,006****
Car passenger (2) - Car (0)	/	**0,000****	**0,000****	0,989
Car passenger (2) - Cyclist (3)	**0,000****	0,586	**0,000****	**0,000****
Car passenger (2) - Pedestrian (4)	0,060	0,645	**0,000****	**0,000****
Car passenger (2) - Public transport (7)	**0,000****	0,723	**0,000****	**0,000****
Car passenger (2) - Manual wheelchair, electric wheelchair, electric scooter (8)	**0,001****	0,476	**0,000****	**0,000****
Car passenger (2) - Disabled&adapted transport (9)	**0,000****	**0,017****	**0,000****	**0,000****

Car (0) - Car driver/Motor (1)	/	**0,000****	**0,000****	**0,000****
Car (0) - Car passenger (2)	/	**0,000****	**0,000****	0,989
Car (0) - Cyclist (3)	/	**0,000****	**0,015****	**0,000****
Car (0) - Pedestrian (4)	/	**0,000****	**0,000****	**0,003****
Car (0) - Public transport (7)	/	**0,000****	0,176	**0,000****
Car (0)- Manual wheelchair, electric wheelchair, electric scooter (8)	/	**0,000****	**0,010****	**0,000****
Car (0) - Disabled&adapted transport (9)	/	**0,000****	0,856	**0,000****
Cyclist (3) - Car driver/Motor (1)	**0,000****	0,661	**0,000****	**0,000****
Cyclist (3) - Car passenger (2)	**0,000****	0,586	**0,000****	**0,000****
Cyclist (3) - Car (0)	/	**0,000****	**0,015****	**0,000****
Cyclist (3) - Pedestrian (4)	**0,004****	0,924	**0,010****	**0,004****
Cyclist (3) - Public transport (7)	0,314	0,326	0,191	0,139
Cyclist (3) - Manual wheelchair, electric wheelchair, electric scooter (8)	0,28	0,795	0,505	0,777
Cyclist (3) - Disabled&adapted transport (9)	0,285	**0,005****	**0,017****	**0,031***
Pedestrian (4) - Car driver/Motor (1)	**0,000****	0,625	**0,000****	**0,000****
Pedestrian (4) - Car passenger (2)	0,060	0,645	**0,000****	**0,000****
Pedestrian (4) - Car (0)	/	**0,000****	**0,000****	**0,003****
Pedestrian (4) - Cyclist (3)	**0,004****	0,924	**0,010****	**0,004****
Pedestrian (4) - Public transport (7)	**0,000****	0,437	**0,000****	**0,000****
Pedestrian (4) - Manual wheelchair, electric wheelchair, electric scooter (8)	0,184	0,647	0,148	0,062
Pedestrian (4) - Disabled&adapted transport (9)	**0,000****	**0,017****	**0,000****	**0,000****
Public transport (7) - Car driver/Motor (1)	**0,000****	0,169	**0,000****	**0,000****
Public transport (7) - Car passenger (2)	**0,000****	0,723	**0,000****	**0,000****
Public transport (7) - Car (0)	/	**0,000****	0,176	**0,000****
Public transport (7) - Cyclist (3)	0,314	,326	0,191	0,139
Public transport (7) - Pedestrian (4)	**0,000****	,437	**0,000****	**0,000****
Public transport (7) - Manual wheelchair, electric wheelchair, electric scooter (8)	0,053	0,323	0,158	0,203
Public transport (7) - Disabled&adapted transport (9)	0,82	**0,043***	0,159	0,264
Manual wheelchair, electric wheelchair, electric scooter (8) - Car driver/Motor (1)	**0,000****	0,518	**0,000****	**0,000****
Manual wheelchair, electric wheelchair, electric scooter (8) - Car passenger (2)	**0,001****	0,476	**0,000****	**0,000****
Manual wheelchair, electric wheelchair, electric scooter (8) - Car (0)	/	**0,000****	**0,010****	**0,000****
Manual wheelchair, electric wheelchair, electric scooter (8) - Cyclist (3)	0,28	0,795	0,505	0,777
Manual wheelchair, electric wheelchair, electric scooter (8) - Pedestrian (4)	0,184	0,647	0,148	0,062
Manual wheelchair, electric wheelchair, electric scooter (8)- Public transport (7)	0,053	0,323	0,158	0,203
Manual wheelchair, electric wheelchair, electric scooter (8) - Disabled&adapted transport (9)	**0,030***	**0,024***	**0,010****	**0,013****
Disabled&adapted transport (9) - Car driver/Motor (1)	**0,000****	**0,001****	**0,000****	**0,000****
Disabled&adapted transport (9) - Car passenger (2)	**0,000****	**0,017****	**0,000****	**0,000****
Disabled&adapted transport (9) - Car (0)	/	**0,000****	0,856	**0,000****
Disabled&adapted transport (9) - Cyclist (3)	0,285	**0,005****	**0,017****	**0,031***
Disabled&adapted transport (9) - Pedestrian (4)	**0,000****	**0,017****	**0,000****	**0,000****
Disabled&adapted transport (9) - Public transport (7)	0,82	**0,043***	0,159	0,264
Disabled&adapted transport (9) - Manual wheelchair, electric wheelchair, electric scooter (8)	**0,030***	**0,024***	**0,010****	**0,013****

*(Significant *p<0 ,05 ; **p<0 ,01)*

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An analysis of disease-related personal, socio-demographic and trip-related characteristics influencing the reporting rate of data collection methods during a travel survey

Richting: **master in de verkeerskunde-mobiliteitsmanagement**
Jaar: **2013**

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Datum: **2/06/2013**